

# Advantages of the Implementation of IPSAS in Brazilian Public Accounting: Analysis of the perception of the members of GTCON

## Abstract

The study objective was to assess how the members of the Technical Group for the Standardization of Accounting Procedures (GTCON) assess the advantages of the implementation of the International Public Sector Accounting Standards in Brazil. Therefore, a questionnaire was used, elaborated based on five theoretical approaches. The research universe corresponded to the participants in GTCON. The sample resulted in 108 respondents, totaling 27% of the population. The reliability of the tool was tested using the model defined by Cronbach (1951). As each theoretical dimension addressed consists of multiple variables, their dimensionality was reduced using Main Components Analysis (MCA). In addition, multiple linear regression was used, based on the main components of each theoretical construct. *The perception of the standards, the interpretation of the standards, the cost-benefit of the implementation and the educational responsibility* were submitted to analysis as independent variables, and the *advantages of the implementation of the Ipsas* were submitted as the dependent variable. The main results evidenced that the research participants agreed that the implementation of the Ipsas is a feasible target. As to the cost-benefit analysis of the implementation, according to the GTCON, the result of the application of the Ipsas exceeds the investments made. It was also observed that interviewees did not agree that the training and application of the Ipsas should be guaranteed through personal efforts, but through the government, i.e. the more the public sector takes responsibility for qualifying the standards, the greater the advantages that will result. Finally, regarding the *interpretation of the standards*, according to GTCON, it has not been well defined yet how and who will actually be responsible for the interpretation, the international entities or the local institutions involved in the process.

**Key words:** Ipsas; GTCON; Public Accounting; Perception.

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## 1. Introduction

The current economic order has strengthened the countries' interdependence and, at the same time, required a shared financial information standard. This has been influenced by the technological progress in the communication area, by the advance in transportation means and by the growth of international trade, which has increasingly approximated the world in recent decades. Thus, as highlighted by Mapurunga, Meneses and Peter (2011), a global movement was developed in favor of the international governance of the accounting standards, aiming for further comparison and understanding of the information presented in the different countries, in private as well as public sector accounting.

In this context, the *International Financial Reporting Standards* (IFRS) emerged, a set of standards issued and revised by the Iasb - *International Accounting Standards Board*, which aim to standardize accounting procedures and policies among countries. The IFRS were the base for the development of the *International Public Sector Accounting Standards* – Ipsas, according to Christiaens, Reyniers and Rollé (2010), thus avoiding the need to create new concepts for public sector accounting.

The objective of the Ipsas is to improve the information from public sector accounting, permitting the comparability and providing tools for the social control of public entities, with a view to the further understanding of bookkeeping information and its disclosure in the financial statements, provoking profound changes in management, whether in the way the public equity is managed or in the form of recognition, measuring and disclosure of equity items.

Sharing this idea, Pina and Torres (2003, p. 335) consider that the justification to apply the international accounting standards in the public area is that, through this standard, the public entity can provide more precise information about the measuring of equity goods and about the costs of public services.

In that sense, Kohama (2009) comments that, besides being complex, public sector accounting is of paramount importance, as it controls, registers and interprets the phenomena that affect the budget, finance and equity of each public entity. On the other hand, this complexity stands out when observing how many information users public sector accounting has, that is, the entire society. Thus, developing a model of communication with society for the sake of social control is a complex society.

Brazil has been going through a change in search of the harmonization of public sector accounting standards, adapting to the international standards. According to Mapurunga, Meneses and Peter (2011, p. 98), this process has been conducted through mutual efforts between:

The Federal Council of Accounting, together with the National Secretary of the Treasury, the State Courts of Auditors, the Higher Education Institutions and other federal, state and municipal representatives, which got mobilized to insert the convergence process of the international public sector accounting standards in Brazil. (2011, p. 98)

In the absence of (LRF) of the fiscal management board, the National Secretary of the Treasury, under Art. 67 of the Fiscal Responsibility Law, turned into the Central Organ of the Federal Accounting System, with a view to consolidating the accounts of the entities of the Federation and, in addition, used the lack of regulation in the LRF to be the temporary standardizer of the Casp. To comply with that function, Decree No. 109/2011 was issued, creating the Technical Standardization Group of Accounting Procedures (GTCON) and regulating its composition and functioning.

This technical group, consisting of all representative segments of governmental accounting, is responsible for analyzing and elaborating diagnoses and studies for the minimal standardization of standards and accounting practices, account plans and budgetary classification of public revenues and expenses in the Union, states, Federal District and cities.

In an appropriate observation, Paludo (2012) alerts that the change provoked by the convergence with the Ipsas not only promotes challenges, but also requires that the professionals prepare to adapt to the global standards. In that sense, GTCON is highly responsible for defining the Casp, and mainly for reducing divergences, to the benefit of fiscal management transparency, the rationalization of costs in the entities of the Federation and improve the quality of accounting information.

Hence, investigation the view of the members of this technical group about this entire convergence process of the public sector accounting standards can be essential to understand the consequences of the implementation of the Ipsas. Thus, this research aims to answer the following question: **How do the accounting professionals from GTCON perceive the advantages of the implementation of the international public sector accounting standards in Brazil?**

In that sense, the general objective of the research is to assess the GTCON members' perception about the advantages of implementing the international public sector accounting standards in Brazil. At this threshold, the contribution to a better understanding of the GTCON participants' view, the lack of a notion on the adaptation process of these public accounting standards, the lack of studies on the theme, besides the contribution not only to the accounting class in general, but to society as a whole, reveal the relevance and justification of this research.

This study is divided in five parts, including this introduction. The second section presents a literature review, highlighting the current context of the harmonization of the accounting standards, the Ipsas in Brazil and globally and the theoretical model and research hypotheses. In the third part, the methodological aspects are presented, and the results are discussed in the fourth part. Finally, the fifth part presents the main conclusions and the references used.

## 2. Theoretical framework

### 2.1 Convergence of International Public Sector Accounting Standards

The complex phenomenon of globalization, driven by the revolutions in transportation, communication and in the advances in information technology, has expanded the corporate operations in different countries, in which the exchange and dissemination of ideals have led to their further integration.

The accounting standardization, together with accounting itself, has constantly evolved and is completely subject to the influence of culture, the economy, legal thinking, power, the interests at stake, etc. (Martins, Martins & Martins, 2007, p. 8)

In that sense, Agostino, Drago and Silipo (2011, pp.437- 438) affirm that, if there are economic events of the same kind among countries, then these events should be reported consistently and in similar disclosure models. Thus, the financial statements are molded according to an information standard that permits making more accurate information. That started the internationalization of the accounting standards, which emerges from the need for information, in order to minimize the different criteria and practices each country adopts to recognize and measure each transaction.

The objective of the standardization, as Niyama (2005) highlights, is "the rupture of frontiers and obstacles among countries, making the information more intelligible to the different users". Thus, as emphasized in Lemes and Carvalho (2010), the adoption of a single global accounting avoids the existence of different stages in the adoption of financial reporting standards and publications.

In that context, the International Accounting Standards Committee (Iasc) was born, an independent entity that was established in 1973 and restructured in 2001, when it was called International Accounting Standards Board (Iasb), with the mission of developing the IFRS - International Financial Reporting Standards, a sole set of converging and globally accepted high-quality accounting standards (Alexander & Jermakowicz, 2006).

The development of the International Public Sector Accounting Standards started in 1997 with the Public Sector Committee (PSC) of the International Federation of Accountants (Ifac), which was created in 1986. Next, the PSC had its name changed to International Public Sector Accounting Standards Board (IP-SASB), with the objective of issuing International Public Sector Accounting Standards, as well as to promote the acceptance and international convergence of these standards.

As the convergence with the international standards permits comparing the financial statements, this process was also established in the public sector to enhance these statements' ability to provide information (Mapurunga, Meneses & Peter, 2011, p. 97)

Based on the international standards applied to the private sector (IFRS), the so-called International Public Sector Accounting Standards (Ipsas) emerged. These standards turned into international references to assess the governments' accounting practices around the world (Chan, 2008, Christiaens, Reyniers & Rollé, 2010).

The Ipsas are pronouncements that generally determine a full set of statements to be elaborated with a view to orienting and harmonizing public sector accounting in a wide range of countries, with a view to the transparency, efficiency and quality of the information transmitted.

The implementation of these standards can entail different changes in the public sector, mainly regarding the increased information transparency, as well as in the efficiency and efficacy of public actions. In that sense, in line with Hendriksen and Breda (1999), Accounting, as an information sciences, represents an essential tool, as it allows the managers to be able to achieve their objectives skillfully, as it provides information that turns the decisions made more correct.

Nevertheless, it is interesting to highlight that the harmonization process of public sector accounting also comes with different obstacles and challenges, in accordance with Brusca and Condor (2002, p. 154), such as the great importance the legal system plays in public sector accounting, resulting from the importance of the budget, as well as the regulatory standards; linguistic and cultural differences in the different countries; differences in the country's economic development; ingrained nationalism, in which each country considers its accounting system to be the most appropriate; and the general traditionalism of public administrations with regard to change.

Thus, with a view to improving the accounting information, Brazil is going through the convergence process with the International Public Sector Accounting Standards, aiming to eliminate differences between the national and international standards to enhance the transparency in public management and admit the comparability of the information produced.

## 2.2 Reflexes of convergence in Brazil

In Brazil, the convergence procedure started with the publication, in 2004, of CFC Decree No. 37/2004, which discusses the harmonization process of the International Public Sector Accounting Standards, through the formation of a study group in the public area that was aimed at studying and analyzing the Brazilian Public Sector Accounting Standards (NBCASP), in parallel with the Ipsas, created by Ifac. The group consisted of CFC members, Brazilian Secretary of the Treasury (STN) and the Executive Secretary of the Ministry of the Treasury.

According to Varandas (2013, pp. 14-15), the Technical Group, created by the CFC, "had the initial function of translating and validating the Ipsas and, as from 2010, it should elaborate and discuss minutes for the implementation of the international standards in Brazil". When weighing the stage of the conceptual convergence between the Brazilian Public Sector Accounting Standards and the Ipsas, Frago, Macêdo, Gusmão Lopes, Ribeiro and Perdeneiras (2012) concluded that there are several aspects to be debated on with a view to a concrete convergence with the international standards.

As the literature demonstrates, the implementation of the Ipsas in Brazil still meets with challenges and problems, as the start of its adoption has been extended several times for different reasons, among which the following can be mentioned: difficulty to train the professionals and to accept these changes, adaptation to the new phase of Accounting in Brazil, including the creation of new tools for information and for the control of the Public System etc.

In that perspective, the National Secretary of the Treasury (STN), as the central entity in the Federal Accounting System, with a view to consolidating the accounts of the entities of the Federation, issued Decree 109/2011, which created the Technical Group for the Standardization of Accounting Procedures (GTCON), determining on its composition and functioning. This Decree was revoked later on in Decree 510/2014, which is currently in force.

The attributions of GTCON have been established in Art. 1 of Decree STN 510/2014, among which the analysis and elaboration of studies and diagnoses can be highlighted, the evaluation of the changes in the Manual of Public Sector Accounting (MCASP), elaborated by the central Accounting entity of the Union, with a view to its permanent updating and the responsibility to propose the issuing of instructions on accounting procedures or the qualification of existing procedures.

It should be highlighted that the GTCON is technical and consultative and manifests itself through recommendations. It should be guided by an ongoing dialogue with a view to the reduction of divergences, thus benefiting the transparency of tax management, the rationalization of costs in the entities of the Federation and social control (Brasil, 2014).

Thus, as the convergence process with the international public sector accounting standards develops, the GTCON turns into a fundamental piece in this change, in view of its responsibilities and characteristics. It is highlighted that its members come from a wide range of academic and market backgrounds, which leads to a wider range in the specific solutions to the problems in the harmonization process, as well as to the systemization of the accounting standards in the public sector.

There are many studies about the internationalization of the accounting standards applied to the public sector, including Benito, Brusca and Montesinos (2007), Chan (2008), Christiaens, Reyniers and Rollé (2010), Oulasvirta (2013), Toudas, Poutos and Balios (2013), Besides the other publications cited in this study, without exhausting the list of researchers. Nevertheless, these studies are centered on the legal harmonization process of these standards, without focusing on the perception of the agents involved. It is highlighted that the studies from the perspective of the accounting professionals' perception, about the implementation of the international public sector accounting standards, are scarce and, in most cases, exploratory.

Haller and Keppler (2002) emphasize that the international accounting standards can only fulfill their objective of guaranteeing the reliability and comparability of the accounting information, when correctly interpreted and applied by who elaborates and prepares the financial statements, that is, for the International Public Sector Accounting Standards to have the expected effect, the professionals and responsible public entities need to correctly interpret and apply them.

In that sense, they should be highlighted that, among the studies about the understanding of the accounting professionals' perception, Joshi, Bremser and Al-Ajmi (2008) stands out, who reached the conclusion that, according to the interviewees, the application of the accounting standards based on principles and an increasing demand for orientation represents challenges.

In the same sense, Bozkurt, Islamoğlu and Öz (2013) comment that discovering the differences in the perception of those interested in public sector accounting will help to study how to reduce these differences. The results these researchers achieved demonstrate that the interviewees believe that the public institutions should play the main role in the adaptation and training of the international standards. It should be highlighted that, to achieve the benefits and advantages of the internationalization of accounting standards, the users need to perceive, interpret, understand and be accountable for the practice.

Therefore, the analysis of the GTCON's perception about the advantages of implementing the Ipsas for Brazilian public entities is clearly relevant to discover the benefits and advantages of its implementation, mainly due to the fact that the convergence process comes with some challenges, as demonstrated by the literature, resulting from the culture, political, economic and social structure and the consequent reluctance to change.



## 2.3 Theoretical model and research hypotheses

The guidelines of new public management and the reforms required for public sector accounting in Western countries are widely discussed in the international literature (Guthrie, 2005 and Olson, Guthrie & Humphrey, 1998), while little is known about similar reforms and their results in developing countries and countries with economies in transition.

The rhetoric that the reforms will improve the efficiency, the transparency and the accountability of the public organizations through the adoption of accounting techniques from the private sector is not clear yet – mainly in Brazil, where the convergence of the accounting standards is just beginning.

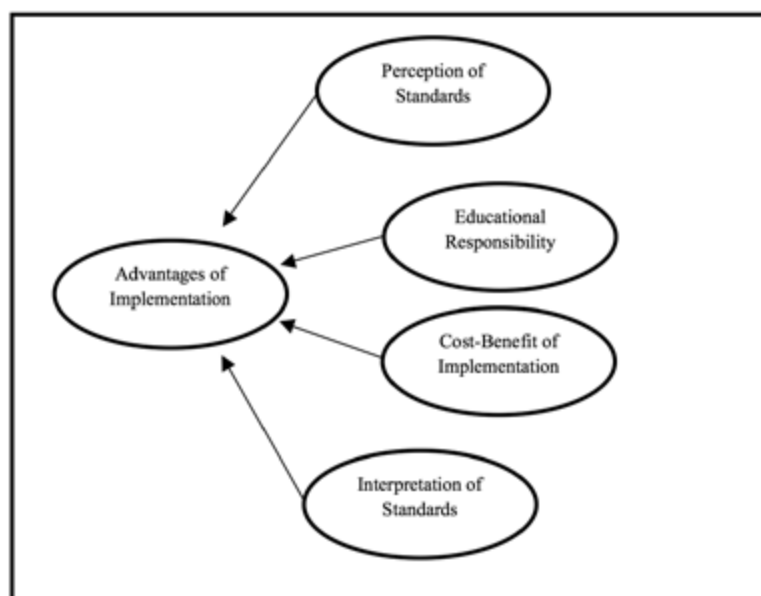
The institutionalization of new views to change organizations' accounting practices, as well as the deinstitutionalization of older practices molded by transitions depends on a broad discussion among all actors involved in this process. The process of translating views into practical changes demands the active presence of the “epistemic community”, according to Antipova and Bourmistrov (2013, p.447), that is, the members of the technical community who have the capacity to mediate the institutionalization and the processes of deinstitutionalization and of promoting organizational learning.

Hence, the ideology underlying the development of international accounting system established by the Ipsas can be understood in terms of a neutral and uniform set of standards based on the accounting theories the accounting profession has developed in the Anglo-Saxon tradition, and can be universally applied in any countries around the world. However, as Antipova and Bourmistrov (2013, p.445) affirm, public sector accounting in developing countries with economies in transition have unique historical roots.

Hence, the “epistemic community” is responsible for stimulating the exploration of old certainties found in tradition, as well as the exploration, through experiments, with new solutions based on new ideas. This model is more applied to provide an understanding of the reform Brazilian public sector accounting requires. In Brazil, as observed based on the above context, the “epistemic community” is represented by GTCON.

According to Bozkurt, Islamoğlu and Öz (2013), the conception and implementation of an accounting model applied to the Brazilian public sector would depend on how this process takes place. Hence, the advantages of its actual application can depend on the view and expectation expressed in the technical members' perception, which will indicate what routes to follow.

The model by Bozkurt, Islamoğlu and Öz (2013) is as follows:



**Figure 1.** Theoretical research model.

Source: adapted from Bozkurt *et al.* (2013)

Based on the proposed model, the advantages in the implementation of the Ipsas depend on the expectations expressed in the GTCON members' perception regarding the perception, interpretation, cost-benefit and educational responsibility in the implementation of the Ipsas in Brazilian public accounting, which will indicate what routes to follow.

The construct regarding the *perception of the standards* is linked to the conscientious judgment of how GTCON qualifies the Ipsas according to their utility, as the entity is responsible for analyzing and elaborating diagnoses and studies for the minimal standardization of concepts and accounting practices related to these standards. Hence, the clearer understanding of the Ipsas regarding their utility for public management, with respect to the future improvement of accounting information, converges to the increase of the advantages their implementation is expected to offer.

As to the construct *interpretation and application of the standards*, Rosa (2014) highlights that the correct interpretation of the standards is fundamental, in view of the lack of an interpretation that is certain about the content, highlighting that GTCON is technical and consultative and manifests itself through recommendations, in view of the reduction of divergences. In that sense, Joshi, Bremser and Al-Ajmi (2008) highlight that "a single set of standards will not result in substantial increases in uniformity, unless there is a common understanding". Hence, the expansion of knowledge through the interpretation and application of the Ipsas, in view of the understanding that they are based on principles and need a common interpretation, preferably based on a partnership with all institutions involved in this convergence process, increase the advantages in its implementation.

As to the weighing of the *cost-benefit of the implementation* of the Ipsas, it should be highlighted that one of the objectives of GTCON is the rationalization of costs in the entities of the Federation and social control. According to Padoveze (2000), the concept of information value is related to the cost-benefit relation produced, so that, to measure its value, information needs to be available, which reduces the uncertainty.

Hence, for the information to be considered useful and relevant, the individual needs to understand that the expected benefits surpass the costs. In this horizon, the theoretical construct sustains that the understanding that the expected benefits are higher than the costs to implement the Ipsas increase the advantages of their application, which contributes to the creation of value, adding the benefits and permitting international cooperation.

Another theoretical construct that depends on the view and expectation expressed in the GTCON members' perception is related with *educational responsibility*, that is, who is responsible for training and for applying the Ipsas. In their research, Padrones, Colares and Santos (2014), who investigated the implementation level of the Ipsas, affirm that the educational responsibility for this implementation is the accounting regulator in the country, and that the main factors hampering their implementation refer to the lack of orientation and training.

In a similar research published in the studies by PwC (2013), this problem is also appointed as one of the main difficulties in the implementation process of these standards. Thus, the GTCON members' perception about the educational responsibility can indicate the technical routes that are to be followed to obtain advantages in the implementation of the Ipsas.

As presented in the theoretical model, all constructs converge to the actual achievement of advantages in the implementation of the Ipsas, considering that these can lead to better controls, greater comparability of the statements, reduction of possible frauds and increased credibility of the information. (PwC, 2103, Padrones, Colares & Santos, 2014).

Hence, in view of this theoretical context, four hypotheses were defined, with a view to guiding the answers to the proposed research. The hypotheses were tested based on the questionnaire developed and adapted based on Joshi, Bremser and Al-Ajmi (2008) and Bozkurt, Islamoğlu and Öz (2013). These are:

- H1: Perception of the standards:** the clearer understanding of the Ipsas leads to a more effective implementation.
- H2: Interpretation of the standards:** the expansion of knowledge through the interpretation and application of concepts to a specific problem increases the expected advantages resulting from the application of the Ipsas.
- H3: Cost-benefit of the implementation:** the weighing of the expected benefits surpasses the costs of implementing the Ipsas.
- H4: Educational responsibility:** the shared understanding between the accounting institutions and professionals in the educational development of the Ipsas increases the desired advantages resulting from their implementation.

Hence, based on the studies by Joshi, Bremser and Al-Ajmi (2008) and Bozkurt, Islamoğlu and Öz (2013), the implementation depends on how to understand, interpret, analyze the costs-benefits and how the educational responsibility will be processed. Thus, according to the fundamental literature in this research, it is expected that the perception of the stakeholders in the technical process of implementing the Ipsas is directly related with the four constructs, perception, interpretation, costs-benefits and educational responsibility.

### 3. Method

#### 3.1 Sample and data collection instrument

Given the characteristics of this study, this research was based on the classical analytical procedure of searching for results, deriving, according to Beuren (2012), from the three categories of research: as for the aims, we chose an exploratory and descriptive research; as for the procedures, we chose a bibliographic research and survey; and, as to the approach of the problem, we chose the quantitative approach.

The universe used in this study corresponded to the GTCON members, both as a member, such as the guests, involving accountants, auditors, advisors and other accounting professionals, totaling 400 individuals. The sample consisted of 108 respondents, totaling a percentage of 27% of the defined population.

Data were collected by sending an electronic questionnaire by e-mail to the professionals working in the Technical Group for the Standardization of Accounting Procedures (GTCON), with different areas of expertise, but similar functions, e.g. accountant, auditor and tax auditor, advisor and analyst in various areas. The questionnaire was developed from previous research, thus increasing the reliability of the results and uniformity of the objective addressed in this research. Most of the proposed questions are based on the questionnaire prepared and used by Joshi, Bremser and Al-Ajmi (2008) and Bozkurt, Islamoğlu and Öz (2013).

The questionnaire is divided into six blocks. The first was aimed at the identification of the respondents, so it addressed exploratory information from the respondents' profile, such as gender, academic degree, time and area of expertise. The second block addresses the respondents' perception in relation to Ipsas and its applicability, which was structured so as to extract information to test the first study hypothesis. The third refers to issues related to the dependent variable of the model, in which questions were asked about the main advantages the implementation of Ipsas will offer. The fourth deals with the costs and benefits of implementing the Ipsas. This block permitted the evaluation of the third research hypothesis. The fifth aimed to capture information for the second hypothesis test and, thus, focused on the respondents' view concerning the interpretation and application of the Ipsas. The sixth and final block aimed to extract information to test hypothesis 4, focusing on the opinion of the respondents about who should be made responsible for educating accountants and auditors for the implementation of Ipsas.

It is highlighted that, as from the second block, an approximation of a decimal scale was used in the statements of the questionnaire, which ranged 1-10, and the scores ranged from "I totally disagree" (1) to "I totally agree" (10).



### 3.2 Statistical procedures

Initially, to validate the survey instrument, we used the model defined by Cronbach (1951). This model aims to estimate a coefficient called Cronbach's alpha, which is a determining factor for its adoption as a tool to estimate the reliability, as it measures the correlation between responses in a questionnaire through the profile analysis of the answers given. This is an average correlation among questions. Since all items in a questionnaire use the same measuring scale, the coefficient  $\alpha$  is dimensionless and its value fluctuates between 0 and 1, noting that values beyond this range should be considered as untrustworthy scales. Next, an exploratory analysis with the description of data collected in the questionnaires was carried out in order to provide a better understanding of the issues addressed in each construct of the model.

As each construct in the research model consists of multiple questions, it was decided to reduce their dimensionality by means of Principal Component Analysis (PCA). According to Lattin, Carroll and Green (2011), PCA is a method for the restatement of multivariate data. It allows the researcher to reorient the data so that the first few dimensions explain the widest possible range of information available. Thus, the insight of using PCA is the reduction of variables for further use in the multiple regression model. That model will permit testing the research hypotheses.

Thus, based on the dimensions defined in the theoretical model, the empirical construct uses the following grouped main components: implementation of advantages; perception of standards; educational responsibility; cost-effectiveness of implementation; and interpretation of the standards.

Finally, in order to test the research hypotheses, the multiple linear regression technique was used, based on the main components of each construct. The estimated model is described in Equation 1.

$$Vant_i = \alpha + \beta_1 Perc_i + \beta_2 Cust_i + \beta_3 Inter_i + \beta_4 Resp_i + \varepsilon \quad (1)$$

Where,

$Vant_i$  = advantages of the implementation, extracted from the third block of the questionnaire;

$Perc_i$  = perception of the standards, extracted from the second block of the questionnaire;

$Cust_i$  = cost-benefit of the implementation, extracted from the fourth block of the questionnaire;

$Inter_i$  = interpretation of the standards, extracted from the fifth block of the questionnaire;

$Resp_i$  = educational responsibility, extracted from the sixth block of the questionnaire;

$\varepsilon_i$  = error term of the regression.

The model presented in Equation 1 is intended to test whether the main advantages the implementation of the Ipsas will bring, expressed by the GTCON members, can be explained by their perception of the Ipsas and their applicability (Perc), cost-benefit of the implementation of Ipsas (CB), interpretation of Ipsas (Inter) and the educational responsibility of accountants and auditors for the application of Ipsas. The hypotheses were tested based on the significance of the independent variables in this empirical model, through t statistics. Thus, the first hypothesis was tested by the significance of the Perc variable, the second hypothesis was tested by the significance of the Inter variable, the third hypothesis was tested by the CB variable and the fourth hypothesis was tested by the Res variable.

As the explanatory variables in the model do not represent all the factors that can explain the advantages of the implementation of Ipsas, because they cannot be measured, it is possible that some variable (or factor) omitted can be correlated with some explanatory variable, a fact that causes endogeneity problems. Moreover, the correlation of simultaneity between dependent and independent variables can also lead to endogeneity problems, which consequently leads to inconsistent parameters. However, the goal of this model is only to analyze the relationship between the variables of interest, that is, without the goal of making predictions, this potential problem can be relaxed in the circumstances of this study (Wooldridge, 2010).

## 4. Results

### 4.1 Characteristics of study participants and reliability of the research tool

The answers to the demographic research questions and percentages are shown in Table 1. The first question asked about the participants' sex. A significant part of the professionals who answered the questionnaire are men (66.4%), indicating that the profession is predominantly male. Next, a question was asked about the highest level of academic degrees and many, 71%, hold graduate degrees. When looking at the length of experience in the profession, most have more than ten years working in the profession, i.e. 57.9% of the subjects, and 41% have more than 15 years of experience. The stakeholders were asked for information on the academic background, as shown in Table 1. The distribution of the responses indicates that a significant proportion of respondents consists of accountants, corresponding to 55%, while 28% are auditors.

Table 1

#### Characteristics of respondents

Characteristics of respondents	Respondents = 107	Percentages
<b>Gender of professionals</b>		
Total = 107		
Male	71	66.4
Female	36	33.6
<b>Academic Degree of Respondents</b>		
Total = 107		
Undergraduate	28	26.2
Specialization	64	59.8
Master's	12	11.2
Others	3	2.8
<b>Length of Experience</b>		
Total = 107		
Less than 5 years	20	18.7
5 - 10 years	25	23.4
11 - 15 years	18	16.8
More than 15 years	44	41.1
<b>Professional Activity Area</b>		
Total = 107		
Accountant	55	51.5
Auditor	30	28.0
Advisor	4	3.7
Other	18	16.8

Source: elaborated by the authors (2014).

To evaluate the reliability of the questionnaire, Cronbach's alpha was used. The coefficient was calculated taking into consideration all the research questions on the respondents' perception of the acceptance and adaptation of the Ipsas, i.e. 18 questions.

Table 2 shows the result of the estimated coefficient. Note that all observations were valid (valid cases = 107) and Cronbach's alpha coefficient was 0.785. The minimum coefficient acceptable in the literature is 0.7 (Leontitsis & Page, 2007), so the result suggests evidences of reliability in the research instrument used in this study.

Table 2

**Analysis of Reliability of the Questionnaire through Cronbach's Alpha**

		N	%
Cases	Valid	107	100.0
	Excluded	0	0
	Total	107	100.0
Cronbach's Alpha		No. of items	
0.785		18	

Source: elaborated by the authors (2014).

## 4.2. Analysis of result of research tool

### 4.2.1 Descriptive analysis

Regarding the analysis of the perception of GTCON on the implementation of Ipsas, it became clear that the GTCON considers that these rules will be of great use for public sector accounting, given that, in general, 84% of the research participants were positive about the use of Ipsas. These findings reinforce the results obtained by Joshi, Bremser and Al-Ajmi (2008) and Bozkurt, Islamoğlu and Öz (2013), since, in their research, the respondents showed they were optimistic about the implementation of the international standards and their advantages.

The questions with higher agreement levels among those surveyed were P1.2 and P1.4, as about 94% of subjects agreed with the statements proposed, revealing that, for most respondents, the implementation of Ipsas will solve serious problems in public sector accounting, providing an improved quality of accounting information, as shown in Table 3.

Table 3

**Perception of Ipsas**

Assertions	Level of Agreement – GC (%)										
	1	2	3	4	5	6	7	8	9	10	GC*
P1.1 The applications of the Ipsas will be useful to public management	-	-	-	1	5	2	17	22	16	37	94
P1.2 The implementation of the Ipsas will solve severe public sector accounting problems	-	3	5	1	14	11	15	21	9	21	78
P1.3 Ipsas is an unreachable target	2	2	7	7	12	14	9	15	8	23	70
P1.4 Ipsas will improve the quality of public accounting information	-	-	-	-	6	6	4	29	20	36	94
<b>Mean</b>	<b>0</b>	<b>1</b>	<b>3</b>	<b>2</b>	<b>9</b>	<b>8</b>	<b>11</b>	<b>22</b>	<b>13</b>	<b>30</b>	<b>84</b>

\* Level of agreement calculated based on scale scores higher than 5.

Source: elaborated by the authors (2014).

Table 4 shows the GTCON's perception on the advantages in the implementation of the Ipsas. In general, the respondents were optimistic about gaining advantages from the implementation of the Ipsas. According to 96% of the respondents, the Ipsas will certainly turn the financial statements more comparable around the world (P2.1) and, for 94% of the GTCON members, the Ipsas will contribute to the increased transparency and reliability of the financial statements (P2.2). When asked about whether the costs will significantly drop over time (P2.3), 79% of the respondents agreed with the statement.

When asked whether the Ipsas could lead to a reduction in illegal activities, mainly frauds (P2.4), the agreement was lower, as only 68% of the respondents agreed, that is, about 34% of the respondents are not convinced that the standards can contribute to minimize the illegalities and fraudulent practices. What was noteworthy in the data was that the auditors believe more in the reduction of illegal activities, especially frauds. That is, 73% of the auditors agreed with the statement, while 50% of the accountants do not.

Table 4

**Main Advantages of Ipsas Implementation**

Assertions		Level of Agreement – GC (%)										
		1	2	3	4	5	6	7	8	9	10	GC*
P2.1	The Ipsas make the financial statements more comparable around the world	0	0	0	1	3	6	6	19	24	42	96
P2.2	The Ipsas will contribute to improve the transparency and reliability of the financial statements	0	0	0	1	5	2	10	28	22	32	94
P2.3	The application costs of the Ipsas will significantly drop over time	0	4	1	3	14	7	14	24	16	17	79
P2.4	The application of the Ipsas can lead to a reduction of illegal activities, especially frauds	5	1	5	10	11	14	11	20	12	11	68
<b>Mean</b>		<b>1</b>	<b>1</b>	<b>1</b>	<b>4</b>	<b>8</b>	<b>7</b>	<b>10</b>	<b>23</b>	<b>19</b>	<b>25</b>	<b>84</b>

\* Level of agreement was calculated using scale scores higher than 5.

Source: elaborated by the authors (2014).

Table 5 shows the perception of GTCON on the costs and benefits in the implementation of Ipsas. Most (92%) agree that the implementation of Ipsas will benefit the preparation and use of the financial statements, so that there is a good inter-cooperation on an international scale. Research has shown that, for 81% of the respondents, the cost of implementing the Ipsas will only be the necessary step to achieve advances in the public system and in the end product (P3.2). When asked about the need to do a cost-benefit ratio, 77% of respondents agreed with the statement, therefore assuming that, for some, the cost should be analyzed so that the benefits can overcome them. This finding differs from results obtained by Bozkurt, Islamoğlu and Öz (2013) because, as identified, respondents believe that the benefits will not outweigh the costs.

Table 5

**Costs and Benefits of Implementation of Ipsas**

Assertions	Level of Agreement – GC (%)										GC*
	1	2	3	4	5	6	7	8	9	10	
P3.1 The application of the Ipsas will increase the benefits of their use, mainly permitting the cooperation on an international scale	0	0	1	2	6	8	18	28	14	23	92
P3.2 The Ipsas will offer more benefits than the expected costs of their implementation	0	1	2	3	13	10	14	25	11	21	81
P3.3 A cost-benefit analysis needs to be executed	7	1	3	1	12	7	12	17	13	27	77
<b>Mean</b>	<b>2</b>	<b>1</b>	<b>2</b>	<b>2</b>	<b>10</b>	<b>9</b>	<b>15</b>	<b>23</b>	<b>13</b>	<b>24</b>	<b>83</b>

\* Level of agreement was calculated using scale scores higher than 5.

Source: elaborated by the authors (2014).

Table 6 shows the perception of GTCON on the importance of interpretation and application of IPSAS. At this point, respondents were more positive, i.e. about 91% of respondents are in favor of the points scored in this group of issues. For 91% of the respondents, IPSAS are prepared in accordance with some principles (P4.1). Since, for the sake of a better understanding, 85% said that the interpretation process should be conducted by standard-setting bodies, IFAC this case, in order to obtain a more accurate interpretation of its initial purpose. It was also evidenced, by 95% of the accounting professionals, (P4.3), that joint action is needed among the institutions involved in the convergence process, so that there is a common understanding of the international accounting standards.

Table 6

**Interpretation and Application of Ipsas**

Assertions	Level of Agreement – GC (%)										GC*
	1	2	3	4	5	6	7	8	9	10	
P4.1 I believe that the Ipsas standards are prepared according to certain principles	0	1	2	2	5	4	7	22	21	36	91
P4.2 To establish a shared interpretation of the Ipsas, the international standardizers (like Ifac) should conduct the interpretation process	3	1	0	2	8	7	9	19	13	37	86
P4.3 A shared interpretation of the Ipsas needs to be established, on a local base, with the partnership of all institutions involved in the convergence process	0	0	1	0	4	6	3	9	24	53	95
<b>Mean</b>	<b>1</b>	<b>1</b>	<b>1</b>	<b>1</b>	<b>6</b>	<b>6</b>	<b>6</b>	<b>17</b>	<b>20</b>	<b>42</b>	<b>91</b>

\* Level of agreement was calculated using scale scores higher than 5.

Source: elaborated by the authors (2014).

With the questions shown in Table 7, the intention was to verify among the respondents whose would be the responsibility to transmit knowledge about the implementation of Ipsas. Among those mentioned, the following were responsible: University (P5.1.), Class council (P5.2), professional's effort (P5.3) and the Government (P5.4). The results revealed that both universities, class councils and the Government would be the three institutions that have the best conditions to conduct the educational process for the implementation of Ipsas. However, according to 33% of the respondents, training in the implementation process should not be achieved



through self-made professionals (P5.3). At this point, there is a positive relationship between the results obtained and the literature presented, especially the research conducted by Joshi, Bremser and Al-Ajmi (2008) and Bozkurt, Islamoğlu and Öz (2013), in which the respondents believe a joint effort is needed between educational institutions, government and professionals, so that the standards will provide the expected benefits.

Table 7

**Educational responsibility of accountants and auditors for application of Ipsas**

Assertions	Level of Agreement - GC (%)										
	1	2	3	4	5	6	7	8	9	10	GC*
P5.1 The universities should provide the training for the application of the Ipsas	1	2	3	4	7	10	14	14	13	32	83
P5.2 The training to apply the Ipsas should be provided by the class council	4	0	4	2	7	8	12	11	16	36	84
P5.3 The training to apply the Ipsas should be achieved through self-made professionals	11	5	2	0	15	10	10	15	2	30	67
P5.4 The government should be responsible for the training to apply the Ipsas	4	2	2	1	7	8	14	17	13	33	85
<b>Mean</b>	<b>5</b>	<b>2</b>	<b>3</b>	<b>2</b>	<b>9</b>	<b>9</b>	<b>13</b>	<b>14</b>	<b>11</b>	<b>33</b>	<b>80</b>

\* Level of agreement was calculated using scale scores higher than 5.

Source: elaborated by the authors (2014).

### 4.3 Reduction of dimensionality of variables using PCA

This research addresses four constructs related to the advantages of implementing the Ipsas. However, each construct has at least three variables. In order to reduce the dimensionality of these variables and create factors for each construct, the Principal Component Analysis (PCA) was used.

For a good fit of the PCA, it is necessary to test whether the variables are highly correlated. For this, we used the Bartlett and Kaiser-Meyer-Olkin test. The results are disclosed in Table 8. The probabilities of the tests involve the non-rejection of the hypothesis of a strong correlation among the variables of each construct, resulting in the adaptation of data for the use of the PCA.

Table 8

**Correlation Tests among the Questions in the Constructs**

Construct	P-value of Bartlett's Test	P-value of the Kaiser - Meyer - Olkin test
Advantages	0.000	0.627
Perception	0.000	0.684
Cost-Benefit	0.000	0.491
Interpretation	0.000	0.675
Responsibility	0.000	0.557

Source: elaborated by the authors (2014).

To select the amount of main components per construct, the Kaiser criterion was used, which consists in retaining the component with eigenvalue higher than 1. Table 9 shows the eigenvalues, the proportion of variance explained by each component and the cumulative proportion. Only component 1 (Com 1) of the construct “Benefits” had eigenvalue higher than one, explaining 52% of the variance of all questions. This indicates, based on the Kaiser rule, that the construct “Advantage” received only one main component.

A similar analysis can be done for the other constructs, that is, the constructs “Perception”, “Cost-Benefit” and “interpretation” got only one component with eigenvalue higher than 1, therefore a main component. Only the construct of “Responsibility” obtained two principal components with eigenvalues higher than one, and therefore had two principal components.

Table 9

**Principal Components of Research Constructs**

Variables	Components	Eigenvalue	Proportion	Accumulated
Advantages	Com 1	2.080	0.520	0.520
	Com 2	0.852	0.213	0.733
	Com 3	0.750	0.188	0.921
	Com 4	0.318	0.079	1.000
Perception	Com 1	2.284	0.571	0.571
	Com 2	0.851	0.213	0.784
	Com 3	0.604	0.151	0.935
	Com 4	0.261	0.065	1.000
Cost-Benefit	Com 1	1.589	0.529	0.529
	Com 2	0.998	0.333	0.862
	Com 3	0.413	0.137	1.000
Interpretation	Com 1	1.891	0.630	0.630
	Com 2	0.579	0.193	0.823
	Com 3	0.529	0.176	1.000
Responsibility	Com 1	1.749	0.437	0.437
	Com 2	1.065	0.266	0.704
	Com 3	0.695	0.173	0.877
	Com 4	0.49	0.122	1.000

Source: elaborated by the authors (2014).

#### 4.4 Results of regression model and hypothesis test

Before performing the linear regression for the predefined empirical model, the correlation among the variables in the model was analyzed, represented by the principal components of each construct, with a view to previously identifying possible trends of the model to be able to verify the research findings.

Table 10

**Correlation Matrix**

	Vant	Perc	Cust	Inter	Resp_1	Resp_2
Vant	1					
Perc	.767**	1				
Cust	.616**	.529**	1			
Inter	.535**	.527**	.395**	1		
Resp_1	.304**	.263**	.133	.362**	1	
Resp_2	.153	.063	.246*	.120	.000	1

\*\* Correlation significant at 1%.

\* Correlation significant at 5%.

Obs: Vant: Principal component of construct "Benefits"; Perc: Principal component of construct "Perception"; Cust: Principal component of construct "Cost-Benefit"; Inter: Principal component of construct "Interpretation"; Resp1: First principal component of construct "Educational responsibility"; Resp2: Second principal component of construct "Educational responsibility".

Source: elaborated by the authors (2014).

Hence, based on what can be observed in the model, only one of the variables (resp\_2), responsibility for continuing education for accounting professionals, was not significant at 1% and 5%.

To test the hypotheses, linear regression was used, but not with data collected directly in the questionnaire, but those with the values that were calculated in the PCA. Regression parameters are displayed in Table 11:

Table 11

**Results of Regression**

Panel A				
Explanatory Variables	Coefficient	Standard error <sup>1</sup>	t-statistics	p-value
C	0.000	0.057	0.000	1.000
Perc	0.545	0.101	5.420	<b>0.000***</b>
Inter	0.108	0.074	1.460	0.148
Cust	0.263	0.085	3.060	<b>0.003 ***</b>
Resp1	0.086	0.047	1.810	<b>0.073 **</b>
Resp2	0.041	0.069	0.590	0.557

Panel B			
Description	Value	Description	Value
R <sup>2</sup>	0.670	F Test (Statistics)	48,700
Adjusted R <sup>2</sup>	0.654	F Test (p-value)	0.000
Jarque-Bera (statistics)	8.107		
Jarque-Bera (p-value)	0.017	Number of Observations	107

<sup>1</sup> Standard errors robust to heteroscedasticity. VIF statistics: Perc = 1.70; Inter = 1.55; Cust = 1.52; Resp1 = 1.17; Resp2 = 1.08, suggest absence of multicollinearity.

\*\*\* Significant at 1%; \*\* Significant at 10%.

Source: elaborated by the authors (2014).

As can be seen in Table 11, the dependent variable, *benefit in the application of Ipsas (vant)* was regressed with the independent variables (*Perception of Standards, Educational Responsibility, Cost-Benefit of Implementation, Interpretation of the Standards*). The results show that the variables *Perceptions of Standards, Cost-Benefit of Implementation and Educational Responsibility* had significant estimators with the expected signal.

These results indicated that H1, H3 and H4 were established as significant. When observing the estimators of the model, we can see that the main positive contribution was the variable *perception of the standards*, which showed the estimator with a magnitude of 0.511 and significant at 1%. Hence, it was concluded that, for the members of GTCON, the clear perception of Ipsas contributes to obtain benefits in its application, representing an essential tool for public management and thus improving the accounting information to make more correct decisions.

It was also verified, according to the findings, that the perceived *costs-benefits and educational responsibility* of accounting professionals were significant, contributing to the creation of value and the achievement of advantages in the implementation of Ipsas.

With regard to the interpretation, performed according to the regression analysis of variables related to H2 (*interpretation of the standards*), it became clear in the results that the GTCON members do not perceive this variable as a benefit in the implementation of IPSAS, thus rejecting the hypothesis.

Finally, while the hypothesis (H2) Interpretation of the Standards does not offer the members of GTCON expected benefits from the application of Ipsas, the hypotheses (H1, H3 and H4) *Perception of Standards, Educational Responsibility and Cost-Benefit of Implementation* offer advantages for collaborative work and a shared understanding on the implementation of Ipsas (Table 12).

Table 12

**Hypothesis test**

Hypotheses	B	p-value	Evaluation
<b>H1: Perception of the standards:</b> the clearer understanding of the Ipsas leads to a more effective implementation.	0.545	0.000	<b>Not rejected</b>
<b>H2: Interpretation of the standards:</b> the expansion of knowledge through the interpretation and application of concepts to a specific problem increases the expected advantages resulting from the application of the Ipsas.	0.108	0.148	Rejected
<b>H3: Cost-benefit of the implementation:</b> the weighing of the expected benefits surpasses the costs of implementing the Ipsas.	0.263	0.003	<b>Not rejected</b>
<b>H4: Educational responsibility:</b> the shared understanding between the accounting institutions and professionals in the educational development of the Ipsas increases the desired advantages resulting from their implementation.	0.086	0.073	<b>Not rejected</b>

Source: elaborated by the authors (2014).

## 5. Final Considerations

This research aimed to identify the perception of the professionals who are part of the Technical Group for the Standardization of Accounting Procedures (GTCON), who are responsible for the technical discussion about the benefits of the implementation of the standards established in Ipsas for public entities in Brazil. Accordingly, a questionnaire was used whose queries were prepared based on five theoretical perspectives, in an empirical model where there are four groups called dependent variables and one group of independent variables.

The heuristics is that the benefits of the effective implementation of Ipsas depend on how members of GTCON perceive the accounting standards (Ipsas and NBCT / CFC), who will be responsible for the educational training of accounting professionals, view on the cost-benefit the new rules will bring and who will be responsible for the interpretation of the accounting standards.

The results revealed that the members' view on Ipsas is purposeful in their use. Members of GTCON believe that the implementation and application of Ipsas will be useful for public management, as they will solve serious problems in this area by providing advantages, among which the following can be mentioned: greater comparability of the statements, reduction of possible fraud and increased credibility

of information, providing a better decision-making by the public administration. A material fact in this construct (*perception of the standards*) is that the research participants agree that the implementation of Ipsas is a feasible target. It is highlighted that this variable has a significant correlation with the benefits of the implementation.

The *cost-benefit analysis of the implementation* was significant to gain advantages in the application of Ipsas, i.e. according to GTCON, the implementation of Ipsas will bring better results than the investments made, particularly to ensure uniform accounting records and consistency in the reports obtained based on these records, which will be available by understanding the application of these standards.

Another important result of this analysis refers to who should be responsible for the training and application of IPSAS (*educational responsibility*), which, according to GTCON, should be the state's responsibility. In addition, the result obtained from other questions is that there are expectations that the universities are responsible for the training and application of Ipsas. Another interesting point in the analysis of this construct was the fact that the respondents did not agree that the training and application of the Ipsas should be guaranteed by personal efforts, but rather by the government, i.e. the more the public sector is responsible for the training of standards, the greater the advantages obtained, with this component being directly related to the advantages in the implementation of IPSAS.

Finally, the component of the construct *interpretation of the standards*, according to GTCON, was not significant to obtain advantages in the implementation and application of Ipsas. The initial expectation, translated into the research hypothesis, was that there was a significant and direct relationship between the construct and obtaining benefits, considering that, to ensure a shared interpretation of Ipsas, international regulators like Ifac and GASB should play a regulatory role. At the national level, institutions like CFC, STN and TCs should act as partners for these studies. Despite these theoretical appeals, in practice, the members of GTCON had a different understanding, as the hypothesis was rejected, i.e. the way how to interpret the rules is not a preponderant factor for the benefits of implementing the Ipsas.

This finding differs from the results by Joshi, Bremser and Al-Ajmi (2008) and Bozkurt, Islamoğlu and Öz (2013) as, in their studies, the respondents signaled that the shared interpretation of the standards is an essential factor for their implementation to offer advantages.

In view of the above and the results found and analyzed, according to the GTCON, the implementation of the Ipsas is positive and offers advantages for the registering and disclosing of economic, financial and budgetary information. It was also verified that Brazil is adapting to and accepting the new changes that are to be implemented in the public system. Nevertheless, the updating of its concepts and the confrontation of new challenges for the new phase of Public Accounting still meet with resistance.

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