

Data Analytics in Management Accounting: A Bibliometric Analysis

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ABSTRACT

This study examines the evolution of research on data analytics in management accounting by identifying publication trends, influential contributors, collaboration networks, and emerging research themes. Using bibliometric methods, including performance analysis and science mapping, the study analyzes 129 articles published in Scopus-indexed journals between 2014 and 2025. The findings show that the literature is primarily centered on accounting information systems, big data, and artificial intelligence, while machine learning, blockchain technology, and cloud computing have emerged as significant directions for future investigation. By mapping the intellectual structure and thematic evolution of this research domain, the study provides a comprehensive overview of existing knowledge, identifies key research gaps, and proposes an integrative agenda for future research. These findings offer useful insights for both researchers and practitioners seeking to advance the application of data analytics in management accounting.

Keywords: Data analytics, Management accounting, Big data, Artificial intelligence, Bibliometric analysis

INTRODUCTION

Management accounting has undergone a profound transformation over the past decade, driven by rapid advances in data analytics, big data analytics, and artificial intelligence (AI). These technological developments have fundamentally reshaped the nature of accounting information and its role in supporting managerial decision-making. Consequently, management accounting has evolved beyond its traditional focus on historical financial reporting and control toward the integration of descriptive, predictive, and prescriptive analytics, enabling the provision of real-time, decision-oriented information that enhances strategic planning, resource allocation, and organizational competitiveness (Ramadanty & Putri, 2024).

Data analytics has emerged as a key driver of this transformation by enabling organizations to extract actionable insights from large and diverse datasets to support budgeting, cost management, performance measurement, and risk management. By providing more accurate, timely, and relevant information, data analytics enhances the quality of managerial decision-making (Prakoso & Apriliani, 2025). Furthermore, the integration of artificial intelligence (AI) and machine learning into accounting information systems has strengthened the predictive capabilities of management accounting, facilitating a shift from retrospective performance evaluation to forward-looking analysis and supporting strategic decision-making in increasingly complex and uncertain business environments (Tenhunen, 2025).

This technological evolution has profoundly redefined the role of management accountants. Beyond their traditional responsibilities of reporting and operational control, management accountants now serve as strategic partners by analyzing data, interpreting analytical insights, and supporting managerial decision-making and value creation. Moreover, the benefits of data analytics extend beyond operational efficiency to include higher-quality accounting information, more accurate forecasting, enhanced fraud detection, improved risk assessment, and superior organizational performance (Guo et al., 2024; Thanasas & Kampiotis, 2024).

However, realizing the full potential of data analytics requires more than technological infrastructure. It also depends on the availability of professionals with the necessary analytical and digital competencies. Existing studies emphasize that the effective adoption of data analytics in management accounting relies on developing accountants' digital capabilities and redesigning accounting education and professional training to incorporate data science and artificial intelligence, thereby preparing management accountants to meet the demands of an increasingly digital business environment (Corradino, 2021; Pare et al., 2025).

Despite the growing body of research on data analytics and emerging digital technologies in accounting, the literature remains fragmented across different technological concepts, applications, and research perspectives. Related terms such as big data analytics, business analytics, predictive analytics, machine learning, artificial intelligence, and digital accounting are increasingly used in the literature, but their relationships with management accounting have not been comprehensively mapped. At the same time, existing reviews tend to examine specific technologies, broader accounting digitalization, or particular applications, leaving a need for a systematic assessment of the development, intellectual structure, conceptual organization, and emerging directions of research specifically connecting data analytics with management accounting.

Against this background, this study aims to provide a comprehensive bibliometric analysis of the research on data analytics in management accounting. Using bibliometric techniques, the study examines the evolution of the literature, identifies the most influential publications, authors, journals, institutions, and countries, and investigates the intellectual and conceptual structures of the field. Particular attention is given to keyword co-occurrence and thematic patterns in order to identify established, emerging, and underdeveloped research themes. The analysis also considers the evolution of the literature toward emerging technologies and analytical approaches, including big data, artificial intelligence, machine learning, and predictive analytics.

Methodologically, the study applies a structured literature-selection procedure based on PRISMA principles and bibliometric analysis to the identified body of research. The bibliometric procedures combine performance analysis with science-mapping techniques to provide a systematic overview of the development and structure of the field. By integrating these approaches, the study moves beyond a narrative description of individual studies and provides an evidence-based representation of the relationships among publications, researchers, and research themes.

Although previous reviews have examined digital transformation, artificial intelligence, and emerging technologies in accounting, the specific development of data analytics within management accounting remains insufficiently mapped as a distinct research domain. Existing reviews provide valuable insights into particular technologies or broader accounting digitalization, but they do not fully capture how this literature is structured across its intellectual themes, thematic development, and international collaboration. This study addresses this gap by focusing specifically on the data analytics–management accounting intersection and integrating these dimensions within a single bibliometric analysis. Its originality therefore lies not in examining another emerging technology, but in providing a focused and multidimensional mapping of a research domain that remains fragmented across technological, accounting, and geographical perspectives.

LITERATURE REVIEW

Recent literature has increasingly examined the role of data analytics in transforming management accounting amid rapid digitalization. Existing evidence consistently shows that data analytics enhances the quality of accounting information, forecasting accuracy, strategic planning, and managerial decision-making, thereby strengthening the strategic role of management accounting within organizations (Abdelhalim, 2024; Uyar, 2021; Wadesango et al., 2024). Beyond improving operational efficiency, data analytics also advances strategic management accounting practices, which mediate the relationship between analytics capabilities and decision

quality by converting data into organizational value (Siahaan et al., 2025). The growing integration of artificial intelligence (AI) and machine learning has further expanded the analytical capabilities of management accounting, improving prediction accuracy, operational efficiency, and strategic decision support. However, realizing these benefits requires overcoming challenges related to data quality, system integration, and regulatory compliance (Pavlovic et al., 2024). Accordingly, recent studies advocate a transition from traditional management accounting approaches toward predictive and prescriptive analytics, machine learning, and statistical modeling to strengthen risk assessment, scenario analysis, and organizational value creation (Gaikwad & Damodaran, 2024; Khan, 2024; Masuke et al., 2025).

The literature also highlights the evolving role of management accountants, emphasizing that successful analytics adoption depends not only on technological infrastructure but also on accountants' analytical and digital competencies. As a result, scholars advocate integrating data analytics and AI into accounting education and professional training to prepare management accountants for the demands of digital business environments (Franke & Martin R.W, 2023; Nielsen, 2022; Vysotskaya & Prokofieva, 2025). Empirical evidence further suggests that data analytics expands the role of management accountants from traditional reporting toward strategic decision support, although many organizations continue to rely primarily on descriptive analytics and conventional financial information (Spraaakman & Rodriguez, 2021; Trinh, 2026). Overall, while the literature consistently recognizes the positive contribution of big data analytics to management accounting, it also stresses that delayed adoption may hinder the evolution of management accounting practices and limit improvements in organizational performance (Fahlevi et al., 2022).

METHODOLOGY

Data Source and Search Strategy

This study employs bibliometric analysis to examine the development, structure, and thematic evolution of scholarly research on data analytics in management accounting. The bibliometric records were retrieved from the Scopus database because of its broad coverage of peer-reviewed research across accounting, management, business, information systems, and related disciplines. Scopus was searched using the title, abstract, and author-keyword fields (TITLE-ABS-KEY), thereby allowing the retrieval of studies in which the focal concepts were explicitly addressed in the bibliographic record.

The search strategy was constructed around two core conceptual dimensions: (i) data analytics as the focal analytical phenomenon and (ii) management accounting as the application domain. The following search query was used:

TITLE-ABS-KEY(("data analytics" OR "big data analytics" OR "big data") AND ("management accounting" OR "management control systems" OR "performance measurement systems" OR "accounting information systems" OR "strategic management accounting") AND (accounting OR accountant))

The search was subsequently restricted to English-language journal articles published in their final publication stage during the period 2014–2025.

The search strategy was intentionally designed to maintain a clear conceptual boundary around data analytics in management accounting. Several related terms, including business analytics, predictive analytics, machine learning, artificial intelligence, and digital accounting, were not incorporated as independent substitutes for the focal term data analytics. This decision was based on conceptual rather than technological considerations. Although these concepts are closely related to the digital transformation of accounting, they do not necessarily refer specifically to data analytics in management accounting. Business analytics, for example, encompasses analytical applications across multiple business functions, while artificial intelligence and machine learning represent broader technological or computational domains. Similarly, predictive analytics refers to a particular analytical approach, whereas digital accounting encompasses a wider process of technological transformation. Including these terms indiscriminately in the primary search string could therefore substantially increase the retrieval of studies in which management accounting is peripheral to the central research topic.

Accordingly, the search strategy prioritizes conceptual specificity over the indiscriminate expansion of the search vocabulary. The selected terminology captures the core data-analytics concepts while requiring their intersection with management-accounting-related concepts and an accounting context. This approach was intended to enhance the relevance of the retrieved literature and maintain consistency between the search strategy and the study's research objective. The resulting dataset should therefore be interpreted as representing the scholarly literature explicitly connecting data analytics with management accounting, as distinct from the broader literature on all digital technologies used in accounting.

PRISMA-Based Selection Procedure

The study selection process was conducted in accordance with the PRISMA framework, as illustrated in **Figure 1**. The procedure consisted of four sequential stages: identification, screening, eligibility assessment, and inclusion.

At the identification stage, the Scopus search described in Section 3.1 yielded 318 records. The retrieved records were then screened according to the predefined eligibility criteria. First, the publication period was restricted to 2014–2025, resulting in the exclusion of records published outside the study period. Second, the language criterion was applied, and only English-language publications were retained. Third, records that had not reached the final publication stage were excluded. Finally, the dataset was restricted to journal articles.

After the sequential application of these eligibility criteria, 129 publications remained and constituted the final bibliometric corpus. These records were subsequently used for the bibliometric and science-mapping analyses.

Bibliometric Procedures and Analytical Techniques

The final dataset was analyzed using both performance analysis and science-mapping techniques. Performance analysis was used to characterize the development of the literature through indicators such as annual scientific production, leading journals, productive authors, country-level contributions, and highly cited publications. Science mapping was then employed to examine the intellectual and conceptual structure of the field, with particular emphasis on keyword co-occurrence analysis and thematic mapping.

The analysis was conducted using R version 4.6.0, the Bibliometrix package, and VOSviewer version 1.6.20. Bibliometrix was used to generate descriptive bibliometric indicators and conduct the thematic analysis, whereas VOSviewer was used to construct and visualize bibliometric networks, particularly keyword co-occurrence and international collaboration networks. The use of these complementary tools enabled the study to combine quantitative assessment of research productivity with the visualization and analysis of conceptual relationships within the literature. The methodological framework of Bibliometrix follows (Aria & Cuccurullo, 2017).

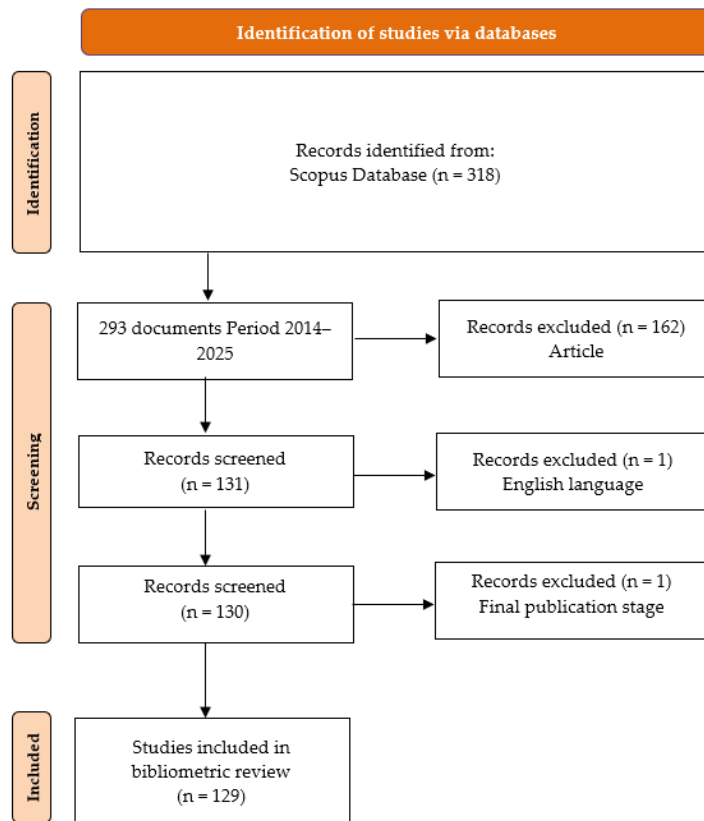


Figure 1. PRISMA Flow Diagram

RESULTS

Descriptive Statistics

The descriptive characteristics of the bibliographic dataset presented in **Table 1** suggest that research on data analytics in management accounting is an emerging yet rapidly growing field. Although the final sample comprises 129 articles published across 83 academic sources between 2014 and 2025, the annual growth rate of 24.36% reflects sustained acceleration in scholarly interest as opposed to a temporary surge in publication activity. This rapid expansion is consistent with the increasing integration of artificial intelligence, machine learning, business intelligence, and big data analytics into management accounting practice, reflecting the discipline's shift from traditional reporting functions toward data-driven decision support. At the same time, the dispersion of publications across a large number of journals suggests that the literature remains fragmented, not concentrated within a limited number of specialized outlets. This pattern shows that knowledge production is being shaped across multiple disciplines, including accounting, information systems, operations management, computer science, and business analytics, underscoring the field's interdisciplinary character while also suggesting that a unified theoretical foundation has not yet crystallized.

The average document age of approximately four years, together with a mean of 26.7 citations per article, implies that the literature has achieved considerable academic visibility despite its relatively recent emergence. This pattern demonstrates that influential contributions have rapidly attracted scholarly attention, reflecting the growing importance of digital transformation in accounting research. Moreover, the relatively high citation impact of recent publications indicates that the field remains in an active phase of knowledge development, in which conceptual frameworks, empirical evidence, and methodological approaches continue to evolve. Future research should therefore move beyond documenting applications of data analytics toward developing stronger theoretical explanations of how advanced analytical capabilities reshape managerial decision making, performance measurement, budgeting, cost management, and strategic control systems.

Authorship statistics further provide insights into the collaborative structure of the research community. The high proportion of multi-authored publications illustrates that knowledge production in this field is largely collaborative. This pattern is consistent with the interdisciplinary expertise required to investigate data analytics in management accounting, where accounting increasingly intersects with statistics, artificial intelligence, data science, and information technology. Nevertheless, the international collaboration rate of 18.6% remains relatively modest, showing that research networks continue to develop primarily within national or regional academic communities. Limited cross-border collaboration may constrain the development of internationally comparable evidence and reduce opportunities to examine how institutional, regulatory, and technological differences influence the adoption and effectiveness of data analytics in management accounting. Expanding international research partnerships therefore represents a key avenue for generating evidence that is more generalizable across diverse economic and regulatory contexts.

Finally, the exclusive focus on peer-reviewed journal articles strengthens the scientific credibility of the dataset by ensuring that the bibliometric analysis is based on rigorously evaluated research.

At the same time, the large number of author keywords and Keywords Plus reflects the conceptual diversity of the field, signaling that research has not yet converged around a stable set of theoretical perspectives or research themes. Far from denoting conceptual maturity, this diversity suggests that data analytics in management accounting remains an evolving field in which emerging technologies continuously reshape research priorities and create opportunities for new theoretical and empirical contributions.

Table 1. Descriptive statistics

Description	Results
MAIN INFORMATION ABOUT DATA	
Timespan	2014:2025
Sources (Journals, Books, etc)	83
Documents	129
Annual Growth Rate %	24.36
Document Average Age	4.01
Average citations per doc	26.7
References	13390
DOCUMENT CONTENTS	
Keywords Plus (ID)	280
Author's Keywords (DE)	415
AUTHORS	
Authors	309
Authors of single-authored docs	22
AUTHORS COLLABORATION	
Single-authored docs	28
Co-Authors per Doc	2.62
International co-authorships %	18.6
DOCUMENT TYPES	
Article	129

Source: Elaborated by the authors based on R.

Annual Scientific Production

The evolution of annual scientific production shown in **Figure 2** suggests that data analytics in management accounting has progressed from an emerging research topic to a field of increasing scholarly recognition, particularly after 2020. However, the significance of this trend extends beyond the increase in publication volume. The rapid growth in scientific production reflects the recognition that digital technologies are substantially redefining the information architecture of management accounting, shifting its focus from retrospective reporting toward predictive, prescriptive, and data-driven decision support. Simultaneously, this expansion reveals a significant gap in the current literature. Although the field has grown substantially in quantitative terms, this growth has not necessarily been accompanied by comparable theoretical development. Emerging research areas

often experience rapid diffusion of empirical applications before coherent conceptual foundations are established, showing that data analytics in management accounting is currently passing through such a transitional stage. As a result, the literature appears to be dominated by technology-oriented empirical studies that demonstrate the benefits of analytical tools without adequately explaining the organizational, behavioral, and institutional mechanisms through which these technologies create value within management accounting systems. This imbalance highlights an important direction for future research. Rather than continuing to document new applications of artificial intelligence, machine learning, or big data analytics, future studies should focus on developing integrative theoretical frameworks capable of explaining the conditions under which analytical capabilities enhance managerial decision making, performance measurement, budgeting, and strategic control. These efforts should extend beyond single-organization case studies by employing longitudinal, cross-national, and comparative research designs that account for differences in institutional environments, digital maturity, governance structures, and organizational capabilities. Furthermore, stronger theoretical integration through perspectives such as the resource-based view, dynamic capabilities theory, organizational information processing theory, and sociotechnical systems theory would help transform the field from a collection of technology-oriented studies into a cumulative and theoretically coherent body of knowledge.

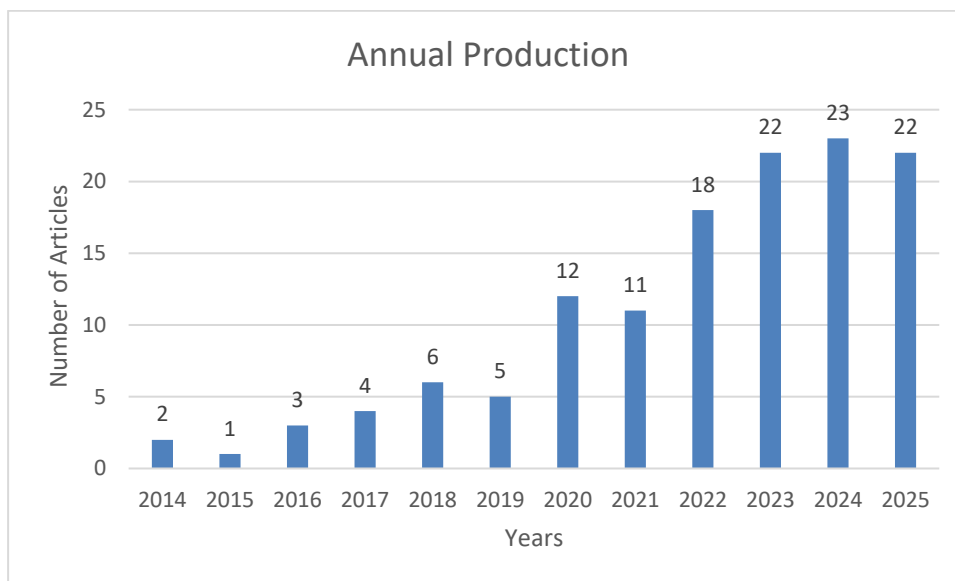


Figure 2. Annual Production (2014–2025)

Source: Elaborated by the authors based on R.

Analysis of Research Sources and Authors

Most Relevant Sources

The distribution of publications across the most relevant sources presented in **Figure 3** offers valuable insights into the intellectual organization of research on data analytics in management accounting. The prominence of journals such as *Issues in Accounting Education*, *Journal of Emerging Technologies in Accounting*, *Journal of Information Systems*, and *International Journal of Accounting Information Systems* underscores that this field has evolved primarily at the intersection of accounting, information systems, and educational research, as opposed to within mainstream management accounting journals. This publication pattern implies that scholarly attention has focused largely on the adoption, application, and implications of analytical technologies, particularly in educational contexts, reflecting the ongoing digital transformation of the accounting profession. However, it also points to a notable imbalance in the development of the literature. The relatively limited presence of leading management accounting journals suggests that data analytics has not yet been fully integrated into the core theoretical debates of the discipline and remains more closely associated with technological innovation than with the advancement of management accounting theory. Consequently, existing research appears to emphasize technological applications and digital competencies while giving comparatively less attention to how analytical

capabilities reshape fundamental management accounting functions, including strategic planning, budgeting, performance management, managerial control systems, and organizational decision making. Moreover, the dispersion of articles across diverse journals demonstrates that knowledge production remains interdisciplinary but insufficiently integrated, increasing the risk of conceptual fragmentation and limiting the emergence of coherent theoretical perspectives. These findings identify a clear direction for future research. Instead of focusing primarily on the adoption of analytical technologies, future studies should develop theory-driven investigations that position data analytics as a strategic capability within management accounting. Greater engagement with leading management accounting journals will require stronger integration of established management accounting and organizational theories to explain not only whether data analytics influences managerial practices, but also how, why, and under which organizational and institutional conditions it creates value. Such an approach would help embed data analytics within the core intellectual foundations of management accounting rather than treating it primarily as a technological phenomenon.

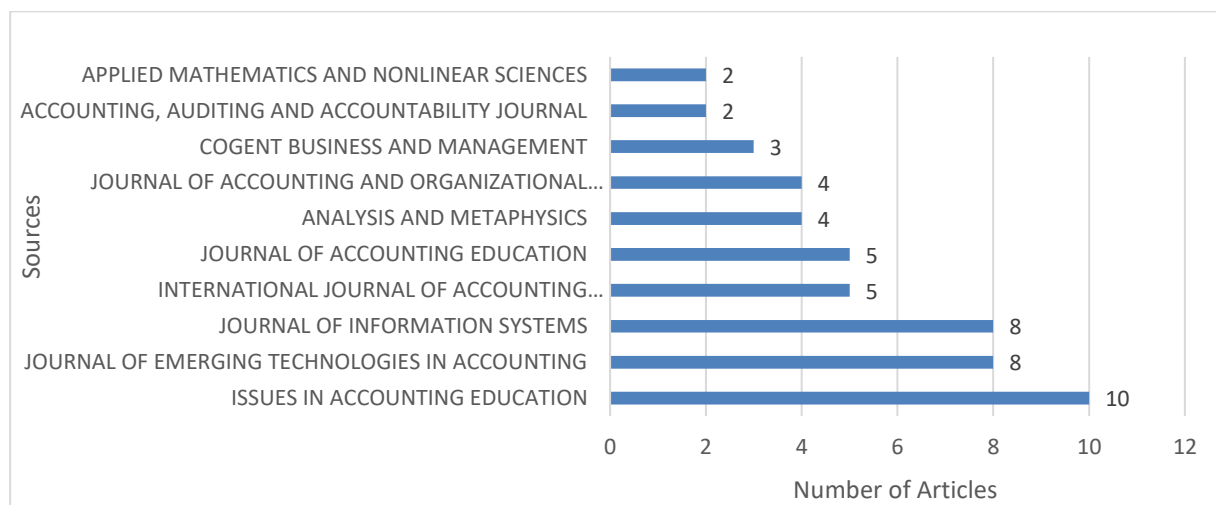


Figure 3. Most Relevant Sources

Source: Elaborated by the authors based on R.

Most Relevant Authors

The distribution of the most prolific authors shown in **Figure 4** demonstrates that research on data analytics in management accounting is characterized by a relatively dispersed pattern of scholarly contributions in contrast to intellectual dominance by a small group of leading researchers. Although Hui B.Q. and Fuk V.K. are the most prolific authors, each with only six articles, the relatively small gap between the leading contributors and the remaining authors signifies that the field has not yet developed a stable intellectual elite capable of consistently shaping its theoretical and methodological direction. This pattern is typical of emerging research areas, where knowledge production is distributed across numerous independent research groups investigating diverse applications, contexts, and methodologies. While such diversity promotes innovation and interdisciplinary collaboration, it may also impede theoretical convergence by generating fragmented streams of research that evolve in parallel with limited integration. Hence, the literature risks accumulating isolated empirical evidence without developing a coherent body of knowledge capable of advancing management accounting theory. This pattern highlights an important opportunity for future research. Future studies should move beyond producing isolated investigations by strengthening the existing evidence through theory-based comparative analyses, validation across multiple contexts, and collaborative international research programs. Particular attention should be devoted to integrating findings across different analytical technologies and organizational and institutional environments to develop robust interpretive frameworks for understanding how data analytics transforms management accounting practices. Strengthening collaboration among leading research groups while drawing on established theoretical perspectives would facilitate the transition from dispersed empirical contributions to a more cumulative and theoretically coherent research agenda.

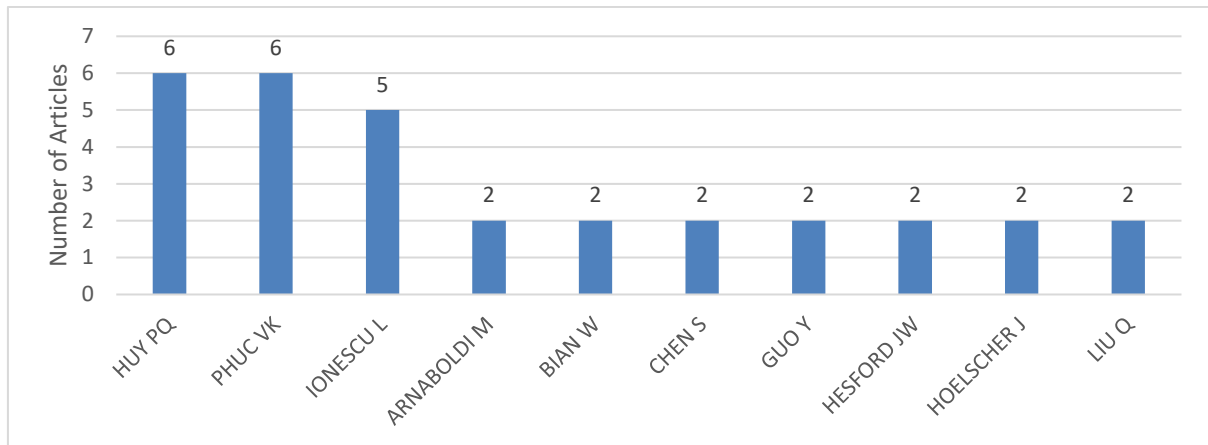


Figure 4. Most Relevant Sources

Source: Elaborated by the authors based on R.

Geographic Distribution of Research

The geographic distribution of scientific production presented in **Table 2** illustrates a notable concentration of research on data analytics in management accounting within a limited number of countries, with the United States emerging as the leading contributor, followed by China, Indonesia, and Romania. While this leadership reflects stronger research infrastructure, greater investment in digital technologies, and earlier adoption of advanced analytics, it also exposes a substantial imbalance in the current knowledge base. The predominance of evidence generated in technologically advanced and institutionally mature environments suggests that existing theories, empirical findings, and managerial recommendations have largely been developed under specific regulatory, governance, and digital conditions that may not be representative of other settings. Thus, the external validity of the literature remains uncertain, particularly for developing and emerging economies, where differences in digital infrastructure, institutional quality, regulatory frameworks, organizational culture, and human capital may substantially influence both the adoption and effectiveness of data analytics in management accounting. The limited representation of many regions further underscores that the literature has not yet fully captured the contextual diversity underlying the global digital transformation of management accounting. Accordingly, this geographic concentration represents not merely a distributional pattern but a fundamental limitation of the field, as theories developed within a limited set of institutional environments may not adequately explain managerial practices across diverse economic contexts. Addressing this limitation requires a more internationally balanced research agenda that prioritizes cross-country comparative studies, particularly those involving emerging and developing economies, to examine how institutional, cultural, technological, and governance factors shape the adoption and organizational value of data analytics. Such research should move beyond assessing whether analytical technologies improve management accounting outcomes and instead explain why the organizational effects of similar technologies differ across institutional contexts, thereby contributing to the development of more generalizable and context-sensitive theoretical frameworks.

Table 2. Number of Documents per Country

Country	Freq
USA	90
CHINA	28
INDONESIA	16
ROMANIA	12
MALAYSIA	7
AUSTRALIA	5
CANADA	5
NORWAY	5
PORTUGAL	5
UK	5

Source: Elaborated by the authors based on R.

Impact Analysis of Sources and Documents

Influential Documents

The analysis of the most influential documents reported in **Table 3** offers key insights into the intellectual foundations of research on data analytics in management accounting. The predominance of highly cited studies published between 2014 and 2018 suggests that the early development of this field was driven by pioneering contributions that introduced the transformative potential of big data, business intelligence, digital transformation, and advanced analytics for accounting practice. These influential studies established the intellectual legitimacy of data analytics by underscoring its capacity to improve decision making, enhance accounting information systems, automate routine tasks, and reshape the professional role of accountants. However, the concentration of citations around these foundational contributions also exposes a considerable gap in the evolution of the literature. Most highly cited studies have focused primarily on demonstrating the importance of data analytics and identifying its opportunities and challenges, while comparatively little attention has been devoted to explaining how analytical capabilities create organizational value, the mechanisms through which they influence management accounting processes, and the conditions under which these effects emerge. As a consequence, the intellectual influence of these pioneering contributions has encouraged the widespread adoption of technology-oriented research agendas, while important theoretical and empirical questions remain unresolved. This finding signals that the field continues to rely heavily on its foundational narratives despite the rapid evolution of analytical technologies, including artificial intelligence, generative AI, explainable AI, predictive analytics, and autonomous decision support systems. Building on these intellectual foundations therefore requires a transition from conceptual advocacy to theory-driven explanation. Future research should move beyond reaffirming the importance of data analytics and instead examine the causal mechanisms through which analytical capabilities reshape budgeting, performance management, managerial control systems, strategic decision making, and organizational learning. Greater emphasis should be placed on theory-driven investigations that explain how these technologies affect managerial decision making and management accounting processes across diverse contexts.

Table 3. Most Influential Documents

Paper	DOI	Title	Total Citations	TC per Year
Warren JD Jr, 2015	10.2308/acch-51069	How Big Data Will Change Accounting	394	32.83
Bhimani A, 2014	10.1080/00014788.2014.910051	Digitisation, 'Big Data' and the transformation of accounting information	367	28.23
Rikhardsson P, 2018	10.1016/j.accinf.2018.03.001	Business intelligence & analytics in management accounting research: Status and future focus	264	29.33
Richins G, 2017	10.2308/isys-51805	Big Data Analytics: Opportunity or Threat for the Accounting Profession?	260	26.00
Arnaboldi M, 2017	10.1108/AAAJ-03-2017-2880	Accounting, accountability, social media and big data: revolution or hype?	238	23.80
Huerta E, 2017	10.2308/isys-51799	An Accounting Information Systems Perspective on Data Analytics and Big Data	126	12.60
Hoelscher J, 2018	10.1016/j.jaccedu.2018.05.002	Using Tableau to visualize data and drive decision-making	101	11.22
Alles M, 2016	10.1016/j.accinf.2016.07.004	Incorporating big data in audits: Identifying inhibitors and a research agenda to address those inhibitors	99	9.00
Korhonen T, 2021	10.1108/AAAJ-12-2016-2809	Exploring the programmability of management accounting work for increasing automation: an interventionist case study	83	13.83
Andreassen R-I, 2020	10.1007/s00187-020-00303-2	Digital technology and changing roles: a management accountant's dream or nightmare?	72	10.29

Source: Elaborated by the authors based on R.

Source Impact

Table 4 shows that academic influence in research on data analytics in management accounting is determined not only by publication volume but also by the ability of particular journals to shape its intellectual evolution. Although several journals have published a relatively large number of articles, citation indicators demonstrate that scholarly influence is concentrated within a smaller group of outlets, particularly those specializing in accounting information systems and interdisciplinary accounting research. This pattern demonstrates that the evolution of the literature has been driven less by the accumulation of articles than by a limited number of journals that have provided platforms for introducing and legitimizing new theoretical and methodological perspectives on digital transformation in accounting. At the same time, the divergence between publication productivity and citation impact shows a significant limitation of the existing literature. While the dispersion of studies across numerous journals has increased the visibility of the topic, it has not been accompanied by a comparable diffusion of scholarly influence, implying that many contributions remain incremental rather than transformative. This concentration of impact further signals that the theoretical direction of the literature continues to be shaped by a relatively narrow set of editorial and disciplinary perspectives, potentially limiting conceptual diversity and slowing the integration of alternative management accounting theories. Consequently, future research should seek not only to increase scientific production but also to produce contributions capable of advancing the field's intellectual agenda. This requires moving beyond descriptive applications of analytical technologies toward theory-driven investigations that provide new explanations of how data analytics transforms management accounting practices, managerial behavior, and organizational decision making. Furthermore, increasing the presence of such studies in leading, high-impact management accounting journals would broaden the field's theoretical scope and facilitate the integration of data analytics into the core debates of management instead of confining it primarily to accounting information systems and technology-oriented journals.

Table 4. Source Impact

Source	h_index	g_index	m_index	TC	NP	PY_start
JOURNAL OF INFORMATION SYSTEMS	7	8	0.7	449	8	2017
ISSUES IN ACCOUNTING EDUCATION	6	9	1	98	10	2021
INTERNATIONAL JOURNAL OF ACCOUNTING INFORMATION SYSTEMS	5	5	0.455	478	5	2016
ANALYSIS AND METAPHYSICS	4	4	0.5	92	4	2019
JOURNAL OF ACCOUNTING AND ORGANIZATIONAL CHANGE	4	4	0.444	196	4	2018
JOURNAL OF ACCOUNTING EDUCATION	4	5	0.364	147	5	2016
COGENT BUSINESS AND MANAGEMENT	3	3	0.75	37	3	2023
JOURNAL OF EMERGING TECHNOLOGIES IN ACCOUNTING	3	6	0.273	42	8	2016
ACCOUNTING, AUDITING AND ACCOUNTABILITY JOURNAL	2	2	0.2	321	2	2017
JOURNAL OF SENSORS	2	2	0.4	13	2	2022

Source: Elaborated by the authors based on R.

Conceptual Structure

Keyword Co-Occurrence Network

Figure 5 shows three closely related areas within the conceptual structure of data analytics in management accounting. The first is centered on management accounting and big data, with strong associations with machine learning, automation, and digitalization. This configuration shows that a substantial part of the literature examines the implications of data-intensive analytical methods for accounting practices. The second area links data analytics with accounting information systems, drawing attention to the connection between analytical applications and the systems through which accounting information is generated, processed, and communicated. The third brings together artificial intelligence, blockchain, information technology, and accounting education, extending the research landscape toward emerging applications and the competencies required in increasingly digital accounting environments.

The network also reveals an uneven connection between these themes and established management accounting functions. Keywords such as budgeting, performance measurement, management control, strategic planning, and managerial decision making occupy less prominent positions than the technology-oriented terms. This pattern suggests that the literature has placed greater scholarly attention on the tools and infrastructures associated with analytics than on their integration into specific management accounting processes. Importantly, the network identifies this difference in research attention; it does not establish that one set of topics is substantively more important than another.

A further feature is the association among artificial intelligence, machine learning, blockchain, automation, and digital transformation. Their proximity reflects increasing convergence among research streams that were previously examined more separately. However, co-occurrence reflects their appearance within the same research corpus and not evidence that these technologies are jointly implemented or mutually reinforcing in organizational settings. This distinction opens a valuable avenue for empirical research on whether and how multiple technologies are combined within management accounting systems.

Taken together, the network points to a clear research gap at the intersection between analytics and core management accounting activities. Future studies could examine how these developments affect budgeting, forecasting, performance measurement, cost management, and management control, while also investigating the organizational and institutional conditions that shape their use. Such research would connect the technological themes identified in **Figure 5** more directly with the accounting processes and managerial outcomes at the center of management accounting.

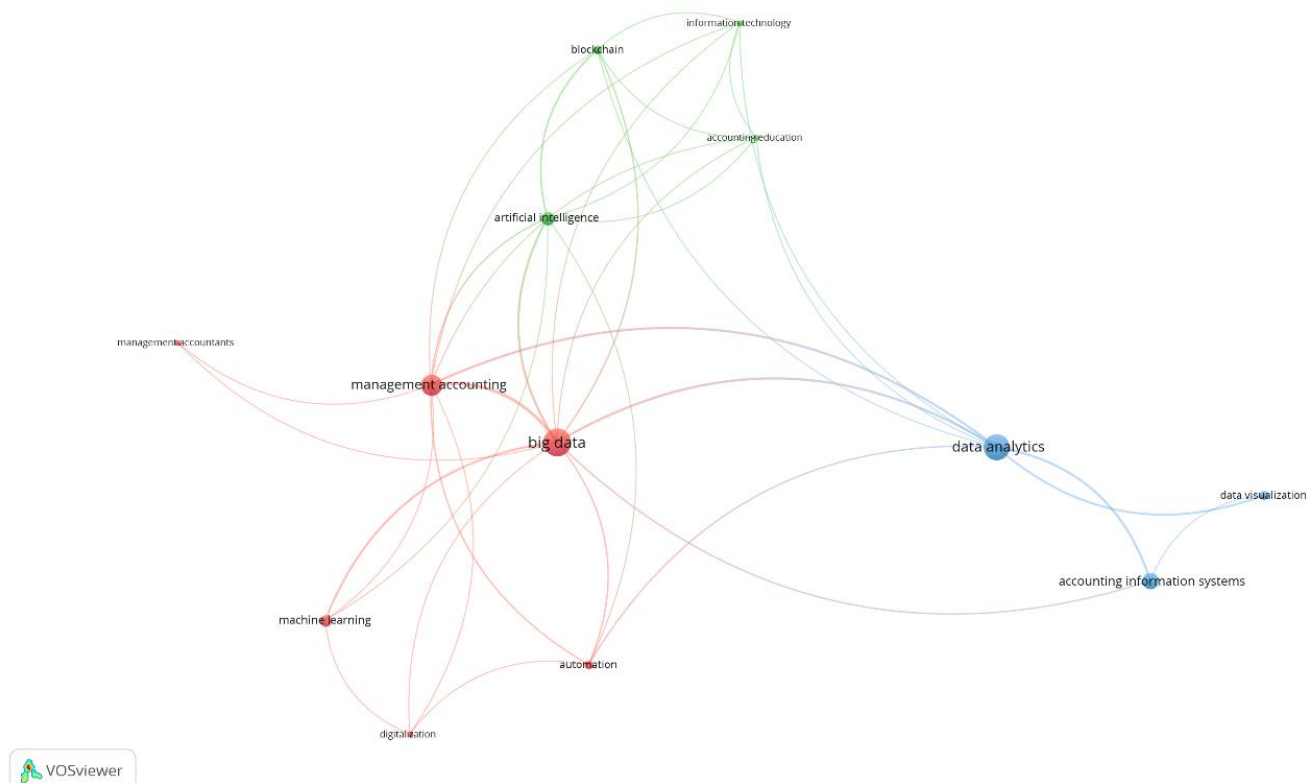


Figure 5. Keyword Co-Occurrence Network

Source: Elaborated by the authors based on VOSviewer.

Thematic Map

Figure 6 exhibits an uneven pattern in the development and integration of research themes. Big data, artificial intelligence, and machine learning occupy the motor-theme quadrant, combining high centrality with relatively high density. Their position implies that these topics are not only internally developed but also strongly connected to the broader structure of the field. This suggests that the literature has achieved a relatively consolidated knowledge base around several technology-oriented topics. The inclusion of blockchain technology and cloud

computing in this quadrant further signals that the field is expanding through several interconnected technological streams instead of developing around a single emerging technology.

The position of data analytics and data visualization as basic themes points to a different form of development. Their high centrality but comparatively lower density indicates that they are widely connected to different areas of the literature without having developed into equally cohesive research streams. This may reflect a conceptual fragmentation in which analytics is widely invoked across studies but addressed through diverse perspectives and applications. A relevant research gap therefore concerns the development of more coherent conceptual and methodological foundations for data analytics itself, including clearer distinctions between analytical approaches, their underlying information requirements, and their role within management accounting research.

The niche position of management accounting, accounting education, and information technology is particularly revealing. Their relatively high density combined with lower centrality implies that these themes possess established internal research communities but remain insufficiently connected to the wider thematic structure. For management accounting, this creates a notable structural paradox: the field provides the substantive context of the literature, yet the thematic map places it outside the most interconnected areas of research. This may suggest that technology-oriented research and management accounting scholarship have developed along partially separate trajectories. Future research could therefore investigate the theoretical and organizational mechanisms that connect these two streams, as opposed to simply extending either stream independently.

Strategic management accounting occupies the emerging-or-declining quadrant, characterized by low centrality and density. The map cannot determine whether this position reflects an emerging theme or declining attention; however, it does identify strategic management accounting as insufficiently developed and weakly connected within the present research structure. This creates a significant opportunity for future studies to establish how contemporary analytical developments can be theoretically incorporated into strategic management accounting and to determine whether this area can evolve from a peripheral topic into a more integrated research stream.

The relatively peripheral position of accounting information systems raises a related issue. Although information systems constitute an important interface between accounting data and analytical applications, their limited thematic connectivity suggests that research on systems, analytics, and management accounting has not yet formed a fully integrated intellectual stream. Future research could address this fragmentation by examining the organizational and institutional conditions under which information systems become integrated with analytical practices and management accounting research.

Taken together, the thematic map suggests that the principal challenge facing the literature is no longer simply the identification of emerging technologies, but the uneven integration and development of the themes surrounding them. The field has comparatively consolidated clusters around several technologies, while important accounting-oriented themes remain either specialized, peripheral, or insufficiently connected to the broader structure. This creates three particularly relevant directions for future research: first, developing stronger conceptual foundations for data analytics as a distinct research domain; second, examining how management accounting scholarship can be theoretically integrated with technology-oriented research; and third, investigating the conditions that enable currently peripheral themes, particularly strategic management accounting and accounting information systems, to become more connected to the wider field. Such research would move the literature beyond the accumulation of technology-specific studies toward a more integrated understanding of how the different knowledge domains identified by the thematic map relate to one another.

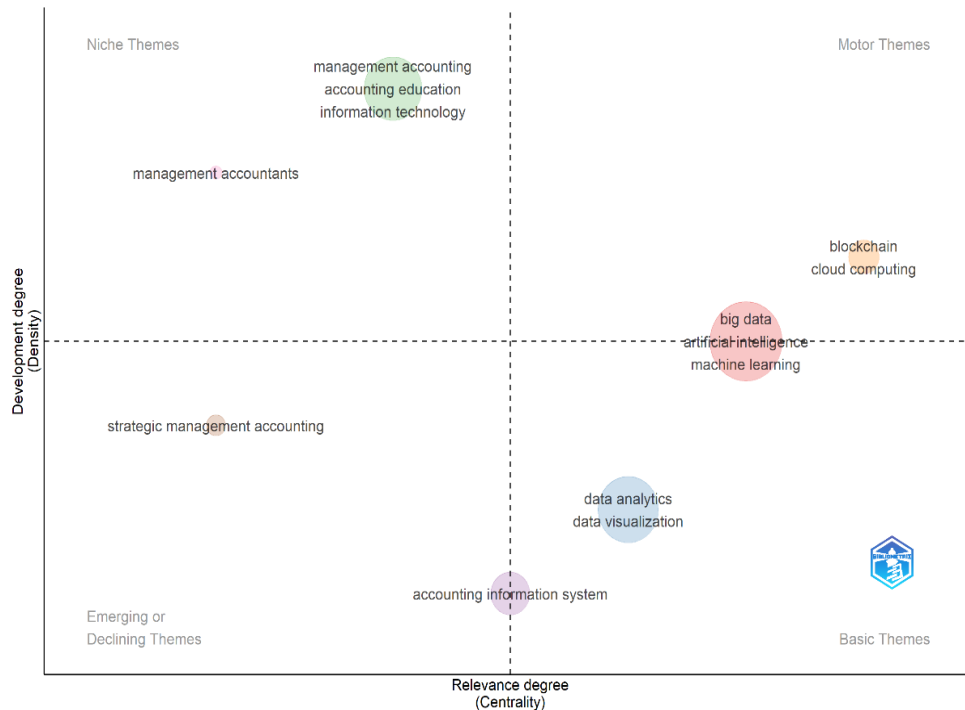


Figure 6. Thematic Map

Source: Elaborated by the authors based on R.

International Collaboration

Figure 7 displays a geographically asymmetrical structure of international collaboration in research on data analytics in management accounting. The United States occupies the most connected position in the network, with substantial links to China, the United Kingdom, Canada, Australia, and India, while China also forms a prominent collaborative hub. These connections demonstrate that international research activity is organized around a relatively small number of highly connected countries and is not distributed evenly across the global research community. At the same time, several regional clusters remain comparatively weakly connected to the main network, showing that geographic proximity continues to shape collaboration patterns.

This structure has implications beyond the distribution of scientific output. The concentration of collaboration around a limited number of countries may restrict the range of institutional and organizational settings represented in the literature. Where researchers collaborate predominantly within established regional or high-output networks, evidence may be generated from relatively similar regulatory, technological, educational, and organizational environments. The resulting concern is therefore not simply geographical imbalance, but the limited cross-contextual examination of how data analytics in management accounting develops under different institutional conditions.

A further gap concerns the limited visibility of cross-country comparative research within the collaboration structure. Stronger links between otherwise separate regional clusters could facilitate studies that explicitly compare institutional environments instead of treating national contexts as independent cases. Future research could examine how differences in regulation, digital infrastructure, professional institutions, and organizational environments shape the development of management accounting analytics across countries. Such comparisons would also help distinguish context-specific findings from patterns that are more broadly applicable.

The network additionally points to an opportunity for broader interdisciplinary collaboration. The concentration of links within established accounting and technology-oriented research communities suggests scope for stronger connections with information systems, organizational studies, data science, and behavioral research. Developing such collaborations could broaden the theoretical and methodological perspectives brought to the field and provide a stronger basis for understanding how analytics operates across different organizational and institutional settings.

Overall, **Figure 7** shows that the internationalization of the literature has increased in breadth without producing an equally integrated global research network. Future research should therefore move beyond expanding the number of participating countries toward cross-contextual and cross-disciplinary integration, particularly by connecting currently separated regional networks and examining whether institutional differences produce systematically different research findings.

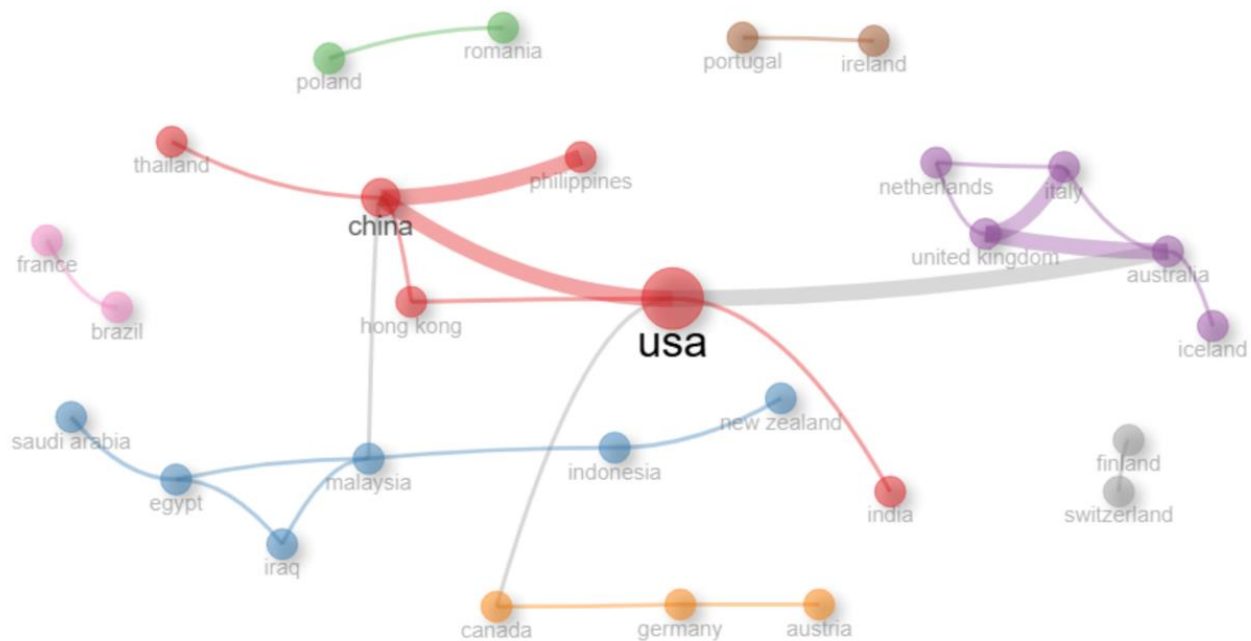


Figure 7. International Collaboration

Source: Elaborated by the authors based on R.

DISCUSSION

The bibliometric findings show that research on data analytics in management accounting has expanded substantially, accompanied by increasing international participation and growing engagement with emerging digital technologies. However, the intellectual structure of the literature suggests that this expansion has been strongly oriented toward technological themes. The prominence of concepts such as big data, artificial intelligence, machine learning, blockchain, and cloud computing in the keyword and thematic analyses demonstrates that technological capabilities constitute a major focus of scholarly attention. By contrast, management accounting concepts such as strategic management accounting, management control, budgeting, and performance measurement appear less central within the observed conceptual structure. These patterns do not establish a lack of theoretical development, but they suggest that technological dimensions have received greater visibility than the management accounting mechanisms through which analytics may influence organizational processes and managerial decision-making.

The findings also reveal a degree of fragmentation within the research domain. The distribution of publications across multiple journals and the patterns of collaboration imply that research on data analytics in management accounting remains dispersed across different disciplinary and geographical communities. Such interdisciplinary dispersion can broaden the scope of the field by bringing together accounting, information systems, data science, and management research. At the same time, the absence of a highly concentrated research community may make the accumulation of a coherent body of knowledge more difficult. Future research could therefore benefit from stronger integration between technological perspectives and established management accounting frameworks, particularly those concerned with management control, performance measurement, decision support, and organizational change.

The geographical distribution of the literature provides a further direction for research. The concentration of

publications and collaborations in a limited number of countries signifies that the existing evidence is not evenly distributed across institutional contexts. This pattern is important because the implementation and organizational consequences of data analytics may depend on factors such as digital infrastructure, regulatory environments, organizational capabilities, and resource availability. Greater empirical attention to emerging and developing economies could therefore provide evidence on whether relationships identified in technologically mature contexts are also observable under different institutional and digital conditions.

Based on these findings, the future research agenda should move beyond examining individual technologies in isolation and place greater emphasis on the mechanisms linking analytical capabilities to management accounting practices. First, future studies could examine how combinations of analytics technologies affect budgeting, performance measurement, management control, forecasting, and managerial decision making. Second, researchers could integrate data analytics with established management accounting theories to explain the organizational conditions under which analytical capabilities generate changes in accounting practices. Third, comparative research across countries and institutional environments could examine how differences in digital maturity, regulation, organizational capabilities, and resource constraints shape the adoption and use of analytics. Finally, greater integration between accounting and information systems research could help connect technological developments with their organizational and managerial implications.

Overall, the bibliometric evidence portrays data analytics in management accounting as a rapidly expanding and increasingly interdisciplinary research domain. The principal opportunity for future scholarship is not simply to document the emergence of new technologies, but to develop stronger explanations of how analytical capabilities interact with management accounting systems, organizational contexts, and managerial decision processes. Such a research agenda would contribute to a more integrated understanding of the relationship between technological development and the evolution of management accounting.

CONCLUSION

This study examined the intellectual, thematic, and collaborative structure of research on data analytics in management accounting through a bibliometric analysis of 2014–2025 publications indexed in Scopus. The findings show a growing and increasingly international research area, but one whose development is characterized by different levels of thematic maturity and integration. The analyses consistently identify a strong presence of big data, artificial intelligence, machine learning, and related technologies, while also pointing to weaker connections between these themes and several established management accounting domains. The thematic structure further shows that some technology-oriented topics are relatively well developed and highly connected, whereas other accounting-oriented themes remain more specialized or peripheral. The international collaboration analysis adds a geographical dimension to these findings, showing that research activity is concentrated around major collaboration hubs and that connections across some regional networks remain limited.

These findings contribute to the literature in three respects. First, the study integrates performance analysis, keyword co-occurrence, thematic mapping, citation analysis, and international collaboration analysis to provide a multidimensional account of the field, not an account focused on publication growth or citation patterns alone. Second, it identifies structural gaps that are not apparent from publication volume alone, particularly the limited integration among thematic areas, the peripheral position of some management accounting domains, and the concentration of international collaboration. Third, it translates these findings into a focused research agenda centered on three priorities: strengthening conceptual connections between analytics and management accounting scholarship, developing comparative evidence across institutional and organizational contexts, and expanding collaboration across currently separated geographical and disciplinary research communities.

Several limitations should be acknowledged. The analysis is based exclusively on Scopus-indexed publications and is restricted to English-language journal articles published in final form between 2014 and 2025. Relevant studies indexed elsewhere, published in other languages, or appearing in other publication formats may therefore be absent from the corpus. In addition, bibliometric techniques rely primarily on bibliographic metadata, citations, and keyword relationships. They reveal patterns in the structure and development of the literature but cannot independently assess the theoretical quality, methodological rigor, or substantive effects reported in individual studies. The interpretation of thematic positions should consequently be understood within the analytical parameters used to construct the bibliometric maps.

Overall, the evidence shows that research on data analytics in management accounting has expanded considerably while remaining structurally differentiated across technological, accounting, geographical, and disciplinary domains. The next stage of the field's development therefore depends not simply on increasing the volume of research, but on strengthening connections among these domains. Greater theoretical integration, cross-contextual evidence, and broader international and interdisciplinary collaboration can provide a basis for developing a more coherent body of scholarship on the role of analytics within management accounting.

REFERENCES

- Abdelhalim, A. M., (2024). How Management Accounting Practices Integrate with Big Data Analytics and Its Impact on Corporate Sustainability. *Journal of Financial Reporting and Accounting*, 22(2), pp. 416–432.
- Aria, M. & Cuccurullo, C., (2017). bibliometrix: An R-tool for comprehensive science mapping analysis. *Journal of Informetrics*, 11(4), pp. 959–975. 10.1016/j.joi.2017.08.007
- Corradino, L. J., (2021). Data Analytics: Integration into A Graduate Managerial Accounting Course. *Business Education Innovation Journal Contents*, 12(02).
- Fahlevi, H., Irsyadillah, I., Indriani, M. & Rina Suryani Oktari, . R. S., (2022). DRG-Based Payment System and Management Accounting Changes in An Indonesian Public Hospital: Exploring Potential Roles of Big Data Analytics. *Journal of Accounting & Organizational Change*, 18(2), pp. 325–345. 10.1108/JAOC-10-2020-0179
- Franke, F. & Martin R.W, H., (2023). Big Data and Decision Quality: The Role of Management Accountants' Data Analytics Skills. *International journal of accounting & information management*, 31(1), pp. 93–127. 10.1108/IJAIM-12-2021-0246
- Gaikwad, R. R. & Damodaran, D., (2024). The Rise of Predictive Analytics in Management Accounting: from Descriptive to Prescriptive. *Journal of Artificial Intelligence*, 1(1), pp. 159–167. 10.29121/shodhai.v1.i1.2024.54
- Guo, Z., Sun, Y., Li, J. & Lu, M., (2024). The Influence of Business Analytics on Modern Management Accounting Informatization Decision under The Background of Big Data. *Accounting and Corporate Management*, 6(1), pp. 101–107.
- Khan, M. S. U., (2024). Performance Measurement in The Digital Era: Review Literature at The Intersection of Management Accounting, Big Data Analytics and Emerging Technologies' Impact on Performance Evaluation. *International Journal of Research and Scientific Innovation*, 11(8), pp. 94–101. 10.51244/IJRSL.2024.1108009
- Masuke, R., Middelberg, u. L., Buys, P. & Gulko, N., (2025). Big Data Analytics and Its Influence on Management Accounting: Evidence from Southern Africa. *Studia Universitatis Babes-Bolyai*, 70(1), pp. 7–26. 10.1108/JFRA-01-2023-0053
- Nielsen, S., (2022). Management Accounting and The Concepts of Exploratory Data Analysis and Unsupervised Machine Learning: A Literature Study and Future Directions. *Journal of Accounting & Organizational Change*, 18(5), pp. 811–853. 10.1108/JAOC-08-2020-0107
- Pare, S. et al., (2025). The Role of Big Data Analytics in Enhancing Decision-Making Processes in Business Accounting. *Journal of Hunan University Natural Sciences*, 52(5), pp. 16–25.
- Pavlovic, M., Gligoric, C., Zdravkovic, F. & Pavlovic, D., (2024). Revolutionizing Management Accounting: The Role of Artificial Intelligence in Predictive Analytics, Automated Reporting, and Decision-Making. *Business & Management Compass*, 68(4), pp. 23–42. 10.56065/nxn2gx53
- Prakoso, T. & Apriliani, R., (2025). Utilisation of Big Data Analytics in Accounting Information Systems to Improve The Quality of The Corporate Financial Decision Making. *Inter National Journal of Finacial Economics*, 2(6), pp. 649–658.
- Ramadanty, J. & Putri, M., (2024). Redefining Management Accounting Systems: A Systematic Review of Recent Advances and Future Directions. *Journal of Advances in Accounting, Economics, and Management*, 2(2), pp. 1–8.
- Siahaan, S. B. et al., (2025). Strategic Management Accounting and Digital Transformation: The Role of Big Data Analytics in Decision Making. *Journal of Accounting USI*, 7(2), pp. 521–544 10.36985/vsskcg83
- Spraakman, G. & Rodriguez, C. S., (2021). Data Analytics by Management Accountants. *Qualitative Research in Accounting & Management*, 18(1), pp. 127–147, 10.1108/QRAM-11-2019-0122

- Tenhunen, M.-L., (2025). AI-Driven Management Accounting: A New Frontier in Strategic Finance. *Economics*, 14(95), pp. 87–95.
- Thanasas, G. L. & Kampiotis, G., (2024). The role of Big Data Analytics in Financial Decision-Making and Strategic Accounting. *Technium Business and Management*, Volume 10, pp. 17–33.
- Trinh, H. T., (2026). An SME Approach to Data Analytics by Management Accountants in The Transition Economy of Vietnam. *Journal of Science and Technology Policy Management*, 17(3), pp. 547–568. 10.1108/JSTPM-12-2023-0222
- Uyar, M., (2021). The Role of Business Analytics in Transforming Management Accounting Information into Cost Performance. *Ege Academic Review*, 21(4), pp. 373–389. 10.21121/eab
- Vysotskaya, A. & Prokofieva, M., (2025). Management Accounting and Data Analytics: Technology Acceptance from The Educational Perspective. *Accounting Education*, 34(3), pp. 410–433. 10.1080/09639284.2024.2338140
- Wadesango, N., Rambanepasi, F. T. & Sitsha, L., (2024). Impact of Big Data Analytics on Management Accounting. Case Study of ZB Financial Holdings, Gweru. *Journal of Economic and Social Development*, 12(02), pp. 68–80.