



Information systems and technology contributions applied to tax accounting: Bibliometric analysis

Sistemas da informação e as contribuições tecnologias aplicadas a contabilidade fiscal: Análise bibliométrica

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ABSTRACT

This study aims to perform a bibliometric analysis on the intersection between Information Systems and Tax Accounting, focusing on the main applied technologies. Bibliometric research techniques were used to examine the articles published in this area. The research covered the period from 2013 to 2023 and included the analysis of articles in the Google Scholar, Scielo and Scopus databases. Inclusion criteria were established in the methodological process to support the selected studies. The results obtained provide a comprehensive overview of scientific productions in this field, including the number of publications, research trends and topics addressed. In addition, the main technologies applied to Tax Accounting and the specific contributions to this area were identified. The analysis of the selected articles also allowed identifying research gaps and providing insights into the methodological approaches used. These findings contribute to the advancement of knowledge in the field of Information Systems applied to Tax Accounting. This study is relevant for researchers, practitioners and students interested in the interaction between Information Systems and Tax Accounting. The results can be used to guide future research and direct the development of technologies that improve accounting processes in the tax context.

Keywords: Bibliometric analysis, Accounting information systems, Tax accounting, Technological, Accounting management.

1 INTRODUCTION

Accounting plays a fundamental role in the success of companies, providing accurate and reliable information about their financial and equity situation (Ferreira, Santos, Mazier, 2019; Sousa, Oliveira, 2018). In recent years, technology has assumed an increasingly important role in this field, allowing the automation of processes, the generation of information in real time and the reduction of accounting errors and fraud (Ogawa, Bolonhesi, Bertóli, 2021; Keocheguerian, 2021).

Given this scenario, the research question that guides this study arises: what are the main themes addressed in articles in the area of Accounting Information Systems and their technological contributions in support of tax accounting? The objective of this study



is to perform a bibliometric analysis of articles in the area of Accounting Information Systems and their technological contributions in support of tax accounting. To this end, articles will be selected from specialized journals and relevant databases, which will be analyzed using bibliometric techniques.

The scope of the research was defined from the selection of articles published in renowned scientific journals in the accounting area. We used the Scielo, Web of Science, Scopus and Google Scholar databases to select the articles, which were chosen based on inclusion and exclusion criteria pre-defined in the methodology.

The relevance of this study lies in the possibility of identifying the main trends and themes addressed in articles in the area, as well as the main contributions of accounting information systems to tax accounting. In addition, this study can contribute to the improvement of accounting processes, through the more efficient and effective use of accounting information systems in tax accounting (Barcelos, 2022; Andrade, Mehlecke, 2020). These contributions can bring significant benefits to companies, such as cost reduction, increased quality of accounting information and greater transparency in accounting processes (Freire, Albuquerque Filho, 2022; Colli, Telles, Marques, 2020).

In this context, accounting information systems have proven to be valuable tools for tax accounting, allowing efficient and secure recording and control of tax transactions (Moraes, 2021; Santos, Tabosa, 2020). However, there is still much to be explored about the technological contributions of accounting information systems to tax accounting, and it is in this sense that this research is justified (Ribeiro, Lima, 2020; Zluhan, Petri, Rosa, 2017).

Therefore, this study is justified due to the relevance of the theme and the contributions that can be obtained for the accounting area (Moraes, 2021; Santos, Tabosa, 2020; Ribeiro, Lima, 2020; Zluhan, Petri, Rosa, 2017). At the conclusion of this research, it is expected to achieve the proposed objectives and contribute to the advancement of knowledge in the area of Accounting Information Systems and their technological contributions to tax accounting.

This structure in sections will provide a clear and logical organization of the work, facilitating the understanding and monitoring of the study on the bibliometric analysis of articles in the area of Information Systems and the main technologies applied to Tax Accounting.



In addition to this Introduction, this article is structured as follows: topic 2 presents the theoretical foundation; topic 3 describes the methodology; topic 4 highlights the results found, finally, in topic 5, the final considerations are made.

2 THEORETICAL BACKGROUND

2.1 ACCOUNTING

Accounting is a science that covers the recording, analysis and interpretation of an entity's financial and economic transactions. It encompasses the collection, classification and measurement of financial information, resulting in financial statements that provide a clear picture of an organization's financial performance.

In addition, accounting plays an important role in decision-making, providing relevant information to managers, investors and other users, and is subject to principles and standards that ensure the transparency and reliability of accounting information. In short, accounting is essential for the control, management and accountability of financial activities, promoting transparency and facilitating decision-making.

According to Oliveira and Nagatsuka apud Feital (2000, p.19), some researchers claim that practices related to account control date back more than a thousand years before Christ. For others, these concerns are as old as humanity itself. Since ancient times, kings, pharaohs, merchants, farmers, among others, used recording techniques to measure, evaluate and control their personal assets, which can be understood as the beginning of accounting as it is known today.

According to Fabretti (2009, p.7), accounting is the science that studies, registers and controls equity, as well as the changes that occur in it due to administrative acts and facts. At the end of each fiscal year, accounting demonstrates the result obtained and the economic and financial situation of the entity.

In addition, Padoveze (2008) defines accounting as the set of theories, concepts and techniques used to control a mass of assets.

Accounting plays a key role in providing accurate and reliable financial information to businesses. With the advancement of technology, accounting has benefited significantly from the use of accounting information systems, which automate routine tasks and enable greater efficiency in accounting operations.



2.1.1 Tax accounting

Tax accounting is a branch of accounting that is dedicated to the study and application of tax rules and regulations in the context of business activities. Its main objective is to ensure compliance with tax obligations by ensuring that taxes are properly calculated and paid by organizations.

In this sense, tax accounting covers the calculation and recording of taxes, the preparation of tax returns, the analysis and interpretation of tax legislation, as well as tax planning to reduce tax burdens in a lawful manner. These activities are essential to ensure compliance with tax legislation and avoid legal and financial problems.

In addition, tax accounting plays a relevant role in business decision-making by providing pertinent information on the financial and tax impact of the operations and transactions carried out by the company. This information assists in the efficient management of business resources and allows for a more accurate analysis of financial results.

In the context of the main areas of activity of tax accounting, we highlight the calculation and control of taxes on profit, such as Income Tax and Social Contribution on Net Profit, as well as taxes on the purchase, sale and provision of services, such as the Tax on Circulation of Goods and Services (ICMS) and the Tax on Services (ISS). These taxes represent a significant part of companies' tax obligations and require special attention in tax accounting.

Renowned authors have contributed to the theoretical and practical development of tax accounting, providing valuable insights into issues related to tax aspects (RIBEIRO, 2018; SILVA, 2015; SPAGNOL, 2012). Ribeiro, "Contabilidade Tributária" (2018), addresses the main aspects of tax accounting, including tax legislation, tax assessment, tax controls and ancillary obligations. Silva, author of the book "Tax Accounting: Theory and Practice" (2015), explores the theoretical and practical concepts of tax accounting, including the incidence and calculation of taxes, tax bookkeeping, tax obligations and tax planning techniques. Spagnol, author of the book "Accounting and Taxation: An Interdisciplinary Approach" (2012), presents an integrated analysis between accounting and taxation, highlighting the tax implications in the financial statements and tax management strategies.

These works provide a solid theoretical basis for understanding the fundamental aspects of tax accounting, taking into account specific laws and regulations.



2.1.2 Accounting information system

Information technology and information systems have been increasingly important for the management and accounting of companies, as highlighted by Martins et al. (2012). These authors argue that the use of these tools can lead to significant improvements in accounting processes, such as reducing errors and increasing efficiency.

A bibliometric analysis conducted by Ceolato (2019) shows that technological contributions in accounting information systems have been widely studied in the literature. Among the emerging technologies that have been explored in accounting, artificial intelligence, blockchain and the internet of things stand out.

De Oliveira and Malinowski (2016) emphasize the importance of information technology in management accounting, highlighting that the use of accounting information systems can lead to a better understanding of accounting data and more efficient decision-making. In addition, the use of business intelligence (BI) tools can provide valuable information for strategic decision-making.

Silva et al. (2017) analyzed the influence of the accounting information system as an instrument to support the generation of reliable information by the controllership. The authors emphasize that the use of these tools can lead to greater accuracy and reliability of accounting information, which is essential for business decision-making.

Novaes and Braga (2020) discuss technological innovations in accounting information systems, highlighting that these technologies are transforming accounting and bringing new challenges to accounting professionals. The authors argue that the use of accounting information systems can lead to greater efficiency and accuracy in accounting processes, in addition to allowing better communication between the various departments of the company.

Torres et al. (2012) highlight the importance of information and communication technology as a competitive strategy in supply chain management. The authors argue that the use of these technologies can lead to greater efficiency in supply chain management, which can lead to a reduction in costs and an increase in the company's competitiveness.

As pointed out by Smith et al. (2020), the adoption of accounting information technologies brings a number of contributions to tax accounting. These contributions include generating more accurate and detailed reports, improving the management of accounting data, and facilitating the analysis and interpretation of financial information.



2.2 BIBLIOMETRIC STUDIES INFORMATION SYSTEM - (2013 -2023)

Bibliometrics is a statistical and quantitative research methodology that aims to present indices of production and dissemination of scientific knowledge (Quevedo-Silva et al., 2016). Studies using this methodology are often justified by enabling the investigation of the level of propagation of a particular subject in the scientific environment, detecting the development of knowledge in a specific area, its discoveries, strengths and, especially, its weaknesses (Schmitz et al., 2013; Salles et al., 2016).

This technique, as a scientific method for analyzing the frequency of scientific communication on a subject over time, incorporated principles during its development. Machado Junior et al. (2016) mention the presence of three laws in bibliometrics: Lotka's Law, Bradford's Law and Zipf's Law, which deal, respectively, with aspects related to authors, journals and most used words.

Lotka's Law suggests that a small number of researchers produce a significant amount of work in an area of knowledge, while a large number of researchers produce a smaller amount of work. Bradford's Law proposes the existence of a restricted core of journals that address a given subject more comprehensively. And Zipf's Law indicates that keywords related to a given subject are repeated much more frequently than other words present in the text, resulting in an ordered list of terms on the subject (Machado Junior et al., 2016; Mello et al., 2017). However, with the development of the application of this method, it was observed that the patterns suggested by these laws are not always verified (Machado Junior et al., 2016).

Considering the importance of bibliometrics for the diagnosis of the development of production in a given area of knowledge, other authors have already carried out studies with the objective of presenting the profile of research on Information Systems. Chart 1 highlights some of these studies in the Google Scholar, Scielo and Scopus databases.

Table 1- Bibliometric studies in information systems

Author (s) / year	Objective	Methodology	Source
Silva et al. (2014)	Analyze the scientific production in Information Systems	Bibliometric analysis and literature review	Electronic Journal of Information Systems
Pereira et al. (2016)	Identify the main research trends in Information Systems	Bibliometric analysis and literature review	Perspectives on Management & Knowledge
Santos et al. (2017)	Analyzing scientific collaboration in Information Systems	Bibliometric analysis and co-authorship analysis	Journal of Management and Innovation



Almeida et al. (2018)	Map the emerging themes in Information Systems	Bibliometric analysis and co-citation analysis	Brazilian Journal of Business Management
Lima et al. (2019)	Investigate the methodological approaches in Information Systems research	Bibliometric analysis and literature review	Informatics in Education: Theory & Practice
Costa et al. (2021)	Analyze the scientific production on emerging technologies in Information Systems	Bibliometric analysis and co-citation analysis	Perspectives on Management & Knowledge
Gomes et al. (2022)	Assessing the quality of scientific production in Information Systems	Bibliometric analysis and citation analysis	Management & Technology Magazine
Silva et al. (2014)	Analyze the scientific production in Information Systems	Bibliometric analysis and literature review	Electronic Journal of Information Systems
Pereira et al. (2016)	Identify the main research trends in Information Systems	Bibliometric analysis and literature review	Perspectives on Management & Knowledge
Marques et al. (2014)	Analyze the scientific production in Information Systems in the Brazilian context	Bibliometric analysis and literature review	Electronic Journal of Information Systems (RESI)
Rodrigues et al. (2015)	Identify research trends in Information Systems in Brazil	Bibliometric analysis and literature review	Management and Planning Journal (GeP)
Ribeiro et al. (2017)	Analyze the evolution and main characteristics of studies in Information Systems	Bibliometric analysis, co-citation analysis and co-authorship network analysis	Journal of Administration of UFSM
Carvalho et al. (2018)	To evaluate the quality of studies in Information Systems in the Brazilian context	Bibliometric analysis, citation analysis and thematic content analysis	Journal of Management, Accounting and Economics (Race)
Oliveira et al. (2020)	Investigating scientific collaboration in Information Systems in Brazil	Bibliometric analysis, co-authorship analysis and social network analysis	Perspectives in Information Science
Rocha et al. (2021)	Analyze the scientific production in Information Systems in Brazil in the last 10 years	Bibliometric analysis, co-citation analysis and thematic content analysis	Perspectives in Information Science
Santos et al. (2022)	Identify the main thematic areas of research in Information Systems	Bibliometric analysis, co-citation analysis and thematic content analysis	Revista de Administração de Empresas (RAE)
Marques et al. (2014)	Analyze the scientific production in Information Systems in the Brazilian context	Bibliometric analysis and literature review	Electronic Journal of Information Systems (RESI)
Silva et al. (2014)	Identify the main research topics in Information Systems	Bibliometric analysis, co-citation analysis and thematic content analysis	Journal of Information Systems and Technology Management



Costa et al. (2016)	Map the main trends and perspectives of research in Information Systems	Bibliometric analysis, co-citation analysis and thematic content analysis	Journal of Information Systems and Technology Management
Chen et al. (2017)	Identify the main themes and lines of research in Information Systems and knowledge management.	Bibliometric analysis and co-citation analysis	Decision Support Systems
Xie et al. (2018)	Analyze the evolution and research trends in Information Systems and e-business	Bibliometric analysis, co-citation analysis and thematic content analysis	International Journal of Information Management
Tan et al. (2019)	Identify the main research themes and approaches in Health Information Systems.	Bibliometric analysis and co-citation analysis	International Journal of Medical Informatics
Qiu et al. (2020)	Assess research productivity and trends in Information Systems and artificial intelligence	Bibliometric analysis and co-citation analysis	International Journal of Information Management
Yu et al. (2022)	Analyze international research collaborations in Information Systems	Bibliometric analysis, co-citation analysis and co-authorship network analysis	Journal of Global Information Management

Source: Own elaboration based on the authors cited .(2023)

These studies used different methodologies, such as bibliometric analysis, co-citation analysis, thematic content analysis and co-authorship network analysis, to achieve their research objectives.

2.3 TECHNOLOGIES IN SUPPORT OF THE TAX AREA

Technologies play an increasingly relevant role in supporting the tax area. Authors such as Ogawa, Bolonhesi and Bertóli (2021) and Keocheguerian (2021) highlight the technological contributions to tax accounting, such as the automation of processes, the generation of information in real time and the reduction of accounting errors and fraud. These technologies allow for greater efficiency in the management of tax transactions, compliance with legal obligations and improvement in the quality of reported information.

When considering the intersection between accounting and technology, authors such as Barcelos (2022) and Andrade and Mehlecke (2020) emphasize the importance of the technological contributions of accounting information systems to tax accounting. These contributions include cost reduction, increased quality of accounting information and greater transparency in accounting processes.



In this sense, authors such as Freire and Albuquerque Filho (2022) and Colli, Telles and Marques (2020) emphasize that accounting information systems have proven to be valuable tools for tax accounting, allowing the efficient and secure recording and control of tax transactions.

Therefore, the theoretical foundation of this research covers renowned authors who highlight the importance of accounting, the relevance of accounting information systems and technological contributions in support of the tax area. These references support the understanding of key concepts and provide subsidies for the analysis of articles in the area of Accounting Information Systems and their technological contributions applied to tax accounting.

Table 3 highlights the technologies most applied to tax accounting according to the selected articles.

Table 2 - Technologies most applied to tax accounting

Technology	Classification by Function	Sources
Big data	Process optimization	Oussous, Ahmed, et al (2018); Tsai, Chun-Wei, et al (2015); SAGIROGLU (2013).
Blockchain	Process optimization	Belotti, M., Božić, N., Pujolle, G., & Secci, S. (2019); Xu, M., Chen, X., & Kou, G. (2019) ;Di Piero, M. (2017).
Cloud computing	Process optimization	Andrade (2019); Barros et al (2019); Carvalho (2018); Consyste (2020); Junior and Kuhl (2019); Meu Mundo RH (2019); Pinto et al (2019); Rede Jornal Contábil (2018).
Digital Accounting	Process optimization	Pontes, J. D. O. (2023); Vasconcellos, K. B. D. (2021); Ruschel, M. E., Frezza, R., & Utzig, M. J. S. (2011).
Online Accounting	Process optimization	Frezatti, F., de Aguiar, A. B., de Araujo Wanderley, C., Malagueño, R. (2015);
Artificial Intelligence	Process optimization	DA SILVA, D. R. DA COSTA, D. F., & PIMENTA, A. A (2022); I (Chen et al., 2011; Faúndez-Ugalde et al., 2020; Höglund,(2017).
Open Banking	Process optimization	Vasić, D., Barać, D., & Radenković, M. (2023); Dzhaparov, P. (2020).
Accounting Software	Process optimization	Andrade (2019); Barros et al (2019); Carvalho (2018); Consyste (2020); Dantas (2018); Dutra (2014); Franco et al (2020); Gera et al (2013); Junior and Kuhl (2019); Martins et al (2012); Oliveira et al (2006); Oliveira and Malinowski (2017); Pereira (2013); Pinto et al (2019); Pioner (2011); Rede Jornal Contábil (2018); Santos (2014); Santos et al (2019); Scherer (2017); Silva et al (2017).
Online service	Process optimization	Bridges, J. D. O. (2023)
Cryptoassets	Process optimization	Vencato, D. S. (2022); Vasconcellos, K. B. D. (2021);Gazzetta, C. (2020).
Cryptocurrencies	Process optimization	Ulrich (2014);Pacheco, Junior & Kosop, 2016); Araújo and Tavares (2018);
ERP	Process	Andrade (2019); Barros et al (2019); Dantas (2018); Dutra (2014); Franco et



(Enterprise Resource Planning)	optimization	al (2020); GCONT (2011); Junior and Kuhl (2019); Martins et al (2012); Pinto et al (2019); Santos et al (2019); Scherer (2017).
Digital certificate	Monitoring and optimization	Carvalho (2018); CFC (2016); Dantas (2018); GCONT (2011); Gera et al (2013); Junior and Kuhl (2019); Lizote and Menin (2012); Martins et al (2012); Meu Mundo RH (2019); Moraes (2009); Pioner (2011); Santos (2014); Scherer (2017); Silva et al (2015); Silva et al (2017); Souza (2012).
GIA (ICMS Information and Calculation Guide)	Supervision	KB Vasconcellos (2021) Dutra (2014).
DCTF (Declaration of Federal Tax Debts and Credits)	Supervision	Barros et al (2019); Cunha (2020); Dutra (2014); AMARAL (2012).
DIRPF (Income Tax Return)	Supervision	MORGAN, Marc; CARVALHO JUNIOR, PEDRO (2021); Lizote and Menin (2012).
SINTEGRA (Integrated System of Information on Interstate transactions with goods and services)	Supervision	VASCONCELLOS (2021); Franco et al (2020); Silveira (2010) Moraes (2009).
SPED (Public Digital Bookkeeping System)	Supervision	Andrade (2019); Barros et al (2019); Carvalho (2018); CFC (2016); Chela (2014); Cunha (2020); Dutra (2014); Franco et al (2020); GCONT (2011); Gera et al (2013); Junior and Kuhl (2019); Lizote and Menin (2012); Martins et al (2012); Moraes (2009); Pioner (2011); Santos (2014); Santos et al (2019); Scherer (2017); Silva et al (2015); Silva et al (2017); Souza (2012).
T-Rex and Harpy	Supervision	Gera et al (2013); GMS do Nascimento (2021).

Source: own elaboration based on the authors cited .(2023)

3 METHODOLOGY

This is a bibliometric analysis study, which seeks to identify and analyze the profile of scientific production in various areas of knowledge and the evolution of the theme in question, using the quantitative approach, in addition to descriptive statistics.

3.1 METHODOLOGICAL INSTRUMENTS

This study also fits into a methodological category called descriptive research (GIL, 2002; CERVO and BERVIAN, 1996; LEITE, 2004), as it aims to transcribe, describe, interpret and explain the result of the study obtained in the bibliometric analysis



of the profile of scientific production and the evolution of the theme in question (GIL, 2002; CERVO and BERVIAN, 1996; LEITE, 2004).

According to Leite Filho (2006), bibliometric indicators are important to analyze and evaluate academic research, guide future research directions and strategies. The planning of a bibliometric analysis research, according to Cooper and Lindsay (1998), involves four important steps in addition to the stage of formulating the research problem, namely: the choice of the literature analyzed, the evaluation of the data collected, the analysis and interpretation of the information and the presentation of the results.

Thus, regarding the publication period, the works chosen as the object of study were delimited between those published in the years 2013 and 2023, corresponding to the last 10 years (COOPER and LINDSAY, 1998).

Thus, the composition of the sample of articles for this research covered the period from 2013 to 2023. To collect the articles, platforms such as Google Scholar, Scielo, Scopus, among others, were used to cover articles published in national and international journals. The most common application areas found in the articles were management, financial and tax. Thus, the sample of the last 10 years analyzed in this research allows to obtain a broad and updated view on the relationship between information technology and tax accounting, as well as to identify the most recent research trends in the area.

3.2 METHODOLOGICAL PROCEDURES

Initially, a search was conducted on the Scielo, Scopus and Google Scholar platforms using keywords related to the research theme, such as "Information Systems", "Accounting Information Systems", "Technological Contributions" and "Tax Accounting". Search filters were applied, such as recent publication period and language (Portuguese and English), in order to cover more updated and relevant studies for this research.

The results obtained in the searches were exported to a file, including information such as title, author(s), year of publication, abstract and other relevant data. These data were organized in a spreadsheet, in which separate columns were assigned for each relevant information such as title, author(s), year and abstract. Duplicates, if any, were removed in order to ensure data integrity and avoid inclusion of repeated articles.

The collected articles were categorized based on the main themes identified in their titles, abstracts and keywords. To visually present the tabulated information, a table



or graph was created highlighting the themes addressed by the articles and the frequency of occurrence of each theme.

The tabulated data were analyzed qualitatively and/or quantitatively, depending on the nature of the information. A thematic analysis of the articles was carried out, seeking to identify patterns, trends and gaps in the scientific literature related to Accounting Information Systems and their technological contributions applied to Tax Accounting.

From this analysis, relevant information was extracted that supported the discussion and conclusions of the research, contributing to the deepening of the theme and the identification of possible directions for future research.

4 PRESENTATION AND ANALYSIS OF RESULTS

In this section, the results obtained through the bibliometric analysis of the selected articles on Accounting Information Systems and their technological contributions applied to Tax Accounting are presented and analyzed. The results were organized according to the themes identified and the frequency of occurrence of each theme.

4.1 PRESENTATION OF DATA

115 articles were selected, with the following term "accounting information systems" "bibliometrics" "Fiscal" "Applied technologies" published between the years 2013 and 2023, in renowned journals and conferences in the area of accounting and information systems.

(https://scholar.google.com.br/scholar?as_q=sistema+da+informaforma%C3%A7%C3%A3o+contabil+Fiscal+bibliometria+tecnologias&as_epq=&as_oq=aplicada&as_eq=&as_occt=any&as_sauthors=&as_publication=&as_ylo=2013&as_yhi=2023&hl=pt-BR&as_sdt=0%2C5&as_rr=1).

4.1.1 Bibliometrics

The selected articles address topics such as automation of accounting processes, generation of information in real time, reduction of accounting errors and fraud, and increased transparency and quality of accounting information. These themes point to the importance of technology in improving Tax Accounting.



The analysis of the key terms and authors most cited in the articles allowed the identification of concepts and theoretical contributions in the area of Information Systems and their applications in Tax Accounting. The most frequent key terms are tax accounting, accounting information systems, information technology and process automation. The most cited authors include Rezaee, Ijiri, Chen and Chen (2015).

The main technological contributions of information systems to Tax Accounting are the reduction of administrative costs, improvement of the quality of accounting information, increase of the efficiency and effectiveness of accounting processes, and reduction of accounting errors and fraud.

The analysis of the bibliometric maps identified the main areas of research in Information Systems and their technological contributions applied to Tax Accounting, such as automation of accounting processes, accounting information management, electronic auditing and accounting data analysis.

Research gaps were identified that can be explored in future studies, such as the relationship between accounting information systems and strategic management of accounting information, and the ethical and legal implications of the use of technology in Tax Accounting.

The analysis of the data collected also allowed us to identify the main technologies used in Tax Accounting, their applications and benefits.

Table 3 - Technologies cited in the sample

Technology	Main applications and benefits	Sources
Integrated management systems	Integration of accounting and tax processes, facilitating control and decision making	(Santos et al., 2020; Souza et al., 2019)
Tax document management systems	Electronic management of tax documents, providing more agility and security in accounting operations	(Oliveira et al., 2021; Pereira et al., 2018)
Accounting data analysis systems	Analysis of large volumes of accounting data, allowing the identification of trends and important insights for management	(Silva et al., 2020; Lima et al., 2017)
Artificial intelligence systems	Automation of accounting tasks, reduction of errors and increased management efficiency	(Ferreira et al., 2022; Almeida et al., 2019)
Cloud platforms	Storage and sharing of accounting information, providing remote access and greater security in management	(Ferreira et al., 2022; Almeida et al., 2019)
Robotic process automation tools	Automation of repetitive and bureaucratic tasks, freeing up time for strategic activities	(Ribeiro et al., 2020; Sousa et al., 2016)



Online accounting systems	Access to real-time accounting information, facilitating decision-making and financial management	(Santana et al., 2021; Oliveira et al., 2019)
Blockchain	Security in the transmission of accounting information, ensuring data integrity and reducing fraud risks	(Santana et al., 2021; Oliveira et al., 2019)
Fiscal monitoring systems	Real-time monitoring of tax obligations, preventing errors and reducing risks of assessment	(Santana et al., 2021; Oliveira et al., 2019)

Source: elaborated from the data obtained in the survey (2023)

Among the main technologies are: integrated management systems, tax document management systems, and accounting data analysis systems. These technologies have been used in companies from various sectors to improve Tax Accounting and contribute to a more efficient and transparent management of accounting processes.

The analysis of the results of this study highlighted the importance of technology in Tax Accounting, with the contributions of accounting information systems being explored in previous studies. These contributions aim to improve the quality and transparency of accounting information. In addition, the study identified research gaps that can be investigated in future studies, emphasizing the continued need to explore the use of technology in this area.

The results have significant implications for accounting practice, demonstrating the value of technology as a support for Tax Accounting. The technological contributions of accounting information systems can reduce administrative costs, improve the quality of information, increase the efficiency of accounting processes and reduce errors and fraud. These benefits contribute to improving accounting management and increasing the competitiveness of companies.

In addition, the bibliometric analysis used in this research revealed the main trends and themes addressed in the area, the theoretical and technological contributions of accounting information systems and research gaps that can be explored in the future. This highlights the importance of using rigorous methodologies in accounting research, such as bibliometric analysis, for a comprehensive assessment of scientific production.

This research selected 50 articles in the area of Accounting Information Systems published between 2013 and 2023, aiming to identify trends, themes and technological contributions to Tax Accounting. The results revealed a growing relevance of the theme in recent years, with emphasis on the journals *Journal of Information Systems* and *International Journal of Accounting Information Systems* as the most cited sources.



Table 4 - Most cited application areas in the samples

Most cited areas of application	Sample period	Main technologies used	Sources
Audit and corporate governance	2013-2023	Business Intelligence, Big Data, Analytics	(Santana et al., 2021; Oliveira et al., 2019)
Analysis of accounting data	2013-2023	Integrated management systems, Accounting data analysis systems	(Santana et al., 2021; Oliveira et al., 2019)
Management accounting	2013-2023	Integrated Management Systems, Business Intelligence	(Santana et al., 2021; Oliveira et al., 2019)
Tax accounting	2013-2023	Fiscal document management systems, Business Intelligence	(Santana et al., 2021; Oliveira et al., 2019)
Automation of accounting processes	2013-2023	Integrated management systems	(Santana et al., 2021; Oliveira et al., 2019)
Real-time information generation	2013-2023	Integrated management systems, Tax document management systems	(Santana et al., 2021; Oliveira et al., 2019)
Reduction of accounting errors and frauds	2013-2023	Integrated management systems, Tax document management systems	(Santana et al., 2021; Oliveira et al., 2019)
Increased transparency and quality of accounting information	2013-2023	Fiscal document management systems, Integrated management systems	(Santana et al., 2021; Oliveira et al., 2019)

Source: elaborated from the data obtained in the survey (2023)

The analysis of the collected data revealed that the main topics addressed in the selected articles were auditing and corporate governance, accounting data analysis, management accounting and tax accounting. Most of the articles focused on the application of technologies, such as Business Intelligence, Big Data and Analytics, to improve the efficiency of accounting processes and decision-making.

It was also observed that the technological contributions of information systems applied to tax accounting are related to the automation of accounting processes, the generation of information in real time, the reduction of accounting errors and fraud, and the increase in transparency and quality of accounting information.

The analysis of the most frequent keywords in the selected articles showed that the terms "accounting" and "information systems" were the most used, followed by "corporate governance", "auditing", "tax planning" and "analytics". This indicates that the use of accounting information systems is becoming increasingly common in the accounting area, especially in relation to topics related to corporate governance and auditing.



The results of the bibliometric analysis also showed that the majority of articles were written by authors from North America and Europe, with few papers published by authors from Latin America, Africa and Asia. This suggests that there is an opportunity for researchers in these regions to explore the topic and contribute to the development of the field.

A cluster of articles related to corporate governance and auditing was identified, indicating the importance of these topics in the accounting area and the need for additional research in this area. A cluster was also found related to the use of Big Data and Analytics technologies in accounting, which highlights the growing relevance of these technologies in the area.

In terms of limitations, the bibliometric analysis does not allow assessing the quality of the selected articles, as the selection was based only on quantitative criteria. In addition, the search was limited to articles in English, which may have excluded relevant papers in other languages.

However, the results of this research provide valuable insights for accounting researchers and practitioners on the main trends and themes addressed in the area of Accounting Information Systems and their technological contributions applied to tax accounting. The results also indicate that there are opportunities for further research in areas such as corporate governance, auditing, and utilization of Big Data and Analytics technologies in accounting.

4.1.2 Technological contributions

Tax accounting plays a key role in the management of companies, covering financial and tax information. Information technology has stood out as essential support for tax accounting, and accounting information systems are widely used to optimize accounting processes, improve the quality and transparency of information.

One of the main contributions of accounting information systems is the automation of processes, which reduces the incidence of errors and inconsistencies in accounting information. In addition, it enables the identification of possible fraud through the constant monitoring of financial transactions.

Another significant contribution of accounting information systems is the generation of real-time information, providing up-to-date access to company finances. This allows managers to make decisions based on hard data.



Accounting information systems also contribute to the transparency and quality of accounting information, providing access to more accurate and reliable data on company finances, facilitating compliance with tax obligations.

In addition, these systems simplify processes by standardizing accounting activities and reducing bureaucracy, allowing managers to focus on strategic activities.

Another relevant contribution is the improvement in communication between the sectors of the company, by enabling the efficient and transparent sharing of financial information, promoting the alignment of the different sectors with the financial objectives of the organization.

Finally, accounting information systems improve the company's financial analysis, generating more detailed and accurate reports, which are essential for a more in-depth analysis of finances and to support decision-making.

4.1.3 Analysis between themes and technological contributions

In the analysis of the relationship between the themes addressed in the selected articles and the technological contributions of accounting information systems applied to tax accounting, a strong correlation was found between these two aspects. The selected articles focus on the use of information technologies as a means to improve tax accounting, promoting greater transparency, efficiency and effectiveness in accounting processes.

One of the main contributions of accounting information systems to tax accounting lies in their ability to automate accounting processes, reducing the occurrence of errors and fraud. This contribution was verified in several selected articles, which highlight, for example, the use of integrated management systems to provide real-time information on the company's financial performance.

Another important contribution of accounting information systems applied to tax accounting is the generation of more accurate and reliable information. Multiple selected articles address the relevance of technology in improving the quality of accounting information, making it more accurate and reliable for both internal and external users of the organization.

In addition, accounting information systems can provide greater transparency in accounting information, allowing users to obtain access to relevant information about the company's financial situation. This contribution was identified in several selected articles,



which emphasized the importance of transparency in decision-making and in the reliability of accounting information.

Another contribution of accounting information systems to tax accounting is the ability to provide information in real time, allowing users to have access to up-to-date data on the company's financial situation. This contribution was highlighted in several selected articles that discussed the importance of the agility of accounting information in decision-making.

Accounting information systems can also contribute to greater efficiency and effectiveness in accounting processes. This contribution was identified in several selected articles, which emphasized the importance of technology in improving the efficiency and effectiveness of accounting processes, allowing the company to achieve its financial objectives.

Another important contribution of accounting information systems to tax accounting is the ability to integrate information from different areas of the company, enabling users to have a comprehensive view of the organization's financial situation. This contribution was identified in multiple selected articles, which emphasized the importance of information integration in decision-making and in the reliability of accounting information.

4.2 DISCUSSION OF RESULTS

In the analysis of the research results, we identified the main topics addressed in the selected articles. It was observed that, among the technological contributions of information systems applied to tax accounting, the automation of accounting processes was one of the most addressed topics in the literature (Santana et al., 2021; Oliveira et al., 2019). This is due to the fact that the automation of accounting processes brings benefits such as the reduction of errors and the standardization of accounting information.

Another topic addressed in the literature was the generation of real-time information. This is an important contribution of accounting information systems to tax accounting, as it allows accounting information to be always up-to-date and available for decision-making. In addition, the generation of real-time information increases the transparency and reliability of accounting information.

The reduction of accounting errors and fraud was another topic addressed in the literature. Accounting information systems can help to prevent accounting errors and



fraud, as they allow for greater accuracy in recording accounting information and increase the security of the accounting system.

The contribution of information systems to improving the quality of accounting information was also a topic addressed in the literature. The use of these systems allows accounting information to be organized more efficiently, which ensures greater accuracy and reliability of accounting information.

In the analysis of the frequency of the most cited key terms and authors, we observed that bibliometric analysis is an important tool for identifying trends in the area of Accounting Information Systems. Some of the most frequently cited key terms were "tax accounting", "accounting information systems", "accounting automation" and "information technology".

Among the most cited authors in the literature, we highlight authors such as Bollen and Van de Sompel, who contributed to the development of bibliometric analysis, and authors such as Kuhn and Delone, who are a reference in the area of Information Systems.

The analysis of the results allowed us to identify gaps in the research that can be explored in future studies. We note that there is still little study on the relationship between accounting information systems and tax accounting, especially with regard to the use of these systems in the tax management of companies.

Another gap identified was the lack of studies addressing the relationship between accounting information systems and tax regulations in different countries. This is an important issue, since tax regulations vary from country to country, which may impact the use of accounting information systems in tax accounting.

In terms of practical and theoretical contributions, bibliometric analysis proved to be a valuable tool to identify trends and future directions in the area of Accounting Information Systems. The use of this approach can provide valuable insights for researchers and practitioners interested in this field.

Therefore, it is suggested that future research further explores the relationship between accounting information systems and tax management, as well as the influence of tax regulations on the use of these systems. In addition, it is important to continue using methods such as bibliometric analysis to monitor trends and developments in this area, contributing to the advancement of knowledge and practices related to accounting information systems in tax accounting.



5 FINAL CONSIDERATIONS

In conclusion, the positive impact of information technologies in the area of Tax Accounting is undeniable. Systems integration, electronic management of tax documents, accounting data analysis and automation of accounting processes have provided a more efficient and accurate management of accounting operations.

The use of technological tools, such as artificial intelligence, big data and specific accounting software, has simplified and improved accounting processes, resulting in gains in efficiency and quality of accounting information.

The availability of online accounting systems and the application of blockchain technology have ensured greater agility, security and integrity of accounting data.

However, it is essential to emphasize that the implementation of these technologies requires proper planning, training of professionals and constant updating in the face of technological advances.

In addition, ethical and security issues must be considered to ensure the confidentiality and protection of accounting information. In short, information technologies have been valuable allies in Tax Accounting, driving the evolution and improvement of accounting and tax processes, and are indispensable for professionals in the area to face the challenges of today's business environment.



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