

Mis(comprehension) of the financial statements of brazilian municipalities by external users

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Abstract

Objective: The study analyzes the variables associated with the comprehensibility of public sector financial statements from the perception of external users of the information. To investigate the readability and comprehensibility of the financial statements applied to the public sector from the understanding of external users.

Method: Based on previous research, the variables associated with readability and understandability were selected and an electronic questionnaire was developed to observe them. A total of 415 valid responses were obtained from a sample of Brazilian citizens. The analysis was performed qualitatively and quantitatively by testing the relationships between the variables, especially confirmatory analysis.

Results: Results revealed statistically significant relationships between the understandability of the statements and the variables: educational level, academic education, occupation, and self-assessment in knowledge about public sector accounting. Relationship was also found between the readability, measured by the Flesch test, the respondent's level of education and the understandability of the information, corroborating the literature on this subject, although previous studies were mostly focused on the reports of private sector entities.

Contributions: The study demonstrates the need to improve the quality of accounting reports in the public sector, reducing the gap in the national and international literature on the subject and presents as main contributions: (i) for future research offers an instrument for data collection (questionnaire) unprecedented, based on solid theoretical framework and validated by a large sample; (ii) unpublished findings on variables related to readability and understandability not yet covered in other research for the public sector; (iii) evidence that provokes further discussion with the public authorities and the community on the need to improve the way public sector information is disseminating and communicating, as well as identifying ways to do so.

Keywords: Information; Understandability; Readability; Accounting Statements; Public sector.

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Introduction

The study of transparency has attracted considerable attention in almost all areas of administrative knowledge. Whether in politics, even in business, public affairs and legal matters, transparency is important. Accessible information is the main foundation of democracies and solid markets, as transparency dissipates opacity, the first refuge of corruption, inefficiency and incompetence (Michener & Bersch, 2011).

In the public sector, the disclosure of information is an object for social control, with accounting applied to this sector providing quality support for the instrumentalization of society, by providing understandable and meaningful information to citizens (Augustinho & Oliveira, 2014). In this scope, the State must guarantee broad access to information, ensuring that accounting fulfills its objective of generating information that is useful and understandable to the greatest number of users (Ijiri, 1975; Riahi-Belkaoui, 1995).

It should be noted, however, that the quality of transparency does not depend only on how the information is made available, but on how well it lends itself to accurate inference (Michener & Bersch, 2011), since information is not always the answer, which can often be part of the problem (Eppler, 2006).

Thus, for effective communication of information to occur, there must be a common meaning between sender and recipient, so that the latter is able to understand it, making it possible to identify the elements of communication theory in the communication process of accounting information, which provides subsidies to understand this process (Dias Filho & Nakagawa, 2001; Shannon, 1948).

As citizens are the primary users of public sector financial reports, they are expected to be presented in a simple, clear and succinct language, so that they are understandable. In this sense, the comprehensibility of reports is clearly related to the repertoire and needs of users (Resolution CFC, 2016; IPSASB, 2010).

However, the usefulness of the information depends in part on its readability, as well as on the users' ability to understand it (Smith & Taffler, 1992). Thus, the concern about this theme, in measuring the readability and comprehensibility of texts in accounting, has been around for a long time, both in research that addresses readability (e.g. Barnett & Leoffler 1979; Jones & Shoemaker, 1994; Li, 2008; Marsh & Montondon, 2005; Peleias, 2017; Rodrigues & Silva, 2015; Silva & Fernandes, 2009) and in

research that focuses on understandability (e.g. Adelberg, 1979; Cotrim, 2012; Jones & Smith, 2014; Smith & Taffler, 1992; Stead, 1977).

In this sense, when deepening the analysis in the field of communication theory, specifically in the literature on comprehensibility, readability and quality of information, it was asked: what are the variables associated with the readability and comprehensibility of financial statements applied to the public sector from the understanding of information users? Thus, this article discusses the variables associated with the legibility and comprehensibility of public sector financial statements from the understanding of their external users.

It is noteworthy that the gaps observed in the literature regarding the use of readability metrics and elements that facilitate writing in simple language as a way of improving the quality of public sector financial reports is a finding in the academic field, given the need of production and dissemination of useful and understandable information, especially in dealing with public affairs.

Next, the literature review and the research assumptions are presented. Then, the methodological procedures are approached, followed by the description and analysis of the results and, finally, the final considerations.

2. Theoretical Reference

2.1. Accounting and the public sector: implications of language in information

Accounting applied to the public sector is currently undergoing major transformations, resulting from the process of convergence to international standards. This is expected to improve the quality of information, improve the decision-making process, reduce corruption and expand social control (Ijeoma, 2014; Leandro, Pérez & Hernandes, 2016; IPSAS, 2017).

The control of legality, of the actions carried out by the public sector and of the resources used to fund these actions is done through the rendering of accounts of public agents, which materializes with the disclosure of the financial statements, which is the accounting communication process (Augustinho & Oliveira, 2014).

Accounting is the language of business and, above all, a communication tool. However, accounting needs to

reach adequate levels of readability and understanding to ensure the effectiveness of accounting communications (Riahi-Belkaoui, 1995), and if they do not reach their recipients in a timely and understandable way, they will not have the desired effect (Riahi-Belkaoui, 1995). Dias Filho, 2013).

From the Communication Theory (Shannon, 1948), it is possible to draw a comparison between the elements proposed in it with an accounting system, in which: the source of information is a result of economic events; the role of the transmitter is played by the accountant, who observes the events and encodes them to transmit the information through the disclosure of accounting reports; and the channel is the means by which information will be transmitted from the transmitter to the receiver, which is any user of accounting information, who receives, decodes and interprets it for decision making, which is the final destination of the information (Dias Filho & Nakagawa, 2001).

Marteleto (1987) states that the approach born in Shannon's mathematical theory of information is a rigorous and mechanical system where the importance is centered on the channel and its ability to transmit information. Although it cannot explain the psychological, psychosocial and sociological dimensions of information, the theory has been widely used in the social sciences, which justifies its relevance and use in the context of this research.

In this sense, communication theory provides a methodology to improve accounting disclosure, given the similarities between the general communication process and the accounting process (Dias Filho, 2013). Thus, "the source of information must seek to recognize the needs of each stratum of the user and assess their ability to interpret the information properly" (Dias Filho & Nakagawa, 2012, p. 10).

Lesca and Lesca (1995) discuss that as an assumption for comprehensibility, the quality of information is related to the effectiveness of the information, which is determined by the difference between the information required by users and the information actually obtained by them. Also relating to certain characteristics of information, such as format, content, cost, time, value and utility (Eppler, 2006). Thus, the concept of information quality is relative depending on the different perceptions and needs of users (Parker, Moleshe, Harpe & Wills, 2006).

Comprehensibility is the quality of information that

allows users to assimilate its meaning, and, for that, the information must be presented in a way that corresponds to their needs and knowledge base (Resolução CFC, 2016). Although the presentation of information in a clear and concise way helps users to understand it, the actual understanding will largely depend on the characteristics of these users (IPSASB, 2010).

In the public sector, financial statements must be prepared and disclosed in order to meet the informational needs of users of public services and providers of their resources (Resolução CFC, 2016). However, the first step towards understanding information is its disclosure, which takes place through transparency, based on the notion of openness and communication, as opposed to secrecy and concealment (Barth & Schipper, 2008). Transparency is a word that defines everything that is open, trustworthy, participatory and accountable (Michener & Bersch, 2011).

In Brazil, the right to transparency in public acts is guaranteed in the Federal Constitution (1988), which states that everyone has the right to receive information from public bodies. Since then, disclosure has been expanded and the country took the most important step in consolidating its democracy with the approval of Law no. 12,527 (2011), the law on access to information, expanding the means of access to citizens and strengthening the control instruments of public management.

The main objective of the regulations is to implement a culture of access in the country, in which the Public Administration must be aware that public information is a citizen's right and belongs to him, and it is up to the State to provide it in a timely and understandable way. This has also been made possible through e-gov systems, a fundamental information and communication tool for the improvement of public services and for the effectiveness of public policies, facilitating citizens' access to information on public management (e.g. Augustinho & Oliveira, 2014; Avelino, Cunha, Lima & Colauto, 2014; Maia, 2014; Pina, Torres & Royo, 2007).

Thus, given the need to provide intelligible information, and, in the specific case of accounting information, so that it reaches the recipients in a way that it can be used, it is necessary for the user to be able to read and understand the message transmitted. Thus, realizing the existence of possible problems in the form of communication of public sector information, the concepts of readability and comprehensibility, arising from studies in the area of education, are used in this scope.

Readability is text-centric, while comprehension measures the interaction between the text and the reader. Readability measures the textual difficulty of a passage, while comprehension measures a reader's ability to acquire knowledge of a text, and is dependent not only on syntactic difficulty, but also on reader characteristics such as prior knowledge, interest, and general ability of reading. The readability or syntactic complexity of a text, however, is essentially fixed. Readability is a requirement for understanding, but it does not guarantee comprehensibility (Jones, 1997).

Loughran and McDonald (2014) define readability as the effective communication of information relevant to the assessment. Fakhfakh (2014) defines it as the ease with which the text can be read and understood. For Peleias (2017, p. 25) legibility is "the quality of writing, linked to the quality of accounting information, whose objective is to facilitate the reading and understanding of financial statements, resulting in an easier and faster communication of accounting information to its users".

Readability formulas are mathematical models that assign a score to a selected passage. Essentially, they measure sentence difficulty by counting the number of words per sentence and the difficulty of words per number of letters or the number of syllables per word (Fakhfakh, 2014; Marsh & Montondon, 2005; Silva & Fernandes, 2009). They focus on predicting text complexity using syntactic and vocabulary features. These formulas are passive and do not require the participation of the reader (Jones, 1997; Rodrigues & Silva, 2015).

There are several readability formulas available, such as the Dale-Chall, Flesch Reading Ease Score, Fog Index and Lix (Marsh & Montondon, 2005). The Flesch test is accepted and used in the accounting literature (Courtis, 1996; Cunha & Silva, 2009; Silva & Fernandes, 2009; Peleias, 2017) for legibility analysis. It produces a score that can be aligned to the reading difficulty level; the lower the score, the more difficult the narrative passage is to read. Texts with scores above 70 are considered relatively easy to read; scores between 50 and 30 are classified as difficult and narratives with less than 30 points are very difficult (Clarke, Hraskey, & Tan, 2009; Marsh & Montondon, 2005).

As a way of guiding texts to be written in clear and simple language, there are some worldwide movements known as plain language, which consist of the elaboration of guidance manuals on how to write in simple language and, as a consequence, increase users' understanding of

the information.

Plain language is a communication way through which the audience can understand for the first time what they read or hear; however, language that is clear to one audience may not be clear to another. Material can be considered written in plain language if the audience can find what they need, understand and be useful to their needs. No technique defines a simple language. A simple language is defined by results, that is, it must be easy to read, understand and use (Plainlanguage, 2011).

In this sense, the usefulness of narrative disclosures will depend in part on the complexity of the display (its readability) and the ability of users to discern the appropriate meaning (its understanding). If the message intended by the preparers of accounting disclosures is to be successfully conveyed, the receiver must be able to read and understand (Smith & Taffler, 1992).

Smith and Taffler (1992) define understandability as the user's ability to discern the meaning of the message and argue that the receiver needs to be able to read and understand the message in order for understanding to actually occur.

Linguistically, comprehension is related to the perception of the correct meaning of texts and intelligibility assumes that readers are able to read the information content and the meaning of ideas. Comprehension as a qualitative characteristic is conditioned by several factors, such as: writing skills, communication reliability and reading skills (Fakhfakh, 2014).

In this sense, Jones and Smith (2014) approach that comprehension measures the ability of a reader to acquire knowledge of a text and is contingent not only on the syntactic difficulty, but also on the characteristics of the reader, such as previous knowledge about the subject, interest and general reading ability.

Thus, the comprehensibility of the financial statements will depend on the user's ability to read and understand the meaning of the message, as well as on his previous experiences, such as subject knowledge and readability. In this article, the definition of understandability for financial statements applied to the public sector is understood as the reader's ability to interpret what is informed and is based on the idea that the reader understood the message and can make use of it, whose objective is to serve as a social control tool.

3. Methodology

In this work, an exploratory approach was adopted (Babbie, 2011) given the absence of previous research with the same conceptual framework. An electronic questionnaire was used, using the SurveyMonkey® tool, as a data collection instrument (Cozby & Bates, 2011; Martins & Theóphilo, 2009). This collection instrument was developed from the Mazzon mooring matrix (1981), which provides a systemic approach when examining the quality of the research, that is, the adequacy between the adopted model, objectives to be achieved, questions or hypotheses formulated and data treatment.

The questionnaire consisted of four blocks in which we sought to identify: (I) profile of respondents; (II) users' understanding of the interest and usability of financial statements; (III) users' understanding of the comprehensibility of financial statements and (IV) users' understanding of the use of plain language elements as facilitators of the comprehensibility of public sector information.

In block III, questions were included, for which the Flesch test was applied in certain explanatory notes, in order to analyze the relationship between understandability and readability. For that, passages from the explanatory notes that had different Flesch indexes (easy to read and difficult to read) were used, seeking to analyze whether the notes with the highest Flesch index are more understandable and the notes with the lowest Flesch index are less understandable.

As a way of reaching the largest possible audience of respondents, partnerships were established with entities and organizations, such as the São Paulo Social Observatory; the Open Accounts Association; the NGO Transparência Brasil and the Accountants Syndicate of São Paulo. The questionnaire was also disseminated on social networks through Facebook, LinkedIn and WhatsApp, email contacts, undergraduate students in Accounting and Administration; graduate and master's students and ex-students, as well as the distribution of printed questionnaires. The dissemination through partnerships and social networks allowed the participation of respondents from different states of Brazil.

For the pre-test stage, three different target audiences were selected: the first one, four members of the São Paulo Social Observatory, as representatives of the citizens; the second group was composed of twelve students from the postgraduate course in management and public

controllorship at FECAP/SP and the third group was composed of professors from the undergraduate course in Accounting Sciences, totaling twenty-two possible respondents. These participants were not part of the final sample of respondents, and were used specifically for validation and adjustments to the data collection instrument.

The questionnaire was made available from 4/23/2018 to 5/22/2018. The data collected recorded 653 responses, of which 415 were complete, specifically those used in data analysis. Data were analyzed qualitatively and quantitatively by testing relationships between variables. The expected relationships are theoretically supported as shown in Figure 1.

Figure 1 - Variables and expected relationships

Variable	Expected relationships	Authors
Education	People with higher education have greater understanding of financial statements	(Augustinho & Oliveira, 2014; Cotrim, 2012; Miranda et al., 2008; Hall, 2001).
Graduation area	People with higher education in the areas of accounting, finance and economics have greater understanding of financial statements	(Cotrim, 2012; Hall, 2001)
Occupation	Public servants better understand financial statements	.
Knowledge of public sector accounting	People with greater knowledge of public sector accounting have greater understanding of financial statements	(Augustinho & Oliveira, 2014; Miranda et al., 2008).
Readability	The greater the legibility of accounting narratives, the greater the comprehensibility	(Clark, Hrasky & Tan, 2009; Jones & Smith, 2014; Marsh & Montandon, 2005; Jones, 1997; Smith and Taffler, 1992; Yusuf and Jordan, 2017).

From the questionnaire data, 14 models were run in SmartPLS 3.2.8. In each model, the statistical significance of the structural relationships (beta regression coefficient) between the variables related to the characteristics of the respondents and those concerning the comprehensibility of the financial statements was analyzed.

For that, bootstrapping procedures were followed with 5,000 resamplings and a significance level of 0.05. The statistical significance of the regressions was analyzed by the t-value $> = 1.96$ (HAIR et al., 2014) and p-value < 0.05 .

The effect size (f^2) or Cohen's indicator was also analyzed, whose reference values are: 0.02, 0.15 and 0.35, respectively, small, medium and large (COHEN, 1988; HAIR et al. , 2014).

4. Results Analysis

In this section, the results and discussions of the variables associated with the comprehensibility of public sector financial reports are presented from the users' understanding of this information, specifically the variables attributed to the characteristics of individuals, to comprehensibility and readability.

The profile of the respondents is mostly female, with higher education or above, with a predominance of graduates in accounting sciences (38%) and administration (17%); the age group is 40 years of age or younger; most of them are professionally employed in the private sector (30%) and in the public sector (26%) and, when asked about their knowledge of public sector accounting, 85.89% said they had no, little or reasonable knowledge.

Thus, the general profile of the respondents was of citizens with a specialized level of education, but who, for the most part, do not have specific knowledge about public sector accounting.

In section 2, which dealt with the interest and usability of the information, the channel used in the communication of information was identified (Dias Filho & Nakagawa, 2012; Shannon, 1948; Shannon & Weaver, 1964), as well as the information needs by the users, because, to be understandable, the information must be presented in a way that corresponds to the needs of the users (Resolution CFC, 2016).

Most, 58.31%, stated that they never looked for or rarely look for information about public accounts, being the most used means to look for the transparency portal of the municipality, followed by the city hall website and the official gazette.

Thus, based on this group of respondents and the access to information law (2011), it is possible to indicate that the channel (Dias Filho & Nakagawa, 2012; Shannon, 1948; Shannon & Weaver, 1964) used to make information from the sector public, according to regulation, is the same in which users, for the most part, seek this information, which is the transparency portal. This is an important factor, since the first step in understanding the information is knowing where to look for it and that it is in this channel in an integral and timely manner (Resolução CFC, 2016; Eppler, 2006; Lesca & Lesca, 1995).

When asked about the search and/or use of public sector financial statements, 59% said they had never searched, while 41% had already done so. Regardless of having already looked for and/or used it, when asked about the

information that they considered to be of greatest interest, both groups stated that they were concerned about income and expenses, especially related to health and education.

The results found are consistent with the research findings by Jordan, Yusuf, Mayer and Mahar (2016), where they demonstrate that citizens are more interested in some types of information than others, which are specifically related to government revenues and expenditures.

Thus, Jordan et al. (2016) also state that the dissemination of this information, in particular, in a timely, relevant and contextualized way, aiming to help citizens, can increase their trust in the government, as well as increase their perception of government performance. Augustinho and Oliveira (2014) also identified in their research that respondents perceive the usefulness of accounting information, as well as are interested in its content.

When asked about the usability of the information, most respondents said they had sought and/or used public sector information to assess public spending (24%); knowing the general administration of the municipality (20%); to know if the result of the municipal budget is positive (16%); assess whether the government spends in accordance with the law that authorizes spending and assess public revenues (13%); control the actions of public managers (11%) and elect directors (3%).

The concern of both those who have already sought and/or used financial information from the public sector and those who would seek and/or use this information is related to the evaluation of public expenditures, as well as the knowledge of the general administration of the municipality. The results are consistent with the research findings by Augustinho and Oliveira (2014) and Jordan et al. (2016).

In section 3, part of the budget, financial and equity balances and explanatory notes to the budget balance and balance sheet were presented to the respondents, aiming to provide them with direct contact with the information, as in reality.

In general, in all questions about the comprehensibility of the financial statements, the answers were in the sense of totally or partially agreeing with the understanding. It was expected, however, that respondents would not be able to understand them, according to previous research (e.g. Gallon & Pfitscher, 2011; Hall, 2001; Miranda et al., 2008).

As for the comprehensibility of the budget balance, 44.48% said they agreed with the comprehensibility; 34.89% totally or partially disagreed; and 20.64% had no opinion. When asked about the identification in the balance sheet if the revenues collected were lower than expected, 53% answered correctly, demonstrating that, in fact, they understood the information; on the other hand, when asked whether the expenses incurred were greater than those expected, most responses (46%) were in the sense of not understanding this information.

Still on the budget balance, when asked about the total expenses incurred with payroll, which would be the expenses committed, 80.86% answered incorrectly, which demonstrates that the use of technical terms when preparing the budget balance can lead to misinterpretations on the part of users who, many times, do not know the acronyms and nomenclatures of the accounting sector, such as, for example, the difference between the terms committed, settled and paid expenses.

The same previous questions were performed presenting the information in a graphic format, which considerably increased the understanding of the respondents. It was possible to perceive that the use of graphics and simplified information can increase the understanding of the information. This was evidenced both in the low level of respondents who said they did not know how to respond, as well as in the comparison of the answers given previously, which was significantly higher, supporting the literature on the topic (Resolução CFC, 2016; Dubai, 2004; Lenguaje Claro, 2007; Plainlanguage, 2011; Securities Exchange Commission, 1998).

As for the comprehensibility of the balance sheet, 43.25% fully or partially agreed with its understanding; 34.15% totally or partially disagreed; and 22.60% neither disagreed nor agreed. When asked to find the total debt owed to the municipality's suppliers in the statement, 83.96% responded appropriately.

Regarding the question about the comprehensibility of the financial statement, 46.66% fully or partially agreed with its comprehensibility; 31.85% totally or partially disagreed and 14.07% had no opinion. When asked about the amount of federal transfers received by the municipality, 77.19% answered adequately, demonstrating that they understand the information.

Regarding the explanatory notes, the focus of the questions was about the readability of the information and the comprehensibility of the respondents. For that, explanatory notes of the budget balance were used, with a Flesch index of 41, being a text difficult to read. Later, the same explanatory notes were rewritten, maintaining the substance of the previous text, however, reaching a readability index of 70, considered easy to read.

As for the explanatory notes with lower readability, 50.75% fully or partially agreed with their comprehensibility; 34.08% totally or partially disagreed and 15.17% had no opinion. The same question regarding the note with greater readability returned 68.58% of respondents considering the information fully or partially understandable; 17.83% totally or partially disagreeing, and 13.47% having no opinion.

Still referring to these two models of explanatory notes, respondents were asked if the information was presented in clear and accessible language, in a simplified style, with an adequate amount of information (not too much, not too little) and without redundancies (getting straight to the point). The percentages found in the explanatory note with greater readability are relatively higher in the sense of totally or partially agreeing with these assertions.

These results allow us to corroborate the literature in the sense that accounting reports are written in difficult language (Hall, 2011), requiring the use of less technical terms to increase their understanding (Félix & Silva, 2009; Miranda et al., 2008; Santos & Mascarenhas, 2007) and that the use of elements that facilitate legibility, such as plain language (Resolução CFC, 2016; CODIM, 2016; Dubai, 2004; Lenguaje Claro, 2007; Plainlanguage, 2011; OCPC 07, 2014; Securities Exchange Commission, 1998) can improve the understandability of information.

In continuation, the characteristics of the respondents were tested in relation to the answers given about the comprehensibility of the financial statements. Thus, the variables level of education, graduation area, occupation and knowledge in public sector accounting were used.

Table 1 shows the variables that showed a significant relationship, the corresponding financial statement, the t-value, p-value and f^2 obtained, and finally, the relationship that can be deduced.

Table 1 - Relationships between user characteristics and the understandability of statements

Variable	Financial Statement (Balance Sheet)	Value-t	Value-p	F ²	Relationship
Education level	Budgetary	2,115	0,034	0,009	The higher the level of education, the greater the comprehensibility.
	Equity	3,865	0,000	0,033	
	Financial	2,754	0,006	0,019	
Graduation course	Budgetary	1,312	0,19	0,005	Citizens with a degree in accounting sciences understand information better.
	Equity	5,047	0,000	0,068	
	Financial	2,429	0,015	0,017	
Occupation	Budgetary	2,307	0,021	0,012	Citizens who work in the public sector understand the information better.
	Equity	0,0331	0,741	0,000	
	Financial	1,032	0,302	0,002	
Self-assessment	Budgetary	4,816	0,000	0,060	Knowledge in public sector accounting has nothing to do with the comprehensibility of information.
	Equity	4,552	0,000	0,051	
	Financial	4,179	0,000	0,042	

Regarding the occupation variable, it was expected that public workers would have a better understanding of the balance sheets and other information in the public accounts, but what was verified was the relationship of this variable only with the understandability of the budget balance and with the identification of the total number of suppliers, requested in the balance sheet analysis.

The relationship obtained between the level of education and comprehensibility is in line with the literature by Hall (2001), Jones and Shoemaker (1994) and Kinnersley and Fleischman (2001), who state that financial reports are difficult to understand, requiring higher education to understand them. Thus, they require a higher level of knowledge than the population has, making it an ineffective method of communication.

Regarding the relationship between the undergraduate area and comprehensibility, significant relationships were identified with the understanding of the balance sheet and financial, not happening in relation to the budget balance. In the relationship between knowledge in public sector accounting and understandability, although there was a relationship in the test, most respondents said they had no knowledge in this sector. Thus, it is possible to say that knowledge in government accounting does not increase, in a statistically significant way, the comprehensibility of information. This finding is consistent with the research by Miranda et al. (2008).

Then, the relationship between the legibility of the explanatory notes, the comprehensibility of the respondents and their level of education was tested. The results obtained are shown in Table 2.

Table 2 - Relations between readability, comprehensibility and education level

Variable	Financial Statement	Value-t	Value-p	F ²	Relationship
Education	Explanatory note (lower legibility)	1,383	0,167	0,005	The higher the readability, the lower the dependence on the level of education for the comprehensibility of the information.
Education	Explanatory note (greater legibility)	0,498	0,619	0,001	

From the data presented in Table 2, it is possible to verify that there is no relationship between readability and level of education at a significance level of 0.05. However, if considered statistically significant at 1%, a relationship is identified between education and the explanatory note with greater readability.

Thus, it can be said that there is a relationship between readability, education and comprehensibility, however, this association becomes less significant as the legibility of the explanatory note increases, reaffirming that texts with greater legibility tend to be more understandable regardless of the reader's education level.

When asked about the use of plain language elements as facilitators of comprehensibility, the vast majority of respondents stated that they fully or partially agreed that the use of these elements would help understanding. The results were: use of clear and understandable language (88.40%); avoid the use of technical words (85.57%); use of graphics (87.91%); use of tables (86.97%); use of summarized statements (83.75%) use of acronyms and glossaries (79.15%); simplified report (85.93%).

Finally, respondents were asked whether they would prefer separate reports to be presented with public sector financial information, one being conventional for more sophisticated users, who have knowledge in the public sector, and another simplified, which is accessible to the less skilled. In this sense, 87.06% totally or partially agreed, 3.48% totally or partially disagreed and 9.45% had no opinion.

The test of relationships between the variables and the preference of the respondents was also carried out for the public sector to present different reports, one conventional and the other simplified, which would be more accessible to the less specialized user. In this sense, there was a significant relationship between the education variable and the preference for more accessible reports, obtaining a t-value of 4.075 and a p-value of 0.000.

The elaboration of separate reports is a suggestion of research by Marsh and Montondon (2005); Marsh,

Montondon and Ken (2005); Jordan et al. (2016) and Yusuf and Jordan (2017) and, as shown, it is preferred by most respondents of this research.

5. Final Considerations

This article identified the variables associated with the comprehensibility of public sector financial reports from the users' understanding of this information and concludes that there is a relationship between the level of education, the graduation course, occupation and self-assessment in knowledge about sector accounting public with the assumed level of comprehensibility. It was also found that the higher the readability index, the greater the audience that can understand the information.

The findings made it possible to point out that the Flesch test, used as a readability metric, can significantly help in the production of more accessible reports to users, along with the use of attributes that improve the quality of information, such as producing information in adequate quantity, without unnecessary elements and containing only information considered relevant.

The research also demonstrated the importance of using plain language elements as an aid in the production of clearer, more accessible and understandable financial information for citizens, and the questions on this topic had high levels of agreement by the respondents.

Regarding professional practice, this study indicates that there is a need for changes in the way public sector financial information is disclosed, adapting the information to the characteristics of ordinary citizens, as there seems to be a gap between the financial information that is made available and the profile of these citizens.

It should be noted that the financial statements applied to the public sector are prepared using specific language, and its users are expected to be aware of the activities of this sector and be able to read and understand this information, even considering that some of these matters are particularly complex and difficult.

It also shows the importance of preparing different reports, one for citizens without specific knowledge and focused on their main interests, as demonstrated in the development of this research, in contrast to the financial statements prepared for the fulfillment of legal obligations and attendance to the bodies inspectors. This seems to be the most accessible means, but not so easy to implement, due to the difficulties and the great existing conservatism,

especially in the Brazilian public sector.

In this sense, and considering what has been demonstrated in this research, alternatives could be used by the preparers of these reports, with the objective of informing citizens, primary users, about the reported subjects, disseminating them, for example, through simplified reports, newsletters and graphics.

In fact, the research itself deepened discussions about readability, comprehensibility and quality of information. Demonstrating the need to create strategies and alternatives where citizens can be provided with understandable information, which can improve the quality of financial reports, specifically in the public sector and; society, tracing paths so that the most different strata of society can make use of the information disclosed by the public sector.

However, there are several ramifications opened by this research and the gaps in the literature, specifically to those who seek to understand the phenomena of the public sector. Few researches on the proposed theme were developed in this sector, and the problems found here indicate alternatives for improving the quality of information in the public sector.

Based on this research, a research agenda is recommended that involves the analysis of the effects of using reports with greater readability compared to the reports currently practiced, which could bring greater benefit to the public sector and society.

References

- Adelberg, A. H. (1979). A methodology for measuring the compreensibilidade de financial report messages. *Journal of Accounting Research*, 17(2), 565-592. Recuperado de <http://www.spell.org.br/documentos/ver/49396/compreensibilidade-de-leitura-dos-estudantes-de--->
- Augustinho, S. M., & Oliveira, A. G. (2014). A informação contábil pública como instrumento de controle social: A percepção de líderes comunitários da cidade de Curitiba. *Revista de Informação Contábil*, 8(2), 49-68. Recuperado de <https://periodicos.ufpe.br/revistas/ricontabeis/article/download/13335/16035>
- Avelino, B. C., Cunha, J. V., Lima, G. A., & Colauto, R. D. (2014). Características explicativas do nível de disclosure voluntário de municípios do estado de Minas Gerais. *Revista de Administração, Contabilidade e Economia*

- , 13(2), 571-608. Recuperado de <https://periodicos.unoesc.edu.br/race/article/view/4099>
- Babbie, E. (2011). *The basics of social research*. Belmont: Cengage Learning.
- Barnett, A., & Leoffler, K. (1979). Legibilidade of accounting and auditing messages. *The Journal of Business Communication*, 16(3), 49-59.
- Barth, M. E., & Schipper, K. (2008). Financial reporting transparency. *Journal of Accounting, Auditing & Finance*, 23(2), 173-190. <https://doi.org/10.1177/0148558X0802300203>
- Clarke, D. P., Hrasky, S. L., & Tan, G. T. (2009). Voluntary narrative disclosures by local governments: A comprative analysis of the textual complety of mayoral and chairpersons' letters in anual reports. *The Australian Journal of Public Administration*, 68(2), 194-207. Recuperado de <https://onlinelibrary.wiley.com/doi/abs/10.1111/j.1467-8500.2009.00630.x>. <https://doi.org/10.1111/j.1467-8500.2009.00630.x>
- Cohen, J. (1988). *Statistical power analysis for the behavioral sciences* (2nd ed.) New York: Psychology Press..
- Constituição da República Federativa do Brasil. (2016). Recuperado de http://www.planalto.gov.br/ccivil_03/constituicao/constituicaocompilado.htm
- Cotrim, C. H. P. (2012). *Compreensibilidade dos Relatórios Contábeis e Financeiros de Companhias de Capital Aberto listadas na BM&FBovespa: Uma análise da percepção dos usuários investidores* (Dissertação de Mestrado). Fundação Escola de Comércio Álvares Penteado - FECAP, São Paulo, SP, Brasil. Recuperado de <http://tede.fecap.br:8080/handle/tede/678>
- Courtis, J. (1996). Readability of annual reports: western versus Asian evidence. *Accounting, Auditing & Accountability Journal*, 8(2), 4-17. <https://doi.org/10.1108/09513579510086795>.
- Cozby, P. C., & Bates, S. C. (2011). *Methods in Behavioral Research*. New York: McGraw-Hill.
- Cunha, R. K. C., & Silva, C. A. T. (2009). Análise da facilidade de leitura das Demonstrações Contábeis das empresas Brasileiras: Uma investigação do Gerenciamento de impressões nas narrativas contábeis. *Anais do Congresso USP Controladoria e Contabilidade*, São Paulo, SP, Brasil, 9. Recuperado de https://congressosp.fipecafi.org/anais/artigos92009/an_resumo.asp?con=1&cod_DAS+EMPRESAS+BRASILEIRAS%3A+UMA+INVESTIGA
- Dias, J. M., F°. (2013). A contabilidade e a ordem social: Uma abordagem das teorias semióticas e da comunicação. *Revista FAE*, 16(1), 6-17. Recuperado de <https://revistafae.fae.edu/revistafae/article/view/120>
- Dias, J. M., F°. , & Nakagawa, M. (2012). Reflexões sobre a dimensão semiótica da análise de balanços: Uma contribuição à otimização de decisões de crédito. *R. Cont. Ufba*, 33-47. Recuperado de <https://periodicos.ufba.br/index.php/rcontabilidade/article/view/6194>. <https://doi.org/10.9771/rcufba.v6i1.6194>
- Dias, J. M., F°. , & Nakagawa, M. (2001). Análise do processo da comunicação contábil: Uma contribuição para a solução de problemas semânticos utilizando conceitos da teoria da comunicação. *Revista Contabilidade & Finanças*, 15(26), 42-57. Recuperado de <https://www.revistas.usp.br/rcf/article/view/34055>. <https://doi.org/10.1590/S1519-70772001000200003>
- Dubay, W. H. (2004). *The Principles of Legibilidade*. California: Impact Information.
- Eppler, M. J. (2006). *Managing information quality: Increasing the value of information in knowledge-intensive products and process* (2nd ed.). Heidelberg: Springer.
- Fakhfakh, M. (2014). Linguistic performance and legibility of auditor's reports with modified opinions: An advanced investigation based on the ISAs on audito reports. *Asian Review of Accounting*, 24(1), 105-130. Recuperado de <https://www.emerald.com/insight/content/doi/10.1108/ARA-02-2014-0021/full/html>. <https://doi.org/10.1108/ARA-02-2014-0021>
- Félix, C. L., & Silva, L. M. (2009). Regime próprio de previdência e assistência social: Uma análise do grau de conhecimento que o servidor público do município do Rio de Janeiro detém em relação às informações gerenciais do regime previdenciário municipal. *Pensar Contábil*, 11(44), 23-31. <http://www.atena.org.br/revista/ojs-2.2.3-06/index.php/pensarcontabil/article/view/77>
- Gallon, A. V., Trevisan, R., Pfitscher, E. D., & Limongi, B. (2011). A compreensibilidade dos cidadãos de um município gaúcho acerca dos demonstrativos da lei de responsabilidade fiscal publicados nos jornais. *Revista de Contabilidade do Mestrado em Ciências Contábeis da UERJ*, 16(1), 79-96. Recuperado de <https://www.e-publicacoes.uerj.br/index.php/rmccuerj/>

- article/view/5480 <https://doi.org/10.12979/rcmccuerj.v16i1.5480> Journal, 53(3), 301-308. 10.1016/j.soscij.2016.04.007
- Hair, J.F., Hult, T.M., Ringle, C.M., & Sarstedt, M. (2014). *A primer on partial least squares structural equation modeling (PLS-SEM)*. Los Angeles: SAGE.
- Hall, D. R., Jr. (2001). *An investigation of the availability, distribution and usability of the comprehensive annual financial reports of U.S. cities* (Dissertation of master). Florida Atlantic University, Washington, United States. Recuperado de <https://www.proquest.com/openview/ab8cfaac0041b62f1072cc7972a1007/1?pq-origsite=gscolar&cbl=18750&diss=y>
- Ijiri, Y. (1975) *Theory of accounting measurement*. Sarasota, FL: American Accounting Association.
- IPSASB. (2010). *Conceptual framework for general purpose financial reporting by public sector entities*. New York. Autor. Recuperado de https://www.ifac.org/system/files/publications/exposure-drafts/IPSASB-ED_Conceptual_Framework_Phase_1.pdf
- Ijeoma, N. B. (2014). The impact of international public sector accounting standard (ipsas) on reliability, credibility and integrity of financial reporting in state government administration in Nigeria. *International Journal Of Technology Enhancements and Emerging Engineering Research* , 2(3), 1-8. Recuperado de <https://issuu.com/ijteee/docs/the-impact-of-international-public>
- Jones, M.J. (1997). Methodological themes critical appraisal of the cloze procedure's use in the accounting domain. *Accounting, Auditing & Accountability Journal* , 10, 105-128. <https://doi.org/10.1108/09513579710158739>
- Jones, M. J., & Shoemaker, P. A. (1994). Accounting narratives: A review of empirical studies of content and legibilidade. *Journal of Accounting Literature* , 13, 142-184. Recuperado de <https://www.proquest.com/openview/e6a9b341cb35264bfa683df5eb62f131/1?pq-origsite=gscholar&cbl=31366>
- Jones, M., & Smith, M. (2014). Traditional and alternative methods of measuring the comprehensibility of accounting narratives. *Accounting, Auditing & Accountability Journal* , 27(1), 183-208. <https://doi.org/10.1108/AAAJ-04-2013-1314>
- Jordan, M., Yusuf, J. E., Mayer, M., & Mahar, K. (2016). What citizens want to know about their government's finances: Closing the information gap. *The Social Science*
- Kinnersley, R., & Fleischman, G. (2001). The readability of government's letter of transmittal relative to public company management's discussion and analysis. *Journal of public budgeting, accounting & financial management*, 13, 1-22.
- Leandro, C. A., Pérez, M. C. C., & Hernandez, A. M. L. (2016). The convergence of the central american countries to international accounting standards. *Revista de Administração Pública*, 50(2), 265-283. Recuperado de <https://www.scielo.br/j/rap/a/mLrQ4KsMMk8m6Z7mC8VLBPx/?lang=en>
- Lei n. 12.527, de 18 de novembro de 2011. Regula o acesso a informações previsto no inciso XXXIII do art. 5º, no inciso II do § 3º do art. 37 e no § 2º do art. 216 da Constituição Federal; altera a Lei nº 8.112, de 11 de dezembro de 1990; revoga a Lei nº 11.111, de 5 de maio de 2005, e dispositivos da Lei nº 8.159, de 8 de janeiro de 1991; e dá outras providências. Recuperado de http://www.planalto.gov.br/ccivil_03/_ato2011-2014/2011/lei/l12527.htm
- Lesca, H., & Lesca, E. (1995). *Gestion de l'information, qualité de l'information et performances de l'entreprise*. Paris: Litec.
- Li, F. (2008). Annual report legibilidade, current earnings, and earnings persistence. *Journal of Accounting and Economics*, 221-247. <https://doi.org/10.1016/j.jacceco.2008.02.003>
- Loughran, T., & McDonald, B. (2014). Measuring legibilidade in financial disclosures. *The Journal of Finance* , 69(4), 1643-1671. Recuperado de <https://onlinelibrary.wiley.com/doi/abs/10.1111/jofi.12162>
- Maia, J. O. (2014). O estudo de caso nas pesquisas de e-gov: A relevância de um olhar qualitativo na pesquisa em linguagens e tecnologia. *Linguagem & Ensino*, 17(3), 603-626. Recuperado de <https://periodicos.ufpel.edu.br/ojs2/index.php/rle/article/view/15307> . <https://doi.org/10.15210/rle.v17i3.15307>
- Marsh, T. L., & Montondon, L. G. (2005). A comparison of the legibilidade of governmental annual financial reports popular reports and management discussion and analysis. *Journal of Accounting and Finance Research*, 13(3), 153-161.
- Marsh, T. L., Montondon, L. G., & Kemp, A. M. (2005). Legibilidade of management's discussion and analysis for

- local governments. *Journal of Organizational Culture, Communications and Conflict*, 9(1), 115-123.
- Marteleto, R. M. (1987). Informação: Elemento regulador dos sistemas, fator de mudança social ou fenômeno pós-moderno?. *Ciência da Informação*, 16(2), 169-180.
- Martins, G. A., & Theóphilo, C. R. (2009). Metodologia da investigação científica para ciências sociais aplicadas (2a ed.). São Paulo: Atlas.
- Mazzon, J. A. (1981). Análise do Programa de Alimentação do Trabalhador sob o conceito de marketing social. Tese de Doutorado, Faculdade de Economia, Administração e Contabilidade da Universidade de São Paulo, São Paulo, SP, Brasil. Recuperado de <https://pesquisa.bvsalud.org/portal/resource/pt/biblio-1075304>
- Michener, G., & Bersch, K. (2011). Conceptualizing the quality of transparency. *Anais da Global Conference on Transparency*, Rutgers University, Newark, 1-27, 1.
- Miranda, L. C., Silva, A. J., Ribeiro, J. F., Fº., & Silva, L. M. (2008). Uma análise sobre a compreensibilidade das informações contábeis governamentais comunicadas pelo balanço orçamentário. *Brazilian Business Review*, 5(3), 209-226. Recuperado de <https://www.redalyc.org/articulo.oa?id=123012563003>
- Orientação técnica CPC 07, de 11 de novembro de 2014. Evidenciação na divulgação dos relatórios contábil-financeiros de propósito geral. Recuperado de http://static.cpc.mediagroup.com.br/Documentos/488_OCPC_07_Orienta%C3%A7%C3%A3o.pdf.
- Parker, M. B., Moleshe, V., Harpe, R. D., & Wills, G. B. (2006). An evaluation of information quality frameworks for the world wide web. *Electronic & Software System*, (20), 1-11. Recuperado de <http://eprints.soton.ac.uk/id/eprint/262908>
- Peleias, F. A. (2017). Mecanismos linguísticos (des) favoráveis para a legibilidade das demonstrações financeiras: Uma análise das empresas listadas no mercado de capitais brasileiro (Dissertação de Mestrado). Fundação Escola de Comércio Álvares Penteado - FECAP, São Paulo, SP, Brasil. Recuperado de <http://tede.fecap.br:8080/handle/jspui/738>
- Pina, V., Torres, L., & Royo, S. (2007). Are ICTs improving transparency and accountability in the EU Regional and local governments? An empirical study. *Public Administration*, 85(2), 449-472. <https://doi.org/10.1111/j.1467-9299.2007.00654.x>
- Plainlanguage. (2011). Federal Plain Language Guidelines. Recuperado de <https://www.plainlanguage.gov/media/FederalPLGuidelines.pdf>
- Pronunciamento de Orientação CODIM n. 19 de março de 2016. Melhores práticas de divulgação de informações em notas explicativas. Recuperado de www.codim.org.br/.../PO_CODIM_n_19_Melhores_Praticas_Divulgacao
- Resolução CFC n. 2016/NBCTSPEC, de 04 de outubro de 2016. Aprova a NBC TSP ESTRUTURA CONCEITUAL - Estrutura Conceitual para Elaboração e Divulgação de Informação Contábil de Propósito Geral pelas Entidades do Setor Público. Recuperado de http://www2.cfc.org.br/sisweb/sre/detalhes_sre.aspx?Codigo=2016/NBCTSPEC&arquivo=NBCTSPEC.doc
- Riahi-Belkaoui, A. (1995). The linguistic shaping of accounting. London: Quorum Books.
- Rodrigues, F. F., & Silva, C. A. (2015). Fatores determinantes das informações divulgadas no relatório da administração das empresas brasileiras de capital aberto. *Business and Management Review*, 4(10), 282-298. Recuperado de <https://proxy.furb.br/ojs/index.php/universocontabil/article/view/5129>
- Santos, A. M., & Mascarenhas, R. C. (2007). Análise da compreensibilidade dos relatórios de gestão das unidades gestoras do governo federal jurisdicionadas à CGU Regional/AM e ao TCU SECEX/AM. *Anais do Congresso Brasileiro de Custo*, João Pessoa, PB, Brasil, 14. Recuperado de <https://anaiscbc.emnuvens.com.br/anais/article/view/1562>
- Securities Exchange Commission (1998). A plain english handbook: How to create clear SEC disclosure. Recuperado de www.sec.gov/pdf/handbook.pdf.
- Secretaría de La Función Pública (2007). Language claro (3a ed.). México. Autor. Recuperado de <http://www.funcionpublica.gob.mx/web/doctos/temas/programas/ManualLenguajeClaro.pdf>
- Shannon, C. E. (1948). A mathematical theory of communication. *The Bell System Technical Journal*, 27, 379-423, 623-656.
- Shannon, C. E., & Weaver, W. (1964). The mathematical

- theory of communication. Urbana: The University of Illinois Press.
- Silva, C. A., & Fernandes, J. L. (2009). Legibilidade dos fatos relevantes no Brasil. *RAC-Eletrônica*, 3(1), 142-158. Recuperado de <http://www.spell.org.br/documentos/ver/31132/legibilidade-dos-fatos-relevantes-no-brasil/i/pt-br>
- Smith, M., & Taffler, R. (1992). Legibilidade and compreensibilidade: Different measures of the textual complexity of accounting narrative. *Accounting, Auditing & Accountability Journal*, 5(4), 84-98.
- Stead, B. A. (1977). Content analysis and legibilidade formulas as applied to the accounting principles board opinions. *The Journal of Business Communication*, 14(3), 23-34.
- Yusuf, J. E., & Jordan, M. M. (2017). Accessibility of the management's discussion and analysis to citizen users of government financial reports. *Public Budgeting & Finance*, 37(4), 74-91. Recuperado de <https://ideas.repec.org/a/bla/pbudge/v37y2017i4p74-91.html>