USE OF THE XBRL LANGUAGE: POTENTIAL BENEFITS TO BRAZILIAN COMPANIES

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Abstract

Objective of the study: the general objective of this paper was to verify what the perceived benefits and difficulties are in using the XBRL language to communicate financial information to the market.

Methodology: To achieve this general objective, we prepared a survey and we used descriptive and multivariate statistics to analyses the data.

Originality: There are few articles that research the Brazilian reality about the adoption of the XBRL language. In addition to having respondents who are users and know the language, we asked about the perception of users and preparers about the benefits of financial information that had the characteristics of files in XBRL.

Main results: It was concluded that the preparation of and interaction with XBRL files are not easy and the use of XBRL does not reduce file preparation errors. The costs of preparing XBRL files are no higher than for other file types. Thus, any possible adoption of the XBRL language in Brazil would not mean a significant cost increase for companies after the learning period. The perception of transparency in relation to the company increases, which can improve its image and contribute to a reduction in informational asymmetry.

Theoretical contributions: The work corroborates the determinants of innovation adoption, according to TRA, TAM and Diffusion of Innovation (Rogers). In addition, it confirms the perception of benefits pointed out in the literature by users and preparers of financial information.

Social / management contributions: The work contributes to the discussion of the adoption of practical aspects by regulatory bodies to increase the transparency of companies in Brazil.

Keywords: Technological innovations. XBRL. Accounting information. Information technology.

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USO DA LINGUAGEM XBRL: POTENCIAIS BENEFÍCIOS PARA EMPRESAS BRASILEIRAS

RESUMO

Objetivo do estudo: o objetivo geral deste artigo foi verificar quais são os benefícios e dificuldades percebidos na utilização da linguagem XBRL para comunicar informações financeiras ao mercado.
Metodologia: Para atingir este objetivo geral, foi elaborado um questionário e utilizou-se estatística descritiva e multivariada para análise dos dados.
Originalidade: Além de terem sido recebidas respostas de usuários conhecem a linguagem, foi verificada a percepção dos usuários e preparadores sobre os benefícios de informações financeiras que tivessem características de arquivos em XBRL.
Principais resultados: Concluiu-se que a preparação e interação com arquivos XBRL não são fáceis e o uso de XBRL não reduz erros de preparação de arquivos. Os custos de preparação de arquivos XBRL não são maiores do que a preparação de outros tipos de arquivo. Assim, qualquer possível adoção da linguagem XBRL no Brasil não significaria um aumento significativo de custos para as empresas, após o período de aprendizagem. A percepção de transparência em relação à empresa aumenta, o que pode melhorar sua imagem e contribuir para a redução da assimetria informacional.
Contribuições teóricas: O trabalho corrobora os determinantes da adoção da inovação, segundo TRA, TAM e Difusão das Inovações (Rogers). Além disso, confirma a percepção de benefícios apontados na literatura por usuários e preparadores de informações financeiras.
Contribuições sociais/de gestão: O trabalho contribui para a discussão da adoção de aspectos práticos pelos órgãos reguladores para aumentar a transparência das empresas no Brasil.

Palavras-chave: Inovações tecnológicas. XBRL. Informação contábil. Tecnologia da Informação.

RESUMEN

Objetivo del estudio: el objetivo general de este artículo fue verificar cuáles son los beneficios y dificultades percibidos en la utilización del lenguaje XBRL para comunicar información financiera al mercado.
Metodología: Para alcanzar este objetivo general, se elaboró un cuestionario y se utilizó estadística descriptiva y multivariada para el análisis de los datos.
Originalidad: Además de haber recibido respuestas de usuarios que conocen el lenguaje, se verificó la percepción de los usuarios y preparadores sobre los beneficios de la información financiera que tenía características de archivos en XBRL.
Principales resultados: Se concluyó que la preparación e interacción con archivos XBRL no son fáciles y el uso de XBRL no reduce los errores de preparación de archivos. Los costos de preparación de archivos XBRL no son mayores que la preparación de otros tipos de archivo. Así, cualquier posible adopción del lenguaje XBRL en Brasil no significaría un aumento significativo de costos para las empresas, después del período de aprendizaje. La percepción de transparencia en relación a la empresa aumenta, lo que puede mejorar su imagen y contribuir a la reducción de la asimetría informativa.
Contribuciones teóricas: El trabajo corrobora los determinantes de la adopción de la innovación, de acuerdo con TRA, TAM y Difusión de la Innovación (Rogers). Además, confirma la percepción de los beneficios señalados en la literatura por los usuarios y preparadores de información financiera.
Contribuciones sociales / de gestión: El trabajo contribuye a la discusión sobre la adopción de aspectos prácticos por parte de los organismos reguladores para aumentar la transparencia de las empresas en Brasil.

Palabras clave: Innovaciones tecnológicas. XBRL. Información contable. Tecnología de la Información.

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1 INTRODUCTION

An entity's management is responsible for elaborating and disclosing its financial statements (IFRS, 2010). This means that based on the set of accounting standards that should be used by the entity in the market involved, its managers are responsible for defining its accounting policies and preparing the information to be disclosed to the external public.

Against the current backdrop of globalization, the corporate world needs to communicate clearly and be easily understood, in order to obtain market credibility. Considering the major advances in technology, when barriers such as distance no longer exist, there is a need to unify the language both in situations involving accounting principles and for strategic situations. In the first case, the harmonization of accounting standards can be mentioned. In the second case, entities need to convey a new image to society by showing they are modern, open, and transparent. For this, they need the means to convey financial information to the market more quickly and dynamically (Riccio, Sakata, Moreira, & Quonian, 2006; McGuire, Okesson, & Watson, 2006; Sassi, Othman & Hussainey, 2021).

International studies indicate that the use of XBRL (eXtensible Business Reporting Language) increases the transparency of companies in the capital market, as well as standardizing their accounting statements, making their communications with the market more efficient, reducing the costs of preparing these, and facilitating the analysis of their accounting information (Hodge, Kennedy, & Maines, 2004; Sassi, Othman & Hussainey, 2021; Galatea, 2021).

The Securities and Exchange Commission (SEC), the US capital market regulator, states that its disclosure system aims to protect investors and maintain market efficiency. The SEC thus seeks to improve the accessibility and utility of the information it collects, stores, and releases. The XBRL language, which has been used in the entity since 2005, is one of the technological efforts undertaken to achieve those goals (SEC, 2023).

Similarly to the SEC, the IFRS Foundation states that the International Financial Reporting Standards (IFRS) and the XBRL language aim to standardize reported accounting statements in order to promote transparency and improve the quality and comparability of business information. The organization emphasizes that both (IFRS and XBRL) form a perfect partnership. The mission of the XBRL team of the IFRS Foundation is to create and provide a basic structure for the adoption and consistent implementation of IFRS with a high-quality taxonomy that uses the same language as IFRS (IFRS, 2004).

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Some studies have verified the use of XBRL in American companies listed at the SEC. Evidence has been found that this language increases the transparency of those companies and reduces the cost for investors to process information, as well as improving the level of confidence in investor decision making (Debreceny, Farewell, Piechocki, Felden, & Graning, 2010; Blankespoor, 2012; Blankespoor 2019; Henderson, 2012; Sassi, Othman & Hussainey, 2021; Galatea, 2021).

The XBRL language is designed to increase the transparency of reported information (McGuire et al., 2006; Nel & Steenkamp, 2008; Sassi, Othman & Hussainey, 2021; Galatea, 2021). For Bonsón (2001) and Wymeersch (2008), the financial information available can determine whether a company will be valued or ignored by the market. Thus, the ease of access and use of the accounting information provided by the XBRL language can positively affect the capital market.

According to Ragothaman (2012), accounting plays an important role as it is an integral part of the company's efficient contracting technology. The author emphasizes the importance of accounting in contractual relationships between agents and that the decision to adopt XBRL is influenced by informational and contractual costs.

The XBRL language is already used in various countries. The XBLR Europe website lists the following jurisdictions: Finland, France, Germany, Italy, Netherlands, Sweden, United Kingdom, plus the European Federation of Financial Analyst Societies (XBRL Europe, 2023). The most recent Brazilian taxonomy was approved by XBRL International in 2015, but it is not yet being used.

Considering the importance of using the XBRL language for communicating financial information in the world, the aim of this article is to verify what the perceived benefits and difficulties are of using the XBRL language for communicating financial information to the market.

To fulfill the aim of this article, the Disclosure Theory (Verrechia, 2001; Dye, 2001) was used, according to which accounting-financial information plays a role in reducing the informational asymmetry between company managers and shareholders and investors, and therefore the entity's performance needs to be clearly communicated to the market (Riccio et al, 2006; McGuire et al, 2006; Sassi, Othman & Hussainey, 2021; Galatea, 2021).

In addition, to understand the adoption or not of a technology by an entity or by a market, it was also necessary to resort to the theories that explain this phenomenon: Diffusion of Innovations Theory (1983), its extension according to Moore and Benbasat (1991), the Theory

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of Reasoned Action (Fisbeinh & Ajzen, 1975), extended through the Theory of Planned Behavior (Ajzen, 1985; Ajzen & Schmidt, 2020), and the Technology Acceptance Model (Legris et al., 2003).

2 LITERATURE REVIEW

2.1 ADOPTION AND DIFFUSION OF INNOVATIONS

2.1.1 Theory of Diffusion of Innovations

An entity's accounting-financial information and its system of disclosure can affect investors' and creditors' decisions, as well as affecting the actions of managers, competitors, and regulatory authorities. An increase in the quality of obligatory disclosures generally reduces an entity's cost of capital. However, the benefits of obligatory disclosures are probably different between companies (Leuz & Verrechia, 2000; Lambert, Leuz, & Verrechia, 2007).

In this paper, accounting information is understood as an instrument for reducing informational asymmetry in the market. Regulatory bodies in different countries aim to ensure the quality of that information for the market.

Moreover, this paper more specifically focuses on the way accounting-financial information is made available, in a language that facilitates its transmission and analysis. XBRL is a language geared toward the sematic field of the concepts linked to accounting-financial information, and its adoption enables a greater level of communication between market participants, as well as an improvement in the quality of the stakeholder decision-making process, as it enables automated data analysis and, consequently, it acts as an important mechanism for reducing informational asymmetry (Yoon, Zo, & Ciganek, 2011).

According to Rogers' (2003) Theory of Diffusion of Innovations (TDI), innovation refers to the ideas, practices, or objects perceived as new by the adopter. It is noted that the concept is quite broad and does not necessarily refer to something original, but rather to something perceived as such by the user. The diffusion of an innovation is a process involving its communication in a particular social context, involving individuals or groups. The adoption of an innovation is the process in which those individuals or groups decide to use it, while the opposite situation to adoption is rejection, or non-adoption, of the innovation.

According to Rogers (2003), the four main elements in the diffusion of an innovation are: (a) the innovation itself; (b) communication channels, that is, the means through which the messages flow from one individual or group to another, ranging from the radio, television, and

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internet, among others, to face-to-face; (c) the time period elapsing from the moment an individual or group becomes aware of an innovation to the moment of its adoption or rejection; and (d) the social system, which is the inter-related set of units that unite with the aim of resolving problems and accompanying goals to be achieved by the entity. The social structure is directly related to rules or norms, leaderships, and communication networks.

The Theory of Diffusion of Innovations, developed by the author in his work of 1983, defines the following perceived characteristics that influence the adoption of a technological innovation: (a) relative advantage, that is, the more the innovation is perceived as better than its predecessor (the technology used up to then), the greater the chance of it being adopted; (b) compatibility, that is, the innovation is perceived as consistent with the values, needs, and experiences of the potential users; (c) complexity, which refers to the level of difficulty of use of an innovation and is an aspect that can make it hard to adopt it; (d) observability or visibility of its benefits, that is, how the results of an innovation are observed; and (e) experimentation, that is, the degree to which the innovation can be tested or experimented before its adoption.

Moore and Benbasat (1991) add other perceived characteristics that influence the adoption of a technological innovation: (a) image, that is, the degree to which using the innovation is perceived as improving the image of the entity, which can be understood as an aspect of Rogers' relative advantage characteristic; and (b) voluntary use, that is, the user's perception of being free to decide on implementing the innovation.

According to Graeml (2003) e Weill e Ross (2020), the benefits derived from the adoption of a technology are a function of the actual consequence of its adoption. Thus, the more a technology is adopted, the more it is used, the more can be learned about it, and the more it will be developed and improved, since it will be better understood. As the adoption of a technology increases, other technologies and products will come to support it. Moreover, the propagation of a technology is influenced by the adopters themselves when these are connected in some way, such as through a business network.

2.1.2 Theory of Reasoned Action and its extensions

The Theory of Reasoned Action (TRA), which originates from social psychology and was developed by Fisbeinh and Ajzen (1975), is one of the most used models for predicting users' intentions and behaviors. The aim of this theory is to understand how the intentions of consumers or users transform (or not) into behavior, that is, into actions. The TRA assumes that human beings are rational and use and evaluate the available information to decide on an action

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or behavior. Another important point is the premise that agents have power of control over their decisions.

This theory analyzes behavioral attitudes, normative pressure, usage intention, and current use, in order to understand the relationship between these constructs. Various studies (Bagozzi, Lee, & Van Loo, 2001; Perugini & Bagozzi, 2001; Fekadu & Kraft, 2001) have found that the influence of normative pressures is decisive with regard to the acceptance and use of products or services with innovations.

Defining the behavior to be analyzed is the key point for applying the TRA, that is, defining which observable acts or which behavioral categories will be studies. Moreover, the following should be defined: (a) the target, in the case of this study, the XBRL language; (b) the context, that is, the location where the action occurs; and (c) the time, that is, the period in which the action occurs (Fishbein & Ajzen, 1975).

According to the theory, intentions are understood as propensities to carry out a behavior. According to Moutinho and Roazzi (2010), there is no perfect correspondence between intentions and behavior. However, people usually act according to their intentions. Behavioral intention exerts determinant power over behavior.

The Theory of Planned Behavior (TPB) (Ajzen, 1985, 1998, 1991; Davis et al., 2002; Davis, 1989; Davis et al., 1989; Ajzen & Schmidt, 2020) extends the TRA by including another element besides behavioral beliefs and normative beliefs: beliefs about control. This element relates to the perception of control over behavior, which refers to the individual's or company's beliefs regarding the level of ease or difficulty in carrying out a particular action.

According to Grohmann, Batistella, and Velter (2013), some constructs of the TRA (attitude, usage intention, and current use) resemble those of the Technology Acceptance Model (TAM) (Davis, 1989). However, the big difference in the first model is the use of the normative pressure construct.

The TAM model is based on the perceptions of utility and ease of use as determining factors in the individual's behavioral intention to use a system or technology (Legris et al., 2003). According to the authors, the TAM has been shown to be a useful theoretical model for helping to understand and explain behavior in the implementation of an information system and in its use and acceptance. Thus, the acceptance and use of technologies can be explained in terms of users' internal beliefs, attitudes, and intentions.

The studies of Venkatesh and Davis (1996, 2000) broadened the TAM by including the perception of ease, perception of utility, attitude regarding use, usage intention, and current

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usage constructs. Thus, the model takes into account the subjective norms, the image, the relevance for the work, the quality of the result, and the demonstration of the result as factors that influence the perceived utility, or the relative advantage of the technological innovation adopted. The usage intention and perceived utility are influenced by the experience factor and the intention to use a technological innovation is also influenced by the voluntariness.

The TDI has provided useful concepts for studying the adoption of an innovation, in this study the XBRL language, including the concept of innovation itself and, especially, the perceived characteristics that influence the adoption of a technological innovation. It is important to highlight that innovations are not uniformly adopted, and, in this research, we chose to study the perceptions of the people who prepare the accounting-financial information and who use that information, based on the ease of communication and handling provided by the technological innovation studied.

2.2 The XBRL Language

The XBRL language was created by Charles Hoffman, a Certified Public Accountant (CPA), in 1998. It is a variant of XML (eXtensible Markup Language) and was designed to optimize the communication of the financial information of entities to the market.

According to Moreira, Riccio, and Sakata (2007), the XBRL language warrants the market's attention as it eliminates the need to transcribe data between applications [for example, between a PDF (portable document format) file and an Excel spreadsheet], because the data that are reported by an entity become independent of the application in which they are created and are kept under a pre-established and standardized denomination.

The various users are thus able to extract and reposition the financial information. According to Silva et al. (2006) and Loukas et al (2022), the information transformation process from one format to another is costly and requires excessive efforts from organizations. The use of a standard language for exchanging financial information would reduce the need for these transformations.

According to the SEC (2023), interactive data can provide investors with quick access to information, in an easy-to-use format, and can help companies to prepare that information more quickly and more accurately for the market, regulatory bodies, and users in general.

Currently, the language is developed and maintained by an international consortium (XBRL International) that includes around six hundred entities and aims to promote the XBRL technology, which is a free and open language. XBRL International is composed of

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jurisdictions, which support the adoption and implementation of the language in specific geographical areas.

The IFRS Foundation has prepared the taxonomy of accounting statements according to the International Financial Reporting Standards (IFRS). This document defines the formats and each one of the elements that compose accounting statements (Balance Sheet, Income Statement, Cash Flow Statement, and Statement of Changes in Equity, among others) and footnotes. The aim of the foundation was to prepare a high-quality taxonomy that was easy to apply and globally accepted for digital reports to facilitate efficient dissemination, processing, and access to financial statements in IFRS (IFRS Foundation, 2014).

It is important to highlight that the taxonomy follows the accounting norms of every country or every regulatory body that requires financial statements (central banks, public supervisory bodies, etc.).

According to Dunne et al. (2013) and Loukas et al (2022), documents in XBRL are digitally enabled to facilitate the extraction of information directly onto spreadsheets or any other analysis software enabled for XBRL, without the need to re-enter data, thus facilitating information flows. This increases access to company data in various markets (Riccio et al., 2006; Pinsker & Li, 2008; Bonsón et al., 2009, 2009b; Dunne et al., 2013; Loukkas et al, 2022; Silva & Cerqueira, 2020). One example of a program that reads XBRL files in the American market is "Raptor," from the company Altova.

2.2.2 The geographical diffusion of the XBRL Language

XBRL International incentivizes the creation of local jurisdictions for the development of the XBRL language and to facilitate its use around the world. However, the creation of a local jurisdiction in a country is not mandatory or essential for the use of the XBRL language, which is free use.

The XBRL language has been implemented differently depending on the country. In 2002, the Australian Prudential Regulatory Authority was the first regulator to require XBRL to control the liquidity of financial institutions. China started a program of non-mandatory adoption of the XBRL language in 2003 and was one of the first countries to require, on an obligatory basis, the generation and communication of financial information in XBRL (Beerbaum, 2015).

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In 2005, in an effort to increase the accuracy and quality of financial information, as well as to reduce the cost of these reports, the Securities and Exchange Commission (SEC) started the Voluntary Presentation Program for XBRL, incentivizing US companies to use the technology (Farias, 2014).

Currently, in various countries, the use of the XBRL language is obligatory for accounting information reported by open companies to the market, for agencies that handle the commercial register of companies, for central banks, and for government entities, including the preparation of reports relating to taxes. Besides the United States, other examples include Finland, France, Germany, Italy, Netherlands, Sweden, United Kingdom, Japan, China, and Singapore, among others (XBRL Europe, 2023).

According to Beerbaum (2015), there are two determinants for the geographical distribution of the XBRL language: the first is obligatory adoption by law or according to some regulatory body and so accounting-financial information comes to be required in XBRL for different purposes (stock exchanges, central banks, etc.). The second determinant is the voluntary adoption by companies or information preparers.

The XBRL language is a technological innovation that can be and is compared with other existing and competitor technologies. According to the Theory of Diffusion of Innovations (Rogers, 1983), this involves the characteristic of relative advantage; that is, the more the innovation is perceived as better than its predecessor, the greater the chance of it being adopted. This would explain the adoption of the XBRL language, since it offers the advantage of a cost reduction for the user to obtain information (Dunne et al. 2013).

According to Beerbaum (2015), Beerbaum, Piechocki e Puaschunder (2019) and Beerbaum et al (2021), it is necessary to better explain why there is not mass voluntary adoption by companies in various countries. The study of Locke and Lowe (2007) shows that the adoption of a norm or standard is the opposite of user resistance to adopting it. The major obstacle is convincing users to use a technological innovation before it has been widely adopted, because most users expect there to be a good structure of software programs and support for adhering to the XBRL language.

3 METHODOLOGICAL PROCEDURES

3.1 Operational Definitions

In this descriptive research, the population studied involves professionals who are involved with the process of preparing and analyzing financial information. It is composed of

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financial information preparers inside and outside the reporting entity, users of that information, and professionals specialized in preparing accounting statements for filing at regulatory bodies, such as the CVM (*Comissão de Valores Mobiliários*), which regulates the capital market in Brazil, and the SEC.

The sample was composed using convenience sampling and obtained from the following sources: (a) the list of accounting services companies affiliated with the Union of Accounting Services Companies and Consulting, Advisory, Information, and Research Companies in the State of São Paulo (SESCON-SP). This association was chosen as it is composed of preparers of accounting information; (b) the list of members of the National Association of Finance, Business Administration, and Accounting Executives (ANEFAC), which was chosen for its representativeness in various Brazilian states and as it is composed of preparers and users of accounting information; (c) professionals from companies specialized in preparing information in XBRL for filing at the SEC, selected from the website www.Xbrlcloud.com; (d) professionals responsible for the financial information of non-US companies filed at the SEC between 2013 and 2015; and (e) the list of Curriculum of financial analysts, that is, financial information users, selected from the website of the company Catho (www.catho.com.br), a specialist in relocating professionals and advising companies.

The technique used for the data collection in this stage of the research was the application of a survey, using Google Docs. The survey was composed of four groups of questions: (a) identification of the respondent; (b) perception of the ease of use of an XBRL file for the company or professional preparing it; (c) perception of the ease of use of reports with interactive and standardized data for the financial information user; and (d) perception of utility or effect of the availability of reports with interactive and standardized data for the reporting entity.

The first group of questions (identification of the respondent) was composed of closed and open questions for the cases in which the respondents could complete information related to "others" (report they prepare, GAAP, role in the company, country of origin of the company they work at, and country where they work) and for the numerical fields for entering their age and time working in the role.

The second group of questions relates to the perception of ease of use of an XBRL file for the company or professional preparing it, as according to Table 2, in which the questions of this group are listed, as well as their theoretical basis. The group is composed of statements and the respondents were asked to verify their agreement with them using a scale from 0 to 10.

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Table 2

*Perception of ease of use of an XBRL file for the company or professional preparing it:
Variables and Theoretical Basis*

Question	Variable	Theoretical Basis
Ease of preparing XBRL files.	EASIER_P	TDI (Rogers, 2003); TAM (Legris et al., 2003); TRA (Fisbeinh & Ajzen, 1975).
Costs of preparing XBRL files.	CHEAPER_P	TDI (Rogers, 2003); TAM (Legris et al., 2003); TRA (Fisbeinh & Ajzen, 1975).
Errors in the preparation of XBRL files.	LESSERR_P	TDI (Rogers, 2003); TAM (Legris et al., 2003); TRA (Fisbeinh & Ajzen, 1975).
Use of the entity's own ERP (Enterprise Resource Planning) in the preparation of XBRL files.	ERP_P	TDI (Rogers, 2003); TAM (Legris et al., 2003); TRA (Fisbeinh & Ajzen, 1975).
Ease of learning to prepare XBRL files.	LEARN_P	TDI (Rogers, 2003); TAM (Legris et al., 2003); TRA (Fisbeinh & Ajzen, 1975).
Flexibility of XBRL files when used in other software.	FLEXIBLE_P	TDI (Rogers, 2003); TAM (Legris et al., 2003); TRA (Fisbeinh & Ajzen, 1975).
Ease of interaction with XBRL files.	UNDERSTAND_P	TDI (Rogers, 2003); TAM (Legris et al., 2003); TRA (Fisbeinh & Ajzen, 1975).

Source: Elaborated by the authors.

Only the professionals who work in companies that report and prepare financial information for the market or professionals who provide a service in the preparation of information for the market and for filing at regulatory bodies and who also know the XBRL language had access to these questions.

Based on the idea that agents have the power of control over their decisions (Fisbeinh & Ajzen; 1975), the questions were designed according to the determinants raised in the theories presented for the decision to use a technology or not. The focus was on verifying what the facilitators and difficulties were of using a new technology, for the professional preparing the files and for the entity reporting to external users.

The third group of questions refers to the perception of utility and ease of use of reports with interactive and standardized data for the financial information user, as according to Table 3. The group is composed of statements and the respondents were asked to verify their agreement with them using a scale from 0 to 10.

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Table 3

Perception of utility and ease of use of XBRL files for the user: Variables and Theoretical Basis

Question	Variable	Theoretical Basis
User access to a greater quantity of data.	X_DATA	TDI (Rogers, 2003); TAM (Legris et al., 2003).
Cost of access to the data in XBRL or interactive data for the user.	X_ACCESS_COST	TRA (Fisbeinh & Ajzen, 1975); TAM (Legris et al., 2003).
Time to process accounting information in XBRL or interactive data for the user.	X_TIME	TRA (Fisbeinh & Ajzen, 1975); TAM (Legris et al., 2003).
Cost of processing accounting information in XBRL or interactive data for the user.	X_PROC_COST	TRA (Fisbeinh & Ajzen, 1975); TAM (Legris et al., 2003).
Ease of obtaining financial information from files in the XBRL format or interactive files.	X_EASY	TRA (Fisbeinh & Ajzen, 1975); TAM (Legris et al., 2003).
Flexibility of use of XBRL or interactive files for the user.	X_FLEXIBLE	TRA (Fisbeinh & Ajzen, 1975); TAM (Legris et al., 2003).
Ease of integration of data in XBRL or interactive data with other software.	X_INTEGRATION	TRA (Fisbeinh & Ajzen, 1975); TAM (Legris et al., 2003).

Source: Elaborated by the authors.

Professionals who know the XBRL language as well as those who do not had access to this group of questions. For the second group, the writing of each statement was modified: the terms "file" and "XBRL format" were substituted by the description "interactive, standardized, and that can be easily imported and analyzed by users."

To prepare the questions in the third group, as well as the Theory of Rational Action (Fisbeinh & Ajzen, 1975) and the Technology Acceptance Model (Legris et al., 2003) were taken into consideration.

The fourth group of questions refers to the perception of utility of the disclosure of accounting-financial information using XBRL files or interactive files for the company reporting it and its effect, as according to Table 4. The group is composed of statements and the respondents were asked to verify their agreement with them using a scale from 0 to 10.

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Table 4

Perception of utility of the disclosure of financial information using XBRL or interactive files for the company reporting it: Variables and Theoretical Basis

Question	Variable	Theoretical Basis
Quality of the analyses of data in XBRL or interactive data for the user.	X_QUALITY	TRA (Fisbeinh & Ajzen, 1975); TAM (Legris et al., 2003).
Ease of separating the relevant from the irrelevant information for the user.	X_RELEVANT	TRA (Fisbeinh & Ajzen, 1975); TAM (Legris et al., 2003.
User efficiency in decision making about investments.	X_EFFICIENCY	TRA (Fisbeinh & Ajzen, 1975); TAM (Legris et al., 2003; Feng & Kim, 2021).
Ease of understanding and analyzing accounting information for the user.	X_UNDERSTAND	TRA (Fisbeinh & Ajzen, 1975); TAM (Legris et al., 2003).
Bureaucracy in the communication of financial information to the market or to the regulatory body.	X_BUREAUCRATIC	TDI (Rogers, 2003); TAM (Legris et al., 2003).
Image of the reporting company in the eyes of the market, investors, market analysts, and credit analysts.	X_IMAGE	TRA (Fisbeinh & Ajzen, 1975); TAM (Legris et al., 2003); Disclosure Theory (Verrechia, 2001).
Perception of transparency of the reporting entity in the eyes of the market, investors, market analysts, and credit analaysts.	X_TRANSPARENCY	TRA (Fisbeinh & Ajzen, 1975); TAM (Legris et al., 2003); Disclosure Theory (Verrechia, 2001).
Reduction of informational asymmetry.	X_ASYMMETRY	TRA (Fisbeinh & Ajzen, 1975); TAM (Legris et al., 2003); Disclosure Theory (Verrechia, 2001).
Ease of the work of analysts to increase business for the reporting entity.	X_BUSINESS	TRA (Fisbeinh & Ajzen, 1975); TAM (Legris et al., 2003); Disclosure Theory (Verrechia, 2001).

Source: Elaborated by the authors.

Professionals who know the XBRL language and those who do not had access to this group of questions. For the second group, the writing of each statement was modified: the terms "file" and "XBRL format" were substituted by the description "interactive, standardized, and easily imported and analyzed by users."

The focus of the fourth group of questions was on verifying the possible positive effects of using the XBRL language for the reporting entity. To prepare the questions, Disclosure Theory (Verrechia, 2001), which foresees the effects of greater transparency and a reduction in informational asymmetry for reporting entities, was taken into consideration. The Theory of Reasoned Action (Fisbeinh & Ajzen, 1975) and the Technology Acceptance Model (Legris et al., 2003) were also used.

The survey was sent to 4,500, in the first quarter of 2016, professionals in two versions, the first in Portuguese and the other in English, for potential respondents in Brazil and abroad. The data were tabulated in Excel and exported to SPSS for subsequent statistical processing and analyses.

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Three hundred and six valid answers were obtained for the survey elaborated. Most of the answers came from elaborators of accounting information who work inside the company for which they report the information (39.9%), followed by elaborators of accounting information who work outside the company (22.9%), consultants (7.8%) who prepare information for filing at the national regulatory bodies or not (CVM and SEC, primarily), analysts of accounting information for investment decisions (10.5%), and other accounting information users, such as auditors and consultants (19.0%).

Most of the professionals are male (78.8%), aged over 40 years old (54.9%), and with at least ten years of service in their current role (56.5%). Moreover, most of the respondents have a management position at the entity where they work (58.8%) or are specialists in the preparation or analysis of financial information (26.1%). It is important to highlight that 30.1% of the respondents know or use files in the XBRL language.

Most of the respondents (60%) prepare financial information for their companies' internal use. It is important to highlight that a respondent can prepare financial information for more than one user or market. Thus, the total reports prepared add up to more than 100%.

According to the data collected, 59.8% of the respondents prepare financial information for Brazil, 37.6% of whom do so for the CVM and 22.2% prepare other publications, such as in newspapers. 18.6% of the respondents prepare information for the US market, of which 9.8% prepare information to file at the SEC and 8.8% do so for other users in the US market. Besides the Brazilian and US market, 9.5% of the respondents indicated that they prepare financial information for other markets.

According to the IFRS (2015), the International Accounting Standards are used by more than 140 countries around the world, in all continents. Consistently, most (92.8%) of the respondents prepare financial information in accordance with IFRS. 7.2% of the respondents prepare financial information in accordance with the US accounting rules, USGAAP.

Most of the responding professionals work in Brazilian companies (68.6%), 13.4% work in European companies, 11.1% work in North American companies, and 6.9% work in companies of other nationalities. It is important to highlight that consultants and advisors who work in Brazilian companies can provide services to multinational companies.

Regarding the country in which the respondents work, 96.1% work in Brazil and 3.9% work in other countries, such as the United States, Canada, Hong Kong, Chile, European countries, and Israel.

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3.2 Data processing

The analysis was conducted based on descriptive statistics. For the analysis of the variables of perception of ease of use of an XBRL file for the company or professional preparing it (variables and theoretical basis described in Table 2), Kruskal-Wallis tests were carried out of differences of means between the three groups of respondents (report consultants, internal preparers, and external preparers of financial information) and between the different profiles of respondents (gender, age, experience, time in the role, position, knowledge or use of the XBRL language, report they prepare, GAAP they use, country of origin of the company, and country where they work). The p-values lower than 0.05, or 5%, indicate that the means of the groups analyzed do not have significantly equal means; that is, they have statistically different perceptions regarding the questions presented.

For the analysis of the variables of perception of ease of use and utility of XBRL or interactive files for the users described in Table 3, as well as the variables of perception of utility of the disclosure of financial information using XBRL or interactive files for the reporting company, as according to Table 4, Kruskal-Wallis tests were carried out of differences of means between the five groups of respondents (report consultants, internal preparers, external preparers, analysts, or other users). For the analysis of the differences of means between the different profiles of respondents (gender, age, experience, time in the role, position, knowledge or use of the XBRL language, report they prepare, GAAP they use, country of origin of the company, and country where they work) the Mann-Whitney and Kruskal-Wallis tests were applied. The p-values lower than 0.05, or 5%, indicate that the means of the groups analyzed do not have significantly equal means; that is, they have statistically different perceptions regarding the questions presented. In addition, the same difference of means tests were repeated, considering only the answers of the professionals who know or use financial information available in XBRL files, to carry out a comparative analysis in relation to the opinion of all the respondents.

4 ANALYSIS AND DISCUSSION OF THE RESULTS

4.1 Perception of ease of use of an XBRL file for the company or professional preparing it

The first group of questions was answered by professionals who prepare financial information or by professionals who work in entities that do so and, moreover, know the XBRL

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language (65 respondents), as the questions refer to the facilitators for compiling files using this technology. The perception of these characteristics by the respondents is presented in Table 5.

Table 5

Perception of ease of use of an XBRL file for the company or professional preparing it and Kruskal-Wallis test per groups of respondents

	Report Consultant			Internal Elaborator			External Elaborator			Total			Kruskal-Wallis	
Variable	**Mean**	**Mod**	**SD**	**Mean**	**Mod**	**SD**	**Mean**	**Mod**	**SD**	**Mean**	**Mod**	**SD**	**Chi-Square**	**p-value**
EASIER_P	2.7	2	1.6	5.58	7	2.9	6.06	7	2.2	5.26	7	2.8	10.4	0.01
CHEAPER_P	5.5	7	1.9	5.61	7	2.8	6.06	5	2	5.73	7	2.5	0.235	0.89
LESSERR_P	4.5	3	2.8	5.39	5	2.8	6.65	7	2.1	5.58	5	2.7	3.948	0.14
ERP_P	3.4	3	2.5	4.68	0	3.8	3.18	0	3.5	4.09	0	3.6	2.579	0.28
LEARN_P	5.7	6	3	5.05	6	2.4	6.29	7	2.4	5.48	7	2.5	3.171	0.21
FLEXIBLE_P	6.1	7	2.5	5.74	8	2.7	6.71	5	2.4	6.05	8	2.6	1.096	0.58
UNDERSTAND_P	4.7	5	2.8	6.05	8	2.7	6.53	7	1.8	5.97	8	2.6	3.217	0.2

Source: Data from the research.

The questions referring to ease of preparing XBRL files, lower costs, fewer errors (Riccio et al., 2006; Ahrendt, 2009; Enachi, 2013), use of the ERP in their preparation, ease of learning, flexibility, and ease of understanding the data in the files relate to the relative advantage explained by Venkatesh and Davis (2000) and Rogers (2003) and to comparability (Rogers, 1981, 2003).

In the possible event of an obligation to use this type of file in the Brazilian market, the professionals who prepare financial information in the companies would have a positive view. The foreign professionals who actually prepare financial information in XBRL for filing at regulatory bodies have a more critical perception in relation to the use of the technology than those who prepare the companies' financial information, whether they are Brazilian or not (p-value of 0.01). These consultants do not recognize that preparing this type of file is easier than preparing a traditional file in another format, that the cost is lower, or even that there are fewer errors in the preparation process.

The errors committed in the preparation of financial information in XBRL or interactive files do not differ in quantity compared to the preparation of files in traditional formats. Thus, there is support for the idea that in the possible event of an obligation to use this type of file in the Brazilian market, there would be an initial implementation and learning cost in the companies, but no additional cost over the course of the years.

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In most cases, the company's ERP is not suitable for automatically generating the financial information files that will be reported in XBRL and some other treatment or even manual preparation of the file is needed, but there is no relevant difficulty in this process. This is a point of increased complexity (Rogers 1981, 2003) in the process of adopting a technology.

This situation, indicated as common in the research, is surprising, as the companies have prepared XBRL files on a voluntary basis for the SEC since 2005 and obligatorily since 2011. Moreover, many European exchanges have used these files since 2009. Those responsible for preparing information for the Brazilian market, such as for newspaper publications, understand that this process is not as complex as preparing information for national and international regulatory bodies.

Regarding the question relating to the perception of ease of learning to prepare XBRL files or interactive data, related to the characteristics of complexity and observation of benefits (Rogers, 2003), it is understood that the importing and use of these files in other software should be facilitated, according to the characteristic of relative advantage as explained by Venkatesh and Davis (2000) and Rogers (2003).

4.2 Perception of ease of use and utility of an XBRL file or interactive files for users

There now follows an analysis of the survey answers related to the ease of searching, acquiring, and using interactive financial information files or XBRL files for the users of that information (Arnold et al., 2012). The first group of questions refers to accessing and processing the financial information the companies make available, per each group of respondents.

Table 6

Access to companies' financial information: per group of respondents and Kruskal-Wallis test

Variable	Report Consultant		Internal Elaborator		External Elaborator		Analyst		Other Users		Total		Kruskal-Wallis	
	Mean	SD	Mean	SD	Mean	SD	Mean	SD	Mean	SD	Mean	SD	Chi-Square	p-value
X_DATA	8.3	2	7.3	2.75	8.24	2.19	7.8	2.9	8.5	1.9	7.9	2.5	11.932	0.018
X_ACCESS_COST	7.5	2	7.24	2.86	8.13	2.19	7.7	2.4	8.2	2	7.7	2.5	6.952	0.138
X_TIME	7.7	2	7.55	2.55	8.16	2.29	8.1	2.2	8.7	1.8	8	2.3	13.416	0.009
X_PROC_COST	6.5	2.6	5.97	2.55	6.12	2.6	6.8	2.5	7.5	1.7	6.4	2.4	5.321	0.256

Source: Data from the research.

In the first question, the idea is that the format of the file would facilitate the user in capturing a greater quantity of data, according to the characteristic of relative advantage (Rogers, 2003).

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The professional who is hired to prepare information for filing at regulatory bodies, as well as user analysts of that information, understand that they have access to a greater amount of data, but the opinion of this group of respondents has a lower mean (7.3 and standard deviation of 2.75) than the general mean (7.86 and standard deviation of 2.48). The respondents understand that the cost of processing data in XBRL is a little lower than that of traditional files, but the processing time is a greater differential. For this question, as according to Table 6, with a p-value of 0.018, it is confirmed that the means between the groups (report consultants, internal preparers, external preparers of financial information, analysts, and other users) are significantly different.

Table 7

Ease of use of companies' financial information: per group of respondents and Kruskal-Wallis test

Variable	Report Consultant		Internal Elaborator		External Elaborator		Analyst		Other Users		Total		Kruskal-Wallis	
	Mean	SD	Mean	SD	Mean	SD	Mean	SD	Mean	SD	Mean	SD	Chi-Square	p-value
X_EASY	6.8	2.3	5.7	2.9	5.9	2.9	6.4	2.8	6.9	2.5	6.1	2.8	8.515	0.07
X_FLEXIBLE	8.3	2	7.1	3.1	8.2	2.2	7.7	2.6	8.3	2.1	7.7	2.7	6.842	0.14
X_INTEGRATION	7.1	2.1	7.1	2.8	7.8	2.4	7	2.7	8.3	1.6	7.5	2.5	9.301	0.05

Source: Data from the research.

According to the professionals who answered the survey, obtaining financial information from XBRL files is easier than from traditional files, but the differential lies in the flexibility and integration of these data with other software, which corroborates with Blankespoor (2012); Blankespoor (2019) and XBRL International (2023).

With the use of XBRL or interactive files the need to re-enter data is expected to be eliminated or reduced, which would increase accessibility to the data, as there is interoperability; that is, the data can be easily copied to different programs or to files in a different format (Riccio et al., 2006; Pinsker & Li, 2008; Bonsón et al., 2009, 2009b; Dunne et al., 2013; Loukkas et al, 2022).

It is important to highlight that this expected ease of use of the interactive and standardized information would be a facilitator of the adoption of the XBRL technology in Brazil. The information filed at the CVM by open companies in Brazil is already reported in a standardized format in the *Empresas.Net* system.

On the other hand, the professionals who actually work with XBRL files are less optimistic in relation to the ease of use of these files for users than the professionals who know

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the technology. Given this difference in perception, after the analysis of the general answers of this survey, the answers of the professionals who know or use the XBRL technology are analyzed separately.

4.3 Perception of the effects of using XBRL or interactive files for the reporting entity

There now follows an analysis of the answers obtained regarding the effects of the use of financial information in an interactive format by the users in their financial analyses and in the decision-making process. According to Arnold et al. (2012), the process of combining information involves assimilating that information and the decisions together in order to evaluate the company's performance.

The XBRL language has the potential to make that process more efficient. The ease of grouping and analyzing the information and of communicating the different information in common formats may improve information flows and the comparability of data between companies (Riccio et al., 2006, Badwin & Trinkle, 2011, Henderson, 2012, Dunne et al., 2013, XBRL International, 2023; Silva e Cerqueira, 2020). According to Liu et al. (2014), XBRL should evolve into a global standard of data for financial reports with the potential to change the way decisions are made.

Table 8

Effect of the use of companies' financial information: per group of respondents and Kruskal-Wallis test

Variable	Report Consultant		Int. Elaborator		Ext. Elaborator		Analyst		Other Users		Total		Kruskal-Wallis	
	Mean	SD	Mean	SD	Mean	SD	Mean	SD	Mean	SD	Mean	SD	Chi-Square	p-value
X_QUALITY	7.08	2.89	7.48	2.90	8.09	2.03	7.94	2.17	8.34	1.90	7.80	2.49	4.18	0.382
X_RELEVANT	7.42	1.86	7.26	2.82	7.77	2.31	7.00	2.85	7.76	2.25	7.46	2.54	3.16	0.531
X_EFFICIENCY	7.25	2.27	7.31	2.83	8.00	2.33	7.44	2.47	8.05	1.87	7.62	2.49	5.02	0.285
X_UNDERSTAND	7.88	2.23	7.84	2.71	8.44	2.01	8.09	2.19	8.29	1.91	8.09	2.33	2.54	0.638

Source: Data from the research.

According to Table 8, with a mean of 7.80 and standard deviation of 2.49, the respondents understand that there is an improvement in the quality of users' financial analyses, when data in XBRL or which are interactive and standardized are used.

According to Tang et al. (2013), the visualization and interactivity affect decision-maker precision and confidence. XBRL files can be visualized differently according to the user's preference, facilitating the decision-making process.

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The answers to the second question indicate, with a mean of 7.46 and standard deviation of 2.54, that the use of financial information in the XBRL format or interactive and standardized data is facilitated, making it easier to separate relevant from irrelevant information disclosed by the companies that report it. According to Vasarhel et al. (2012) and Loukkas (2022), the use of the XBRL language has the potential to increase the accessibility to and availability of accounting-financial information and enable users to search for and obtain relevant information more efficiently.

In relation to the increased user efficiency in investment decision making, when financial information in XBRL or interactive and standardized files are used, the professionals answering the survey agree with this statement, with a mean of 7.62 and standard deviation of 2.49. Moreover, the respondents agree that files in the XBRL format or interactive and standardized files facilitate the understanding of the financial information that is being reported by the companies and therefore facilitate the analysis of that information (mean of 8.09 and standard deviation of 2.33).

The means of the answers between the groups of respondents are not significantly different for any of the questions when the Kruskal-Wallis test is carried out (p-values: 0.382. 0.531. 0.285, and 0.638, respectively, as according to Table 8).

There now follows an analysis of the answers to the last group of questions: the effect of the availability of XBRL or standardized and interactive files for the reporting entity.

Table 9

Effect of the availability of XBRL and interactive files for the reporting entity

Variable	Report Consultant Mean	SD	Int. Elaborator Mean	SD	Ext. Elaborator Mean	SD	Analyst Mean	SD	Other Users Mean	SD	Total Mean	SD	Kruskal-Wallis Mean	SD
X_BUREAUCRATIC	5.8	3.3	5.74	2.5	6.1	3.04	6.1	2.6	7.2	1.4	6.2	2.6	3.73	0.44
X_IMAGE	7.6	2.1	6.86	2.9	7.8	2.31	7.4	2.8	8	2.2	7.4	2.6	8.299	0.08
X_TRANSPARENCY	8	1.8	7.09	2.7	7.8	2.34	7.4	2.7	8.1	2.3	7.6	2.5	8.892	0.06
X_ASYMMETRY	8.1	1.8	7.28	2.6	8	2.17	6.8	3	8	2.3	7.6	2.5	8.075	0.09
X_BUSINESS	7.1	2.5	6.89	2.7	7.5	2.26	6.1	2.9	7.2	2.6	7	2.6	6.203	0.18

Source: Data from the research.

In the first question, it was verified whether the communication of financial information to the market or to the regulatory body is less bureaucratic when files in the XBRL format or interactive files are used (Ahrendt, 2009; Badwin & Trinkle, 2011; Silva e Cerqueira, 2020). The mean agreement was 6.15 and the standard deviation was 2.55.

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The second question verifies the agreement with the statement that the provision of financial information in the XBRL format or interactive data improves the image of the company reporting to the market, investors, and analysts. According to Moore and Benbasat (1991), the degree to which the use of the innovation is perceived as improving the entity's image is one of the characteristics that influence the adoption of a technological innovation and can be understood as an aspect of Rogers's (2003) relative advantage characteristic. The mean for this question was 7.41 and the standard deviation was 2.59.

Next, it is questioned whether the provision of financial information in the XBRL format or interactive data increases the perception of transparency of the reporting entity in the eyes of the market and, also, whether this factor supports a reduction in informational asymmetry (Yoon et al., 2011). The reduction in informational asymmetry provides a rational basis for choosing the efficient disclosure and utility of accounting information.

Moreover, the notion of increasing market liquidity by reducing informational asymmetry is consistent with the role of accounting (Verrechia, 2001). Debreceny and Gray (2001) understand that the idea of facilitating the communication of financial information to the market is important and that the XBRL technology, despite not being revolutionary, is one more step toward increasing the transparency of the reporting entities. The answers to these questions have the highest means for the group of questions (7.56 and 7.59, respectively).

To finalize, it is asked whether the provision of financial information in the XBRL format or interactive files facilitates the work of analysts and users, increasing business for the reporting entity (Blankespoor, 2012; Blankespoor, 2019; Efendi et al., 2014; Feng & Kim, 2021). The mean agreement was 7.02 and the standard Efendi et al., 2014; Feng & Kim, 2021). The mean agreement was 7.02 and the standard deviation was 2.61.

Next, the cases for which there are significant differences between the means of the answers given are presented per respondent characteristic.

For the question about the reduction in bureaucracy in the communication of financial information to the market or to the regulatory body when files in the XBRL format or interactive files are used, there was no significant difference between the means.

The professionals who know or use XBRL files have a slightly more positive perception than the total for the respondents, in relation to the improvement of the company's image (mean of 5.84, general mean of 7.4, and p-value of 0.000), increased transparency (mean of 6.11, general mean of 7.56, and p-value of 0.000), and reduction in informational asymmetry (mean of 6.42, general mean of 7.59, and p-value of 0.000), when interactive and standardized files are used. Given this difference of opinion, after the analysis of the general answers for the data

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collection instrument, the answers of the professionals who know and use the XBRL technology are analyzed separately.

Similarly, the professionals who report to the SEC have a slightly less positive perception regarding the improvement of the company's image (mean of 6.43, general mean of 7.4, and p-value of 0.007), increased transparency (mean of 6.5, general mean of 7.59, and p-value of 0.002), reduction in informational asymmetry (mean of 6.73, general mean of 7.59, and p-value of 0.0018), and increased business (mean of 5.73, general mean of 7.02, and p-value of 0.002).

To finalize, the companies that report to the US market have a slightly less positive perception regarding the reduction in informational asymmetry (mean of 6.85, general mean of 7.59, and p-value of 0.027). The companies that report to the Brazilian market have a more positive opinion regarding the improvement in image (mean of 7.5, general mean of 7.4, and p-value of 0.000) and increased transparency (mean of 7.82, general mean of 7.56, and p-value of 0.000), when the company reporting makes available interactive and standardized files of its financial information.

5 CONCLUDING REMARKS

The general aim of this study was to verify what the perceived benefits and difficulties are in using the XBRL language for communicating financial information to the market. Thus, the determinant factors (according to TRA and TAM) that lead companies to adopt the technology were studied, as well as the benefits achieved by the adopters of the XBRL language, and the benefits expected by those not yet adopting it.

We analyzed the answers of Brazilian and foreign professionals involved with preparing financial information for filing at regulatory bodies and stock exchanges, the preparers of financial information in companies, and the users of that information, that is, investors and analysts. The questions regarding the perception of ease of use of an XBRL file or interactive and standardized files for the company or professional preparing the file were only answered by professionals who know or use this technology.

The professionals who prepare financial information specifically for filing at regulatory bodies and stock exchanges, that is, the professionals who actually prepare XBRL files, understand that this preparation and the interaction itself with the XBRL files are not easy. According to Diffusion of Innovation Theory (Rogers, 1983), complexity is one aspect that would make the adoption of a technology difficulty. The answers, therefore, corroborate this

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theory used. Moreover, the use of that technology does not reduce the errors in the preparation of the files, unlike in the bibliography compiled regarding this question (Riccio et al, 2006; Pinsker & Li, 2008; Ahrendt, 2009; Badwin & Trinkle, 2011; Enachi, 2013).

On the other hand, the same professionals indicate that the costs of preparing XBRL files are no higher than for preparing other types of files, and also that the language in itself is not hard to learn. Thus, a possible adoption of the XBRL language in Brazil would not have an impact in terms of significantly increasing costs for the companies, after the learning period. This concern is consistent with the idea of cost as a restrictive factor in the Framework (CPC, 2011), as the evaluation of the cost and benefit of the accounting-financial information is taken into consideration by the regulatory body and reporting entities.

The most positive point indicated in relation to the preparation of XBRL files is the flexibility for their use in other software (Riccio et al, 2006; Pinsker & Li, 2008; Bonsón et al., 2009, 2009b; Dunne et al., 2013; Loukkas, 2022; Silva e Cerqueira, 2020), after they are actually prepared and sent, since in the preparation process itself the reporting entity's own ERP is not normally used. These aspects can be indicated as a relative advantage (Rogers, 1983), in relation to the files currently used in Brazil, or even of perceived ease of use (Venkatesh & Davis, 2000), as well as compatibility (Rogers, 1983), with greater transparency given by the adoption of IFRS in the country (CPC, 2011).

The preparers of accounting information and users of that information have a slightly more positive position in all the aspects indicated. It is important to highlight that relevant and reliable financial information enables investors and creditors to compare companies' performance, evaluating the risks and returns of an investment opportunity and which options channel resources more effectively (Palepu & Healy, 2007).

In relation to the perception of utility and ease of use of XBRL or interactive and standardized files, the respondents generally agree that these files have a relative advantage (Rogers, 1983) when compared to other formats, such as PDF or HTML, for example.

The research confirmed that users can have access to a greater quantity of data, as according to the bibliography complied (Riccio et al, 2006; Pinsker & Li, 2008; Bonsón et al., 2009, 2009b; Dunne et al, 2013), as well as the cost of access to the data in XBRL being lower when compared to other types of files (Blankespoor, 2012; Blankespoor, 2019; XBRL International, 2023). In addition, the time and cost of processing accounting-financial information in XBRL is lower compared to other types of files (Asatiani, 2012).

According to Disclosure Theory (Verrechia, 2001; Dye, 2001), information is a costly component of the decision-making process and the reduction in the cost of obtaining it would

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be positive in terms of the increased transparency and reduction of information asymmetry (Ragothaman, 2012).

According to the research carried out, it was also found that there is greater ease of obtaining financial information, greater flexibility, and greater ease in the integration of data when XBRL files are used ((Riccio et al, 2006; Pinsker & Li, 2008; Bonsón et al., 2009, 2009b; Badwin & Trinkle, 2011; Henderson, 2012; Dunne et al., 2013; XBRL International, 2023; Silva e Cerqueira, 2020).

According to Graeml (2003) e Weill e Ross (2020), the benefits derived from the adoption of a technology are a function of the actual consequence of its adoption. Thus, the more a technology is adopted, the more it is used, the more can be learned about it (Singh & Singh, 2022), and the more it will be developed and improved, since it will be better understood. Moreover, as the adoption of the technology increases, other technologies and products will come to support it. Therefore, the observability and visibility of its benefits (Rogers, 1983) tend to increase.

In conclusion, TRA, TAM, and the Diffusion of Innovation are corroborated when studying the adoption of the XBRL language in Brazil. On the one hand, adoption would increase companies' transparency, which is an essential objective in this century, without significantly increasing costs for companies. Therefore, one of the contributions to the theory is that, despite the discourse on the importance of transparency in our century, companies and regulatory bodies do not adopt the available technology to effectively put this idea into practice.

The research also shows that there is a tendency for the quality of the analyses of financial information in XBRL to improve, since it is easier to separate relevant from irrelevant information and understand the information reported. Thus, it is inferred that user efficiency in decision making about investments is increased (Hodge et al., 2004; Henderson, 2012; Alles & Piechocki, 2012; Alles & Debreceny, 2012; Arnold et al., 2012; Enachi, 2013; Scarlata, 2009; Feng & Kim, 2021).

In relation to the perception of utility of the disclosure of financial information using XBRL or interactive and standardized files for the reporting entity, the research shows that the market has a perception of greater transparency in relation to the company, that this can improve its image (Moore & Benbasat, 1991), and it collaborates with the reduction in informational asymmetry, but not to the point of increasing the entity's business solely as a result of this. The research findings corroborate the works of Yoon et al. (2011), Prado (2012), and Yoon (2014).

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To conclude by answering the research question, the main incentives in the adoption of the XBRL language are the expected benefits for the users of the financial information (accessing a greater amount of information at a lower cost, it is an easier-to-process way, as well as to improving the decision-making process), here is the intention to use the XBRL for preparers and users. It would facilitate the adoption of the XBRL in the country. Despite this, companies will only increase transparency when it is mandatory and required by regulatory bodies.

AUTHORS' CONTRIBUTIONS

Contribution	CMSG	ELR	MCPG
Contextualization	x	x	x
Methodology	x	x	x
Software	---	---	---
Validation	x	x	---
Formal Analysis	x	x	x
Investigation	x	---	x
Resources	x	x	x
Data curation	x	x	x
Original	x	---	---
Revision and editing	x	---	---
Viewing	x	---	---
Supervision	x	x	---
Project Management	x	x	---
Obtaining funding	---	---	---

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