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**Análise da Produção de Artigos Científicos em Agronegócio Publicados em Periódicos Nacionais de Contabilidade**

*Analysis of the Production of Scientific Articles on Agribusiness Published in National Accounting Journals*

*Análisis de la Producción de Artículos Científicos sobre Agroindustria Publicados en Revistas Contables Nacionales*


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**PALAVRAS-CHAVE**

Bibliometria.  
Contabilidade.  
Agronegócio.

**Resumo:** O presente estudo objetiva analisar a produção de artigos científicos publicados em periódicos nacionais de contabilidade na área de agronegócio no período de janeiro de 2015 a 27 de novembro de 2022. Para tanto, foram utilizadas as técnicas de pesquisa bibliométrica com abordagens quantitativa e qualitativa, descritiva e documental. A amostra foi composta por 136 artigos científicos relacionados ao agronegócio, considerando como base 24 periódicos nacionais de contabilidade. Os principais resultados da pesquisa são: 2016 e 2017 foram os anos com maiores números de publicações; o autor/coautor com destaque em artigos científicos publicados foi D.L. Oliveira, o qual está vinculado à Universidade Federal de Rondônia, com 6 artigos; os periódicos com mais artigos publicado foram as Revistas de Custos e @gronegócio on line e a de Administração, Contabilidade e Economia – RACE. As duas categorias analisadas possibilitaram identificar as subáreas de Mercado Financeiro e Arbitragem e Contabilidade Gerencial como as mais estudadas. Já os aspectos metodológicos analisados indicaram que essa modalidade de produção científica se realiza, principalmente, por meio de pesquisa documental, estudo de caso e levantamento; com abordagem quantitativa. Este estudo contribui com o diagnóstico da produção de artigo

científico sobre a contabilidade aplicada à área de agronegócio, evidenciando a lacuna de veiculação em periódicos com maior influência (Qualis-A1) na área contábil.

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**KEYWORDS**

Bibliometrics  
Accounting  
Agribusiness.

**Abstract:** *The present study aims to analyze the production of scientific articles published in national accounting journals in agribusiness in the period from January 2015 to November 27, 2022. Bibliometric research techniques were used, with quantitative and qualitative, descriptive, and documentary approaches. The sample was composed of 136 scientific articles related to agribusiness, considering as base 24 national accounting journals. The main results of the research are: 2016 and 2017 are the years with the highest number of publications; the author/coauthor with the most published scientific articles is D.L. Oliveira from the Universidade Federal de Rondônia with six articles; the journals with the most articles published are Revistas de Custos e @gronegócio online and Administração, Contabilidade e Economia - RACE. The two categories analyzed identified the subareas of Financial Market, Arbitrage and Management Accounting as the most studied; and the methodological aspects analyzed indicated that this type of scientific production is carried out mainly through documentary research, case studies and surveys, with a quantitative approach. This study contributes to diagnosing the production of scientific articles on accounting applied to the agribusiness area, revealing the lack of publication in journals with more significant influence (Qualis-A1) in the accounting area.*

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**PALABRAS CLAVE**

Bibliometría  
Contabilidad  
Agroindustria.

**Resumen:** *El presente estudio tiene como objetivo analizar la producción de artículos científicos sobre el tema de la agroindustria, publicados en revistas contables nacionales en el período comprendido entre enero de 2015 y el 27 de noviembre de 2022. Se utilizaron técnicas de investigación bibliométrica y enfoques cuantitativo, cualitativo, descriptivo y documental. La muestra estaba compuesta por 136 artículos científicos relacionados con la agroindustria, considerando como base 24 revistas nacionales de contabilidad. Los principales resultados de la investigación y son: 2016 y 2017 fueron los años con mayor número de publicaciones; el autor/coautor con más artículos científicos publicados fue D.L. Oliveira adscrito a la Universidad Federal de Rondônia con 5 artículos; las revistas con más artículos publicados fueron las Revistas de Custos e @gronegócio online y de Administração, Contabilidade e Economia – RACE. Las dos categorías analizadas permitieron identificar las subáreas de Mercado Financiero y Arbitraje y Contabilidad de Gestión como las más estudiadas; y los aspectos metodológicos analizados indicaron que este tipo de producción científica se realiza principalmente a través de la investigación documental y el estudio de casos con un enfoque cuantitativo. Este estudio contribuye al diagnóstico de la producción de artículos científicos sobre contabilidad aplicada al área de la agroindustria, destacando la ausencia de publicación en las revistas con mayor influencia (Qualis-A1) en el área contable.*

## Introduction

Research in Brazil has seen a significant increase in the analysis of scientific production using the bibliometric technique, allowing the production of knowledge in a specific area to be characterized, identifying the most relevant research and journals, as well as the most studied subjects over time (Analytic Clarivate Company, 2019; Glänzel & Schoepflin, 1999; Merigó & Yang, 2017). Brazil ranks 13th place in the world in the production of research articles and reviews indexed on the Web of Science among the countries surveyed in the period from 2013 to 2018 (Analytic Clarivate Company, 2019).

Accounting has grown significantly from the 20th century on. Considered a reliable source of information for entities and following the evolution and complexity of the economic sectors, Accounting has been specializing in subareas. With globalization and the greater relevance of the capital market, the harmonization of the national accounting standards with the international ones has become urgent in the 21st century to standardize techniques and procedures, providing comparative analyses and useful information to the users. (Merigó & Yang, 2017).

At the same time, academic research has expanded, broadening the debate on the epistemology of accounting research in different areas, stimulated by the emergence of graduate programs in many regions of the country. Under the epistemological perspective, bibliometric research contributes to the diagnosis of scientific production, allowing to enhance the debate about the knowledge production process in its subareas to identify weaknesses and gaps, as well as to make important contributions (Martins, 2008; Merigó & Yang, 2017).

The scientific production on accounting applied to agribusiness has intensified as this sector has become more complex in the organization and structure of its operations, integrating agricultural production with the supply industry, processing, and exports, with diversified

agendas and at more expressive levels. Agribusiness has a historically relevant role in the country's economy and great challenges in logistics, agronomic production, zootechnical, veterinary, management, and coordination, considering that this sector is part of a highly competitive international market, occupying the main positions in the rankings of several products (Centro de Estudos Avançados em Economia Aplicada [CEPEA], 2021; Benigno, Leite, Souza & Botelho, 2020).

The bibliometric studies on this theme conducted by Leite Filho (2008) and Santos (2015) were based on articles published in national congresses. Souza et al. (2012) used articles published in accounting journals with the Capes stratum. They mainly used the productivity metrics of the author/coauthor and their respective institutions of affiliation; journals with the most publications; and most frequent keywords.

On international bases, Lunkes and Feliu (2011), Merigó and Yang (2017), and Benigno et al. (2020), in addition to traditional metrics, inserted: the main research techniques and related the themes to accounting subareas. As exposed, there is a gap in the identification of accounting subareas in the national literature, according to journals listed by Anpcont (2021).

Based on this context, this research investigates the following question: what are the characteristics of the production of scientific articles in agribusiness published in national accounting journals? Guided by this question, this study aims to identify the characteristics of the production of scientific articles in agribusiness published in national accounting journals in the period from January 2015 to November 27, 2022. The study aims to evaluate the characteristics of the production, considering the following metrics: productivity of authors and journals, their respective institutions of affiliation, co-participation, quality parameter, productivity per year, as well as two categories of analysis to identify the main subareas and methodological aspects.

In this way, this study contributes to the diagnosis of the production of scientific articles by national journals, promoting practical and epistemological reflections on the production of accounting knowledge applied to agribusiness. The study also stimulates new academic research on the topic, allowing the identification of gaps, main bibliographical references, methodological aspects, and subareas with potential to be explored. The intensification of production processes in the agribusiness sector, the greater demand for social and environmental responsibility, and the professionalization of its managers expand the scope of rural accounting.

The research is structured into five topics: the introduction provides an overview, the theoretical framework, which discusses the existing literature on the topic under study, the methodology used to conduct the research, the results, and discussions of the data collected, and the final considerations.

### **Theoretical elements of the research**

The literature review and the theoretical framework that underlie this research are structured in three sections, the first is a contextualization of the theme: accounting applied to the agribusiness sector. The second section discusses the theoretical aspects of bibliometric research and, finally, the most relevant studies that support the discussion of the results.

### **Contextualization of Accounting Applied to Agribusiness**

With the technological evolution, agricultural production involved several agents of the economic market and the institutional environment to support the sectors related to supplies, processing, logistics, technical support, and commercialization (wholesale and retail), both in the domestic and foreign markets (Araújo, 2007). When John Davis and Ray Goldberg realized that the production sector was articulated with the segments before and after the gate, generating jobs and prosperity, they created the Agribusinesses

concept, expressing the complexity and interconnection of these sectors. According to Davis and Goldberg (1957, p.85), agribusiness represents "the sum of the operations of production and distribution of agricultural supplies, the operations of production at farm units, the storage, processing, and distribution of agricultural products and items produced from them".

In this sense, accounting contributes significantly to the efficient and competitive management of the agribusiness sector through an accounting information system consisting of the steps of collection, processing, and transmission of data on the economic and financial situation of an entity in a certain period (Silva, Oliveira & Gonzales, 2021). The accounting disclosure and measurement allow the creation of reports and instruments of control and monitoring to help the managers of the Brazilian agribusiness system in cost, financial, and risk management. The indicators used in the financial statements enable the performance evaluation, showing the liquidity situation, indebtedness, profitability, return, and risk of the entities (Silva, Oliveira & Gonzales, 2021).

However, it should be noted that the agricultural production sector has a strong heterogeneity, being composed of highly technological rural companies that use accounting tools for risk management, cost control, product pricing, market analysis, among others, and, on the other hand, producers with difficulty in developing the culture of recording production expenses (Breitenbach, 2014). For the author, accounting helps the rural producer, whether an individual or a company, in his relations with stakeholders (partners, shareholders, suppliers, technical consultants, potential investors, financial institutions, labor unions, agribusiness, customers, government, and others).

According to Souza, Barros, Araújo, and Silva (2012), Brazilian accounting studies related to the agribusiness sector, in the period from 2006 to 2011, had as highlights the keywords: costs, performance evaluation, strategic management, and sustainability. Internationally, Benigno et al.

(2020) identified the main subareas: management accounting; recognition and measurement; regulation; financial market and arbitrage; social disclosure; and social and environmental accounting.

## **Bibliometric Research**

Bibliometrics is developed using mathematical and statistical procedures applicable to the counting and identification of patterns in scientific productions (books, dissertations, theses, articles, monographs, etc.). Bibliometrics is a technique that combined with the mathematical theory of communication and information retrieval, adds to Information Science the mathematical approach to the object of study (Araújo, 2009; Guedes & Borschiver, 2005, p. 2).

The purpose of bibliometrics is to identify and quantify the characteristics of knowledge production, such as the productivity of institutions, authors, and journals; trends; innovations; degree of the author and institutional collaboration; most relevant productions; obsolescence, among others (Chueke & Amatucci, 2015; Glänzel & Schoepflin, 1999; Hyland & Jiang, 2021). The three most relevant theoretical laws of bibliometric studies are Lotka's Law (1926), which identifies the most prolific authors; Bradford's Law (1934), which analyzes the productivity of journals; and Zipf's Law (1949), which measures the frequency of words in texts. This quantification allows an objective evaluation of scientific production.

According to the premise of Lotka's Law (1926), the ratio between the number of authors and the number of papers published is associated with the Inverse Square Law ( $1/n^2$ ). Consequently, if the number of published articles ( $n$ ) is equal to three, then the number of researchers who produced these studies would be  $1/9$  in relation to those who write 1, which results in the concentration of scientific production in a small group of authors, in any area, while the majority has low productivity (Araújo, 2006; Guedes & Borschiver, 2005). Lotka's Law (1926) received

contributions from Price (1976), who showed that this relationship, in his studies, occurred with  $1/3$  of the scientific production being conducted by less than  $1/10$ , besides the formulation of the law of elitism, which states that the number of members of the scientific production elite is equal to the square root of the total number of authors (Araújo, 2006; Alvarado, 2009).

On the other hand, Bradford's Law (1934) allows, by measuring productivity, to establish the center and the fields of dispersion on a certain subject in the same set to identify the most relevant journals that give prominence to a specific subject. The results obtained with the application of this law identify the centers of excellence in scientific knowledge production in certain areas, analyze the inbreeding with related institutions, the geographic concentration, and the quality level of the journals (Araújo, 2006; Guedes & Borschiver, 2005; Vanti, 2002). In Brazil, Qualis, the evaluation system for scientific journals, offers eight classifications that are displayed in descending order of quality: A1, A2, B1, B2, B3, B4, B5 e C, in the three years 2013-2016 (Coordenação de Aperfeiçoamento de Pessoal de Nível Superior [CAPES], 2021).

Zipf's Law (1949) allows the identification of the subject of a certain text using the frequency of words in the text, identifying that a small number of words is much more frequent (Araújo, 2006; Guedes & Borschiver, 2005). These three laws guide this research to characterize the production of scientific articles on accounting applied to agribusiness, as suggested by Guedes and Borschiver (2005).

## **Related Studies**

The scientific literature reports numerous bibliometric studies in several areas. In this research, we highlight those evaluated as most relevant and that are related to the proposed topic.

Leite Filho (2008) studies the productivity patterns of authors in journals and congresses in accounting in Brazil, evaluating the criteria of the number of articles by publication channel,



productivity per author and co-author, gender, and institutional affiliation, having evidenced the predominance of 1 author in journals and 2 to 3 in the other channels. In addition, there was a predominance of male authors, strong institution inbreeding, and a concentration of authorship tied to a few authors/institutions.

Similarly, Lunkes, Rosa, and Feliu (2011) researched the profile of scientific production in accounting related to budgeting in Spain, intending to identify and analyze the subjects and research methods. They analyzed the number of articles per journal, authors, and citations, as well as the main research methods adopted. Among the results, it was found that the most used research procedure was the case study in budget organizations, with a predominance of 1 to 2 authors per article/journal, and a strong influence of North American literature in the citations.

Souza et al. (2012) studied the profile of articles on agribusiness published in accounting journals with the CAPES stratum, aiming to analyze the profile of articles on agribusiness, from 2006 to 2011. In this case, the authors analyzed the journals with the most publications, the economic segment with the most papers, keywords, authors per article, gender, institutions with the most authors, and methodological aspects. Main results: Revista Contextus, the journal with the most articles; agribusiness was the segment with the most articles; agribusiness was the word most found, a predominance of research developed by 3 authors and male; institution UFSM (Universidade Federal de Santa Maria – RS) with the most authors; type of research qualitative and bibliographic method.

Merigó and Yang (2017) analyzed the international scientific production on Accounting, through scientific articles published in the Web Of Science database. These researchers identified and analyzed the productivity metrics of authors, journals, institutions, and countries, and the most relevant articles. The most influential journals were: The Journal of Accounting and Economics and Journal of Accounting Research; the most influential research/citations RG Sloan

(2158), DF Larcker (2155), SP Kothari (1984), and RE Verrecchia (1941). Leading country USA, with 33 of the top internationally ranked universities, the University of Chicago is the most influential.

Benigno et al. (2020) analyzes the profile of scientific production in accounting applied to the agribusiness sector, according to Lotka's Law. It evaluates the number of papers produced by year, author, institutional affiliation of the authors, type of document produced, and topics discussed in pre-defined subareas. They identified 2016 as the year with the highest production, with a predominance of a scientific article (78.3%); main subareas and themes: Managerial Accounting (costs) and Recognition and Measurement (biological assets). Journal with the highest number of publications Custos e @gronegocio On line and Agricultural Finance Review.

Miguel, Silveira e Carvalho (2021) studied Audit Risk from the bibliometric mapping in the referential database Elsevier Scopus, to provide a mapping of the scientific production on the Audit Risk issue, between the years 2010 to 2019. They use the metrics of productivity per year; journal title; the number of authors and institutions of origin, countries, and subject area. The results found highlight the year 2019 with the largest number of publications; predominance of topics related to the area of Business, Management, and Accounting; main journal: Auditing A Journal Of Practice Theory; and top publishing countries: USA, China, and Australia. The most prolific author was Habib, A., with five articles.

Santos (2015) performed a bibliometric analysis of articles published through the Congresso Brasileiro de Custos. It analyzed the year with the most articles published, the gender of the authors, the most prolific authors, the number of authors per article, the most common approach, the most prolix institution, the number of references in the articles per year, and the nationality and sources of references. Main results: the year 2013 with the highest publication; predominance of male authors; the most prolific author being Carlos Alberto Pereira with 3 articles; production on average carried out by 5 researchers

per article. The predominant methodological approach is quantitative; the most prolific institution is Universidade Federal de Santa Catarina. The articles had 1,449 references, the national ones being the most usual, and, in terms of research sources, the journals were the most used.

From the studies mentioned, in addition to others that used the bibliometric technique, it is observed that bibliometric studies are prevalent in the national production of accounting research.

### Methodological elements of the research

This study used two approaches: the quantitative, as we worked with bibliometric procedures based on mathematical and statistical methods, and the qualitative to investigate the subareas and the predominant methodological aspects applied to agribusiness accounting research through the content analysis technique. It is, therefore, applied research, because the results guide studies on the subject (Câmara, 2013; Martins & Theóphilo, 2018).

We also used descriptive research with a characterization of the production of scientific articles on the subject, considering the categories of analysis: subareas of accounting, in which the articles are related (regulation; evaluation; evidencing and measurement; social disclosure; management accounting; environmental accounting and financial market; and arbitration); and main research strategies (Andrighi, Hoffmann & Andrade, 2011; Benigno et al., 2020; Câmara, 2013).

Besides these two categories, the production of scientific articles was characterized by metrics related to productivity (of authors and journals); co-authorship (number of authors per article); affiliated institutions (of authors and journals); knowledge dissemination (identification of the main journals and research centers on the subject, in addition to citations); and quality (Andrighi, Hoffmann & Andrade, 2011; Martins & Theóphilo, 2018).

For the "quality" attribute of the journals, the Qualis classification was considered, carried out in the period 2013-2016, in descending order of quality evaluation: A1; A2; B1; B2; B3; B4; B5 and C (CAPES, 2021).

We also used documentary research as a strategy, having as the object of study the articles published in the periodicals, that compose the sample to analyze the scientific production (Martins & Theóphilo, 2018). The option for scientific publication in the form of an article was adopted, considering that 78.3% of the diffusion of national works on accounting applied to the agribusiness sector, in the period from 1990 to 2017, occurred in this modality in line with the 83% of the international production, as pointed out by Benigno *et al.* (2020).

The database was intentionally selected using exclusively accounting journals as criteria (*Associação Nacional dos Programas de Pós-Graduação em Ciências Contábeis* [ANPCONT], 2021). In the initial phase, 35 journals were identified, however, only 24 contained at least one article on the topic, as shown in Table 1.

**Table 1**  
**List of Journals that compose the sample**

<b>Journals</b>
1. BASE (UNISINOS)
2. Brazilian Business Review – BBR
3. Contabilidade Vista & Revista
4. Custos e @gronegocio on line
5. Pensar Contábil
6. Práticas em Contabilidade e Gestão
7. Revista Ambiente Contábil
8. Revista Brasileira de Gestão de Negócios – RBGN
9. Revista Contemporânea de Contabilidade – RCC
10. Revista de Administração, Contabilidade e Economia – RACE
11. Revista de Administração, Contabilidade e Economia – RACEF
12. Revista de Administração, Contabilidade e Economia – REUNIR
13. Revista Contemporânea de Contabilidade – UFBA
14. Revista de Contabilidade do Mestrado em Ciências Contábeis
15. Revista de Contabilidade e Organizações – RCO

16. Revista de Educação e Pesquisa em Contabilidade – REPEC
17. Revista de Gestão e Contabilidade da UFPI
18. Revista de Gestão, Finanças e Contabilidade
19. Revista do Instituto de Ciências Econômicas, Administrativas e Contábeis – Sinergia
20. Revista Evidenciação Contábil
21. Revista Mineira de Contabilidade – RMC
22. Revista Universo Contábil
23. Sociedade, Contabilidade e Gestão
24. Revista de Contabilidade e Controladoria – RC&C

Source: Anpcont (2021).

The process of obtaining the articles was carried out using the term "agribusiness", searched throughout the document, using the advanced search of the Google Academic (GA) platform by journal, using the full name and/or the acronym (Table 1). The initial survey was of 330 scientific productions, in the period from January 1, 2015, to November 27, 2022, using as inclusion criteria: a scientific article on accounting applied to agribusiness. Duplicate articles were excluded (written in Portuguese and English); other types of production and articles that contained the word agrobusiness but did not address the topic. After excluding 195 productions the final sample resulted in 136 scientific articles.

After surveying the articles, the following data were extracted: year, title, author(s), number of authors, citations, the institution of affiliation of each author, name of the journals, Qualis, abstract, research technique, and methodological approach. The data was organized and processed using an electronic spreadsheet (Microsoft Office Excel®). The categories were analyzed by an initial reading of the title, abstract, and other elements of the article to identify the subareas of accounting and the methodological aspects. In the case of the absence of a research strategy in the abstract, the methodological characteristics of the article were analyzed to identify them.

Table 2 shows the main research strategies, to identify those most frequently used in the area of accounting applied to agribusiness.

**Table 2**  
**Classification and characteristics of the main research strategies**

Research Strategy	Characteristics
Documentary	Use of documents (primary sources) to collect data, information, and evidence in documents.
Case Study	It studies a social unit through an in-depth investigation of phenomena, including people, procedures, and structures, within their actual context.
Experimental	Use of experiment conducted with a method, hypothesis testing for analysis of causes and effects, including a control group, sample determined by probabilistic technique, and manipulation of independent variables, for observation of effects.
Field	Use of investigation of phenomena, including people, procedures, and structures in two or more organizations.
Survey	Use of a person or group's investigation, usually with the application of a questionnaire, to analyze and describe certain variables or relationships between them, in the context of a real situation, without manipulation of variables.
Bibliographic	Use of published scientific production (secondary sources) to explain or discuss the research topic or problem, also called a literature review.
Others	It does not qualify for any of the other methods.

Source: Prepared by the authors.

Note: Adapted from "*Pesquisa sobre o orçamento na Espanha: um estudo bibliométrico das publicações em contabilidade*", by Lunkes, Felio e Rosa (2011).

## Presentation and discussion of results

The analysis of the production of scientific articles in agribusiness published in national Accounting journals, in the period under review, made it possible to identify 136 articles distributed temporally (Table 3). The highest concentration of production occurred in 2016 and 2017, representing 38.24% of the total. The temporal analysis suggests that the publication of scientific articles on topics related to Accounting in agribusiness reached its peak in 2016 and, after 2017, the quantity published gradually decreased. The annual average number of authors per article shows that research in this area is being conducted predominantly by approximately 3 authors. There was a reduction in the number of articles from 2020 to 2021, the first years of the Covid-19 pandemic, which may have also affected the average number of authors in 2020 when there was



greater social isolation and time for researchers to adapt to the new working conditions.

Table 3  
Number of national articles per year (2015-2022)

Year	Frequency		The average number of authors per article
	Absolute	Relative (%)	
2015	15	11.03	3.13
2016	28	20.59	2.86
2017	24	17.65	3.83
2018	18	13.24	3.44
2019	16	11.76	3.50
2020	12	8.82	2.83
2021	10	7.35	3.50
2022	13	9.56	2.62
Total	136	100.00	3.24

Source: Survey data.

Note. In 2022, only articles published until November 27 were considered.

These results are in line with those obtained by Benigno et al. (2020), who identified 25 scientific productions in 2016, considering 106 international productions in the period from 1990 to 2017. They emphasize that there is a predominance of publications in the form of scientific articles and that Brazil has a relevant role in this theme, with a participation of 31.80% of the publications analyzed, which is due to the representativeness of agribusiness for the country's economy.

Table 4 lists the 10 most prolific authors/coauthors in the area with their respective institutions of affiliation, who produced at least 3 articles during the period analyzed. A complete count of authors and coauthors is cited by Benigno et al. (2020) and is characterized by assigning equal weight to both. The first author with the highest productivity is associated with the Universidade Federal de Rondônia, based in Porto Velho. The second is the Universidade Federal de Santa Maria. The third, fourth, and eighth authors are from the *Universidade Comunitária Unochapecó*, in the city of Chapecó (Santa Catarina). It was also observed that research is predominantly conducted by public universities.

Table 4  
List of authors and co-authors with the highest productivity (2015-2022)

Name	Article frequency		Affiliated institution
	Absolute	Relative (%)	
Deyvison de Lima Oliveira	6	1.36	UNIR
Daniel Arruda Coronel	5	1.13	UFSM
Antônio Zanin	4	0.91	UNOCHAPECO
Sady Mazzioni	4	0.91	UNOCHAPECO
Antônio André Cunha Callado	3	0.68	UFRPE
Carlos Alberto Orge Pinheiro	3	0.68	UNEB
Luiz Clovis Belarmino	3	0.68	EMBRAPA
Rodney Wernke	3	0.68	UNOCHAPECO
Valter de Senna	3	0.68	SENAI CIMATEC
Walter Fernando A. de Moraes	3	0.68	UFPE
Authors with two publications	50	11.34	
Authors with a publication	381	86.39	
Total authors	441	100	

Source: Survey data.

The productivity of 6 articles (Table 4), exceeds the productivity observed by Silveira and Carvalho (2021), who analyzed the characteristics of scientific production on audit risk in the ten-year period (2010-2019), identifying that the most productive author contributed with 5 articles. The ratio of 3.24 authors/coauthors per article approximates that identified by Benigno et al. (2020), who also used complete counting and observed, on average, 3 authors per scientific production. Lunkes, Rosa, and Feliu (2011) identified a predominance of 2 authors per article. And Leite Filho (2008) identified 1.76 authors per article, evidencing a trend of more authors per article, according to temporal evolution.

Also, the three most prolific authors were responsible for 3.40% of the production, while the authors who produced only one article on the subject are predominant (78.00%), according to Lotka's Law (Table 4). The predominance of many

authors producing only one article occurs both about accounting applied to the agribusiness sector and other areas (Benigno et al. 2020; Miguel, Silveira & Carvalho, 2021; Leite Filho, 2008; Lunkes, Rosa & Feliu, 2011). In this sense, Leite Filho (2008) identified that, on average, 72.5% of the authors published only one article in accounting congresses. Table 5 shows the name of the selected journal, the number of articles published, the classification according to CAPES, and the institution to which the journal is linked. According to the journals analyzed, the three with the most publications on the subject represent, together, 36.02% of the total. The first is important because the journal's specialty and area is costs in agribusiness, and it is linked to the Universidade Federal Rural de Pernambuco, which is based in the city of Recife. The second journal focuses on studies related to the area of public or private management that include the scientific contribution and the understanding of the theme of sustainability in the economic, environmental, and social dimensions and is linked to the Universidade do Oeste de Santa Catarina. The third journal focuses on several thematic areas of accounting and is linked to the Universidade Federal do Rio Grande do Norte. The other journals had fewer publications on the subject.

Table 5  
Journals with the most published articles (2015-2022).

Journal	Article frequency		Q.	Affiliated institution
	Abs.	Rel. (%)		
Custos e @gronegocio on line	23	16.91	B1	UFRPE
Revista de Administração, Contabilidade e Economia – RACE	14	10.29	B3	UNOESC/SC
Revista Ambiente Contábil	12	8.82	B3	UFRN
Revista Brasileira de Gestão de Negócios – RBGN	6	4.41	A2	FECAP/SP
Revista de Gestão, Finanças e Contabilidade	6	4.41	B2	UNEB
Revista Contemporânea de Contabilidade – RCC	5	3.68	A2	UFSC/SC
Brazilian Business Review – BBR	6	4.41	A2	FUCAPE/ES
Contabilidade Vista & Revista	5	3.68	A2	UFMG/MG
Revista de Administração,	6	4.41	B2	UFCG

Contabilidade e Economia – REUNIR				
Sociedade, Contabilidade e Gestão	5	3.68	B2	PPGCC/UFRJ
BASE (UNISINOS)	4	2.94	B1	UNISINOS/RS
Revista de Contabilidade do Mestrado em Ciências Contábeis	4	2.94	B2	UERJ/RJ
Revista Evidenciação Contábil	5	3.68	B3	UFPB
Revista Mineira de Contabilidade – RMC	4	2.94	B3	CRC-MG
Revista Universo Contábil	4	2.94	A2	FURB/SC
Revista de Educação e Pesquisa em Contabilidade – REPEC	3	2.21	B1	ABRACICON/DF
Pensar Contábil	4	2.94	B2	CRC/RJ
Revista de Administração, Contabilidade e Economia – RACEF	5	3.68	B3	FUNDACE
Revista de Gestão e Contabilidade da UFPI	3	2.21	B4	UFPI
Revista de Contabilidade e Organizações – RCO	2	1.47	A2	FEA/USP/SP
Revista Contemporânea de Contabilidade – UFBA	2	1.47	B4	UFBA
Práticas em Contabilidade e Gestão	2	1.47	B5	MACKENZIE
Revista de Contabilidade e Controladoria – RC&C	2	1.47	B3	UFPR/PR
Revista do Instituto de Ciências Econômicas, Administrativas e Contábeis – Sinergia	4	2.94	B4	FURG/RS
Total	136	100.00		

Source: Survey data.

Note. Abs = absolute;

Rel = Relative; Q. = Qualis

These results are compatible with those obtained by Benigno et al. (2020), who also found the highest frequency of papers published in the journal *Custos e @gronegocio* on line with B1 classification in the area of Public and Business Administration, Accounting Sciences and Tourism, according to the Qualis system of classification of scientific journals, 2013-2016 quadrennium. Journals with the highest Qualis (A2) are responsible for 20.59% of the articles published in the period. The absence of journals evaluated with Qualis A-1, suggests less international influence for Brazilian publications on the subject.

As exposed by Merigó and Yang (2017), it is observed that journals linked to universities predominate, which are primarily responsible for

the production and dissemination of knowledge on the subject. These results are in line with what is observed in the scientific production in the accounting field in general at the international level. According to these authors, in 2004, only 8 international accounting journals were included in Web Of Science, reaching 20 journals in 2013, thus representing low participation when compared to other sciences.

As shown in Table 6, the production of scientific articles in accounting applied to agribusiness is concentrated in the subareas of Financial Market and Arbitrage and Management Accounting, representing 69.12% of the total. In comparison with the subareas observed by the international research on this theme conducted by Benigno et al. (2020), the main difference was the higher proportion of publications they identified on Recognition and Measurement (25.00%). Concerning Financial Market and Arbitrage (18.00%) and Management Accounting (26%) they identified less expressive proportions, compared to Table 6.

Table 6  
**Subareas with the highest production of scientific articles on accounting applied to agribusiness (2015-2022)**

Thematic subareas	Frequency	
	Absolute	Relative (%)
Financial Market and Arbitrage	49	36.03
Management Accounting	45	33.09
Environmental Accounting	14	10.29
Recognition and Measurement	12	8.82
Social Disclosure	9	6.62
Regulation	7	5.15
Total	136	100.00

Source: Survey data.

Note. Adapted from "Análise da produção científica internacional em contabilidade aplicada ao setor do agronegócio", Benigno et al., 2020.

According to Benigno et al. (2020), the greater scientific production in Management Accounting and Recognition and Measurement is justified by the high competitiveness of Brazilian agribusiness, which demands studies on costs in various segments of the production chains. In addition, the

measurement and evaluation of biological assets, considered a complex subject, requires research, mainly on fair value.

The subarea of Financial Market and Arbitrage stands out for the mechanisms of buying and selling commodities in the capital market, with the need to understand the specifics of the operations with agricultural futures and options contracts, and thus contribute to the decision-making of the users of information (Barboza & Castro, 2021). The most produced studies in this area serve, especially, to highlight how necessary it is to use tools that reduce risk since this is a very competitive market.

Another analysis approach is presented by Souza et al. (2012), who investigated the scientific production on agribusiness published in accounting journals in the period from 2006 to 2011, identifying the productions according to the main economic segments, as well as highlighting publications referring to agribusiness (40.74%) and vegetal extraction and exploration (25.93%). The agribusiness theme can be explored by multidisciplinary approaches, complementing the contributions of accounting by offering relevant and quality information to internal and external users and encouraging the use of new tools that promote growth in the sector, valuation of assets, among others (Souza et al. 2012; Benigno et al., 2020).

Table 7 shows the most frequent methodological procedures, according to the sample used. The main research strategies on agribusiness applied to accounting were the documentary technique and the case study, with the survey technique in third place. This result diverges from that verified by Lunkes, Feliu, and Rosa (2011), when these authors analyzed the characteristics of the Spanish scientific publication on budget, finding as main research procedures the case study (27%) and the bibliographical research, called review (27%).

Table 7

**Methodological procedures techniques (2015-2022)**

Research techniques	Frequency	
	Absolute	Relative (%)
Documentary	45	33.09
Case Study	37	27.21
Survey	22	16.18
Bibliographic	10	7.35
Field	14	10.29
Experimental	8	5.88
Total	136	100.00

Source: Survey data.

As for the methodological approach, 74 articles developed with quantitative evaluation were identified (54.41%), followed by 55 with qualitative evaluation (40.44%) and 7 using both approaches (5.15%). As observed by Santos (2015), in a cost congress, the quantitative approach predominated (36.36%), indicating a preference for statistical and/or mathematical treatment to characterize and interpret the object of study.

Table 8 summarizes the results of this research, showing the year with the most publications, the author with the highest productivity, and the main journal that published on the subject, as well as the main methodological aspects, according to the sample and the time scale.

Table 8

**Summary of the results (2015-2022)**

Production Characteristics	Results	no. of articles
Year	2016	28
Author/coauthor	Deyvison de Lima Oliveira	6
Average author/article	3.24	
Journal	Custos e @gronegócio on line	23
Thematic Area	Financial Market and Arbitrage	44
Procedure	Documentary	45
Approach	Quantitative	74

Source: Survey data.

**Final considerations**

This study aimed to identify the production characteristics of scientific articles published in national Accounting journals in the agribusiness

area, using the bibliometric technique and content analysis.

As result, 136 scientific articles were identified on the accounting theme in the agribusiness area, with a concentration in the years 2016 and 2017, with this number reducing from 2017. It is noteworthy that the Gross Domestic Product of Brazilian agribusiness achieved historic growth in 2020, and still maintained excellent performance subsequently, stimulated by international demand. It is expected that in the next few years, the number of articles produced will return, from an accounting perspective, which declined significantly in 2020.

The annual average number of authors per article shows that research in this area is being carried out predominantly by 3 authors, with increasing co-participation over time until the Covid-19 pandemic occurs, with a reduction to 2.83 (2020) and 2.62 (published until Nov. 27, 2022). The most prolific authors/coauthors were: Deyvison de Lima Oliveira, with 6 articles, author linked to the Universidade Federal de Rondônia; Daniel Arruda Coronel, with 5 (Universidade Federal de Santa Maria); Antônio Zanin and Sady Mazzioni, with 4 articles respectively, and both linked to Universidade Comunitária Unochapecó. It is important to note that the research on accounting applied to agribusiness is predominantly carried out by authors linked to public institutions.

The results also showed that the journal with the most published articles was Custos e @gronegócio on line (23), Revista de Administração, Contabilidade, Economia - RACE (14), and Revista Ambiente Contábil (12), and the most identified Subareas were the following: Financial Market and Arbitrage and Management Accounting. The methodological aspects analyzed showed that this type of scientific production occurs mainly using documentary research (45), case studies (37), and surveys (22), with a predominance (74 articles) of a quantitative approach, suggesting a growing trend toward positive analysis based on data treatment using statistical and econometric techniques.



As theoretical and practical contributions on agribusiness in the accounting area, the results obtained by Souza et al. (2012) and Benigno et al. (2020) are ratified, according to which few authors continuously produce on the subject, with most having produced only 01 articles. This research, in comparison with the one conducted by Souza et al. (2012), reveals that Revista Contextus (Qualis B1) was the main journal in the dissemination of articles in this area in 2015, being surpassed by Revista Custos e @gronegócios on line, (Qualis B1), in 2022. These results ratify Bradford's Law, which points out that these are the most relevant journals that emphasize the area of accounting applied to the agribusiness sector.

At the national level, the subarea Financial Market and Arbitrage followed by Management Accounting was identified as the most researched and, at the international level, Benigno et al. (2020) identified Management Accounting. Thus, the low production of articles on applied accounting in the area of agribusiness, with Qualis-A1, is observed, due to the absence of Brazilian journals with this classification in the accounting area.

We highlight, as a limitation of this study, the selection criteria of the articles, since we selected only those in which the word "agribusiness" appeared in the title or text and were published in journals exclusively in the accounting area. This sample size resulted in the identification of only 136 articles, not including those that did not present the word agribusiness and those that were published in journals in related areas. With prospects for further research, studies that consider the 2017 Agricultural Census as a base are suggested due to the need to understand and diagnose the sector from a management accounting perspective.

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