ARTIFICIAL INTELLIGENCE AND BLOCKCHAIN IN ACCOUNTING: A BIBLIOMETRIC ANALYSIS OF RESEARCH TRENDS AND THEMES (1984–2025)

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Abstract- *This study employs a bibliometric analysis to map the intellectual structure and emerging trends in AI and blockchain research within the accounting field. A total of 245 peer-reviewed articles published between 1984 and 2025 were extracted from the Scopus database, focusing on the domains of business, management, and accounting. The analysis combines quantitative indicators (co-authorship, keyword co-occurrence, citation patterns) with qualitative thematic interpretation. Data visualization and cluster mapping were conducted using VOSviewer.Findings reveal three distinct phases of research development, with exponential growth from 2017 onwards. The USA and China lead in research output, while collaboration remains limited across institutions and disciplines. Thematic clusters include AI and data analytics, blockchain and security, and traditional accounting concerns. However, critical areas such as ethics, regulation, and SME adoption are underrepresented.This study highlights the need for more interdisciplinary, policy-oriented, and context-aware research. Addressing current gaps through collaborative and applied approaches is essential to fully realize the potential of disruptive technologies in accounting.*

1. INTRODUCTION

In recent years, the accounting profession has undergone profound transformations driven by technological innovation. Among the most disruptive of these innovations are AI and BT, two digital frontiers that are reshaping the foundations of how financial information is generated, verified, and communicated. Their potential to automate processes, increase transparency, enhance data integrity, and reduce transactional costs has stimulated significant academic interest and provoked critical reflection on the future of accounting theory and practice. In this context of accelerated digital transformation, understanding the evolving research landscape surrounding these technologies is essential for both scholars and practitioners.

AI, encompassing techniques such as machine learning, natural language processing, and robotic process automation, is increasingly applied to audit processes, fraud detection, predictive analytics, and decision support systems. Similarly, blockchain, as a decentralized and immutable ledger technology, offers new possibilities for real-time reporting, transaction verification, and smart contract implementation. These innovations challenge traditional accounting paradigms, raise complex ethical and regulatory questions, and demand a redefinition of roles, competencies, and institutional structures within the profession.

Despite the rapid growth in publications on AI and blockchain in accounting, the field remains fragmented and lacks a coherent synthesis of its intellectual structure and thematic priorities. Numerous studies address these technologies from technical, managerial, or ethical standpoints, yet few adopt a comprehensive approach that maps the evolution, collaboration networks, and emerging research fronts. Moreover, the literature often focuses on theoretical potential rather than empirical implementation, with limited attention paid to the challenges faced by small and medium-sized enterprises (SMEs), regulatory authorities, or developing regions. These gaps underscore the need for a systematic and data-driven analysis to assess where the field currently stands and where it is heading.

To address this need, the present study conducts a bibliometric analysis of research at the intersection of AI, blockchain, and accounting. Bibliometric methods offer powerful tools to evaluate large volumes of scientific output, detect publication trends, identify influential authors and institutions, and uncover thematic clusters. By combining quantitative analysis with qualitative interpretation, this study seeks to contribute a structured overview of the state of research and offer insights into underexplored areas that warrant further investigation.

The objectives of the study are threefold. First, it aims to trace the evolution of scientific production over time and identify key periods of growth and maturity in the literature. Second, it seeks to map the collaboration networks among authors, institutions, and countries, thereby shedding light on patterns of knowledge production and diffusion. Third, it analyzes keyword co-occurrence and citation patterns to detect dominant themes, theoretical influences, and intellectual gaps. Special attention is given to aspects that are often marginalized in mainstream research—such as ethical implications, regulatory frameworks, and adoption barriers in emerging markets.

The originality of this study lies not only in the bibliometric approach but also in its critical interpretation of the results in light of the existing literature. While previous reviews have provided valuable insights into either AI or blockchain individually, few have addressed their combined impact within the accounting field from a holistic, data-driven perspective. This dual focus enables a richer understanding of how these technologies intersect, converge, or diverge in their influence on accounting thought and practice.

The rest of this paper is structured as follows: Section 2 presents the literature review, and the methodology, detailing the data collection, analysis tools, and criteria used for bibliometric evaluation are presented in Section 3. Sections 4 and 5 presents the main results of the bibliometric analysis. Section 6 offers a critical discussion, connecting the findings to the broader literature and highlighting existing gaps and future research directions. Finally

Section 7 concludes with a summary of key insights, research limitations, and recommendations for future research.

2. LITERATURE REVIEW

In recent years, BT and AI have emerged as transformative tools across various domains, including accounting. Originally rooted in computer science, these technologies have gradually infiltrated business disciplines, reshaping traditional accounting practices and challenging foundational principles. As organizations strive for increased transparency, security, and efficiency, researchers and professionals alike have shown a growing interest in understanding how BT and AI redefine accounting processes and systems.

BT, introduced by Nakamoto (2008), is a distributed ledger system that records transactions securely and transparently without the need for intermediaries. While it gained initial fame as the infrastructure behind Bitcoin, BT's potential has expanded into diverse sectors such as supply chain management, healthcare, and accounting (Swan, 2015; Xu et al., 2019). According to Swan (2015), BT's evolution can be categorized into three stages: Blockchain 1.0 focused on cryptocurrency; Blockchain 2.0 introduced applications in financial services like smart contracts and equities; and Blockchain 3.0 extended its use to areas like government, health, and education.

In accounting, BT is considered a disruptive force that enables significant operational improvements. Traditionally reliant on double-entry bookkeeping and third-party verifications, accounting systems can now integrate BT to utilize a triple-entry ledger system. This model introduces a shared ledger verified through cryptographic algorithms, which enhances trust, reduces fraud risk, and enables real-time updates (Kiviat, 2015; Dai & Vasarhelyi, 2017; Yermack, 2017). Transactions in BT are immutable and timestamped, and they rely on consensus protocols to ensure accuracy and security (Lin & Liao, 2017; Zhang et al., 2019). As a result, blockchain allows for decentralized audit trails and real-time financial reporting.

The potential of BT in accounting extends beyond efficiency. It enhances data integrity, transparency, and accountability (Tapscott & Tapscott, 2017b). These capabilities align closely with the core principles of International Financial Reporting Standards (IFRS), including relevance, reliability, comparability, and timeliness (Kokina et al., 2017; Bonsón & Bednárová, 2019). For instance, the ledger's immutability ensures accuracy, while its open access supports transparency and fairness. Consequently, BT can transform core accounting activities—transaction authorization, processing, recording, and reporting—into more streamlined and automated processes (Schmitz & Leoni, 2019).

Parallel to blockchain, AI is reshaping how accountants interpret data, detect anomalies, and make strategic decisions. Machine learning algorithms can analyze vast volumes of unstructured data, uncover patterns, and generate predictive insights. These capabilities are particularly useful in auditing, where AI can perform continuous assessments and flag irregularities (Faccia & Mosteanu, 2019). AI's integration in accounting also facilitates advanced financial forecasting, fraud detection, and process automation, enabling professionals to shift from data entry to data interpretation and strategic advising.

Despite these technological advances, academic literature in accounting has only recently begun to thoroughly investigate the implications of BT and AI. A key study by Schmitz and Leoni (2019) emphasizes the need for rethinking audit roles, internal controls, and governance frameworks in light of these tools. They highlight emerging themes such as continuous auditing, automated smart contracts, and increased demand for technical proficiency among accountants.

Furthermore, reviews such as those by Grover et al. (2018) and Kummer et al. (2020) underscore the interdisciplinary nature of blockchain research and the importance of organizational theory in framing its impacts. Kummer et al. identify key theoretical lenses—agency theory, institutional theory, transaction cost economics—that help explain the strategic implications of blockchain in accounting and logistics.

Another significant area of interest is how BT and AI alter the profession itself. As technology automates routine tasks, accountants are expected to develop new competencies in data analytics, cybersecurity, and information systems (CPA Canada et al., 2017). The shift from traditional to digital accounting implies not only new tools but also a fundamental transformation in mindset and methodology (Casey & Vigna, 2018). Accountants must now function as technology integrators and strategic advisors, navigating complex systems and interpreting outputs generated by AI models and blockchain networks.

Despite the promise, challenges remain. Integration of BT and AI in accounting faces resistance due to regulatory uncertainties, high implementation costs, and lack of technical expertise. Furthermore, as highlighted by O'Leary (2017) and Sinha (2020), many firms struggle to balance innovation with compliance and data security. For small and medium enterprises, in particular, the adoption curve is steep and requires significant investment in training and infrastructure.

To address these gaps, bibliometric and thematic analyses have become valuable tools. They offer an objective overview of how scholarly attention evolves over time and highlight emerging research directions (Bruns et al., 2020; Tiron-Tudor et al., 2021). For instance, bibliometric studies reveal exponential growth in publications since 2018, particularly in high-impact journals and from authors with interdisciplinary backgrounds.

In conclusion, while the integration of BT and AI into accounting systems is still in its early stages, its potential to transform the field is undeniable. These technologies promise enhanced transparency, efficiency, and reliability, aligning well with accounting's evolving goals. However, significant research is still needed to fully understand their theoretical and practical implications, especially in areas such as financial reporting for crypto assets, governance, and auditor responsibilities. The current literature calls for a multidisciplinary approach that bridges technical innovations with managerial and regulatory insights. A comprehensive and updated bibliometric analysis is therefore essential to map the state of knowledge, identify key contributors, and propose a roadmap for future investigations.

3. METHODOLOGY

This study adopts a bibliometric analysis approach to explore the intersection of disruptive technologies—specifically AI (AI), blockchain, and machine learning—and the accounting domain. The methodology comprises three key stages: data collection, data refinement, and bibliometric mapping.

3.1 Data collection

This study analyzes 245 peer-reviewed articles from the Scopus database (1984-2025) focusing on business failure prevention, emerging technologies, and accounting. We employed bibliometric analysis using VOSviewer to visualize co-authorship networks, keyword co-occurrence patterns, and citation linkages.

The search strategy utilized the following Boolean query in Scopus:

TITLE-ABS-KEY ((("AI" OR "blockchain" OR "machine learning") AND ("accounting" OR "auditing" OR "financial reporting" OR "management accounting"))) AND (LIMIT-TO (SUBJAREA , "BUSI")) AND (EXCLUDE (DOCTYPE , "er") OR EXCLUDE (DOCTYPE , "ed") OR EXCLUDE (DOCTYPE , "no") OR EXCLUDE (DOCTYPE, "tb")).

This equation ensures that the search is restricted to the Business subject area, while excluding non-research document types such as editorials, notes, and book chapters. The search was executed in May 2025, and only documents published in English were included. No time restriction was initially applied to observe the temporal evolution of the research field.

3.2 Data refinement

After the initial data extraction, the dataset was manually screened to ensure relevance and consistency. Duplicates and documents unrelated to the intersection of accounting and disruptive technologies were removed. The final dataset included only peer-reviewed journal articles and conference proceedings that explicitly addressed technological applications in accounting.

3.3 Bibliometric analysis and visualization

The refined dataset was imported into VOSviewer (version [insert version used]) for bibliometric mapping. VOSviewer was used to conduct:

 - Co-authorship analysis (to identify the most collaborative authors and institutions),
 - Co-occurrence of keywords (to determine the main thematic clusters),
 - Citation and co-citation analysis (to uncover influential publications and intellectual structures).

Visualization maps were generated using VOSviewer's clustering algorithm, with thresholds adjusted for minimum occurrences (e.g., keywords appearing at least 5 times). The resulting bibliometric maps offer a graphical representation of the intellectual landscape and research hotspots at the intersection of AI, blockchain, and accounting.

4. DESCRIPTIVE BIBLIOMETRIC ANALYSIS

This descriptive bibliometric analysis aims to explore the main features of scientific research on the integration of AI, blockchain, and machine learning in accounting. It examines

publication trends, leading authors and co-authorship patterns, document types, and core journals. These indicators highlight the growing scholarly interest in digital technologies applied to accounting and reveal the structure of academic collaboration. The findings provide a foundation for deeper thematic and conceptual investigations into how these innovations are reshaping the accounting field.

4.1 The evolution of the annual volume of publications

The evolution of scientific production on the topic of AI, blockchain, and accounting between 1984 and 2025 reveals three distinct phases. During the initial period from 1984 to 2008, scholarly interest was minimal, with publication activity remaining sporadic and averaging only one to two articles per year. This phase reflects the exploratory nature of the field, where technological applications in accounting were not yet established as a significant research domain.

From 2009 to 2016, the field began to gain traction, with a gradual but noticeable increase in publications. A major turning point occurred in 2011, which saw a sharp rise in the number of studies published. This phase marks the beginning of a more structured research effort as scholars started to investigate the practical implications of digital technologies on accounting systems and processes.

The period from 2017 to 2025 illustrates a phase of exponential growth. The number of publications increased dramatically, reaching a peak of 358 in 2024. This reflects the widespread academic and professional interest in disruptive technologies, particularly in the context of automation, real-time reporting, and digital auditing. Although 2025 shows a slight decline, this is likely due to the data collection being incomplete for the year. Overall, the data demonstrates that this topic has evolved into a mature and dynamic field of research with significant future potential.
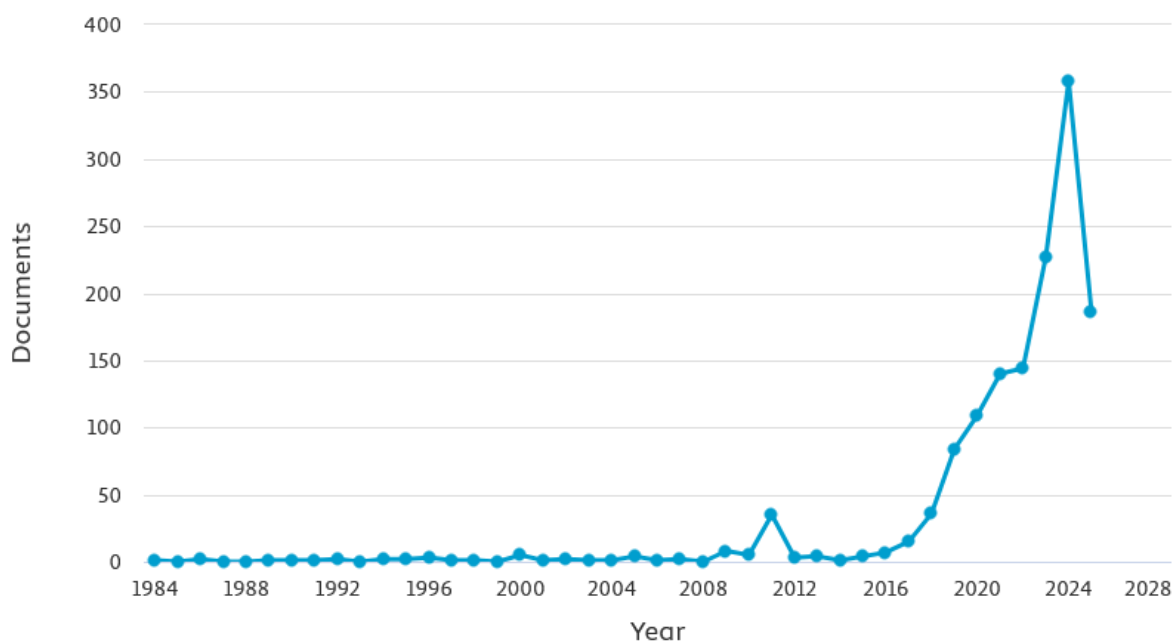

Fig. 1. Annual publication on topics related to the Field of AI, Blockchain, and Accounting

4.2 Leading authors in the field of AI, BT, and accounting

Figure 2 provides a bibliometric overview of authors who have contributed to the intersection of AI, BT, and accounting from 1984 to 2025. Miklos A. Vasarhelyi emerges as the most prolific author with 14 publications, underscoring his influential role in advancing the integration of digital technologies in accounting, particularly in areas such as real-time auditing and system automation. He is followed by Smith, S.S. with 9 publications, and Lehner, O.M. and Secinaro, S., each with 7, illustrating a concentration of output among a select group of leading scholars.

A significant portion of the contributors—over 80%—have authored between 2 and 4 publications, pointing to a rapidly growing research community. Many of these authors are relatively recent entrants to the field and often come from adjacent disciplines, including information systems, finance, auditing, and emerging technologies. This trend highlights the inherently interdisciplinary character of this research domain.

The rising number of new contributors, particularly after 2020, suggests a surge in academic interest, likely driven by growing demand for automation, enhanced reliability, and greater transparency in accounting and audit practices. The convergence of AI and BT is increasingly seen as a transformative force in modern accounting, fostering innovation across both theoretical and applied dimensions of the field.
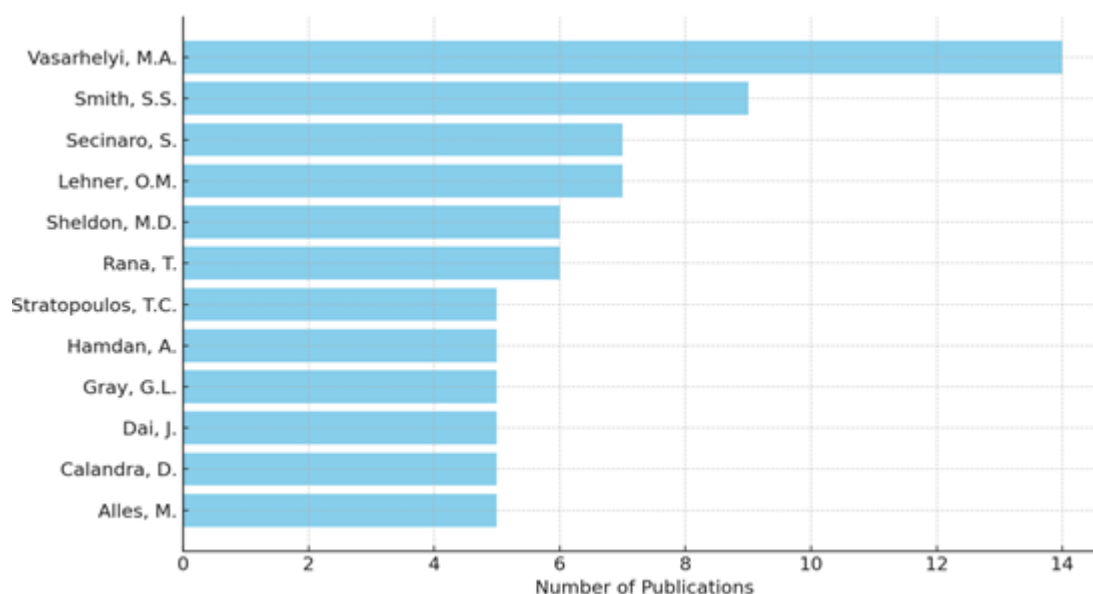

Fig. 2. Leading Academic Figures in AI, BT, and Accounting Research

4.3 Key Academic Journals Driving Research at the Nexus of AI, BT, and Accounting

Figure 3 illustrates the distribution of publications among academic journals that have significantly contributed to the growing body of research at the intersection of AI (AI), BT, and accounting.

Leading the way is the Journal of Emerging Technologies in Accounting, with 45 publications, reflecting its pivotal role in advancing scholarship on the integration of digital technologies in the accounting field. It is closely followed by the International Journal of

Accounting Information Systems and the Journal of Cleaner Production, each with 33 publications. The former focuses primarily on technological advancements in accounting systems, while the latter introduces environmental and sustainability dimensions, underscoring the field's interdisciplinary nature.

Other influential journals include the Journal of Risk and Financial Management (29 publications), Springer Proceedings in Business and Economics (23), and Cogent Business and Management (22), highlighting the expanding interest from business and management disciplines. Traditional accounting journals also maintain a strong presence—such as the Accounting, Auditing & Accountability Journal (19), Journal of Financial Reporting and Accounting (18), and the Journal of Information Systems (14)—signifying the field's academic depth.

Moreover, the presence of articles in broader and technology-oriented journals like Technological Forecasting and Social Change and Decision Support Systems demonstrates the evolving and cross-disciplinary dynamics of research in this area.

In sum, Figure 3 reveals a vibrant and diverse publication landscape, with both specialized and interdisciplinary journals contributing to the growing scholarly engagement with AI and BT in accounting.

Fig. 3. Core Journals by Publication Volume in AI, BT, and Accounting

5. BIBLIOMETRIC ANALYSES OF THE MAIN TOPICS INVESTIGATED IN THE DATA SET

This section aims to explore the most relevant topics discussed in our dataset. We analyzed the most recurring keywords used by authors. The keywords analysis provides some insights regarding the content and the main issues on BT in the accounting domain discussed in the 189 papers.

5.1 Mapping scholarly collaboration: A co-authorship network analysis

Figure 4 presents a co-authorship network based on bibliometric data spanning from 2019 to 2023. Each node represents an individual author, while the links between them indicate instances of co-authored publications. The color gradient ranging from dark blue (2019) to bright yellow (2023) depicts the average year of publication associated with each author.

Miklos A. Vasarhelyi appears in dark blue, reflecting earlier contributions concentrated around 2019, and stands out due to the relative size of his node, suggesting a higher volume of publications or greater influence in the network. In contrast, Tarek Rana, Allam Hamdan, and Davide Calandra are highlighted in bright yellow, indicating more recent scholarly activity, with average publication years closer to 2023. Authors such as Silvana Secinaro and Othmar M. Lehner are represented in shades of green, suggesting publication activity around 2021–2022.

The network structure is largely fragmented, with most authors appearing as isolated nodes, indicating limited co-authorship across the dataset. Only a few small clusters emerge—most notably, a connection between Silvana Secinaro and Davide Calandra—implying a focused collaboration within that subgroup. Another link is observed between Miklos A. Vasarhelyi and Jun Dai, pointing to a likely co-authored body of work dating back to earlier years in the timeline.

The sparse interconnectivity across the network suggests that the field under study is still characterized by relatively independent lines of research, with limited cross-institutional or cross-author collaborations. The presence of recent, more active authors—such as Rana and Hamdan—may indicate emerging research streams or new directions within the domain.

Figure 4. Co-authorship Network of Authors in AI, BT, and Accounting

5.2 Profiling key authors: From isolated influencers to collaborative clusters

Table 1 presents bibliometric indicators for twelve authors, including the number of documents, citations, and total link strength, based on data extracted from VOSviewer. The figure complements the collaborative structure shown in Figure 4 provide a quantitative perspective on author productivity, impact, and co-authorship behavior.

Miklos A. Vasarhelyi stands out as the most prolific and highly cited author, with 10 publications and 857 citations, despite having limited collaborative ties (link strength: 2). Jun Dai also shows significant influence, with 639 citations from only 5 publications, suggesting a strong impact, potentially in collaboration with Vasarhelyi. In contrast, Sean Stein Smith, with 9 documents, has no recorded co-authorship links, indicating an independent research path.

Authors such as Silvana Secinaro and Davide Calandra exhibit the highest collaboration levels in the network, each with a total link strength of 4. Their profiles reflect a more networked research approach. Meanwhile, figures like Daniel E. O'Leary and Mark D. Sheldon show moderate productivity and citation counts but lack co-authorship connections.

Overall, table1 reveals a fragmented author landscape, featuring influential yet isolated scholars alongside emerging collaborative clusters, particularly those highlighted in the temporally dynamic co-authorship map shown in Figure 5.

Table 1. Author-level metrics: Publications, citations, and link strength

Author	Documents ∨	Citations	Total link strength
vasarhelyi, miklos a.	10	857	2
smith, sean stein	9	163	0
secinaro, silvana	7	145	4
lehner, othmar m.	6	167	0
rana, tarek	6	32	0
sheldon, mark d.	6	166	0
alles, michael	5	66	4
calandra, davide	5	141	4
gray, glen l.	5	90	4
dai, jun	5	639	2
hamdan, allam	5	32	0
o'leary, daniel e.	5	342	0

5.3 Co-occurrence of key words related to related field

Figure 5 presents a bibliometric map illustrating the co-occurrence of keywords within the field of accounting and emerging technologies. The map reveals distinct thematic clusters centered around prominent keywords such as "AI", "BT", and "accounting", each represented as larger nodes due to their frequent appearance in the literature.

The green cluster centers on "AI", closely linked to terms like "machine learning", "deep learning", "big data", and "data analytics". This suggests a growing focus on the integration of AI tools for data-driven analysis and automation in accounting processes. The red cluster is

dominated by "BT", forming strong associations with "cryptocurrency", "smart contracts", and "auditing", reflecting active research on BT's transformative impact on transparency and security in financial reporting. The blue cluster, though smaller, connects terms such as "audit" and "financial reporting", suggesting continuity in traditional accounting themes now influenced by digital advancements.

The central positioning of "AI" and "accounting" illustrates their role as bridging concepts, linking various technological and professional domains. Overall, Figure 7 highlights an evolving research landscape where innovation in digital technologies reshapes core accounting practices, signaling a convergence of technological disruption and financial expertise.
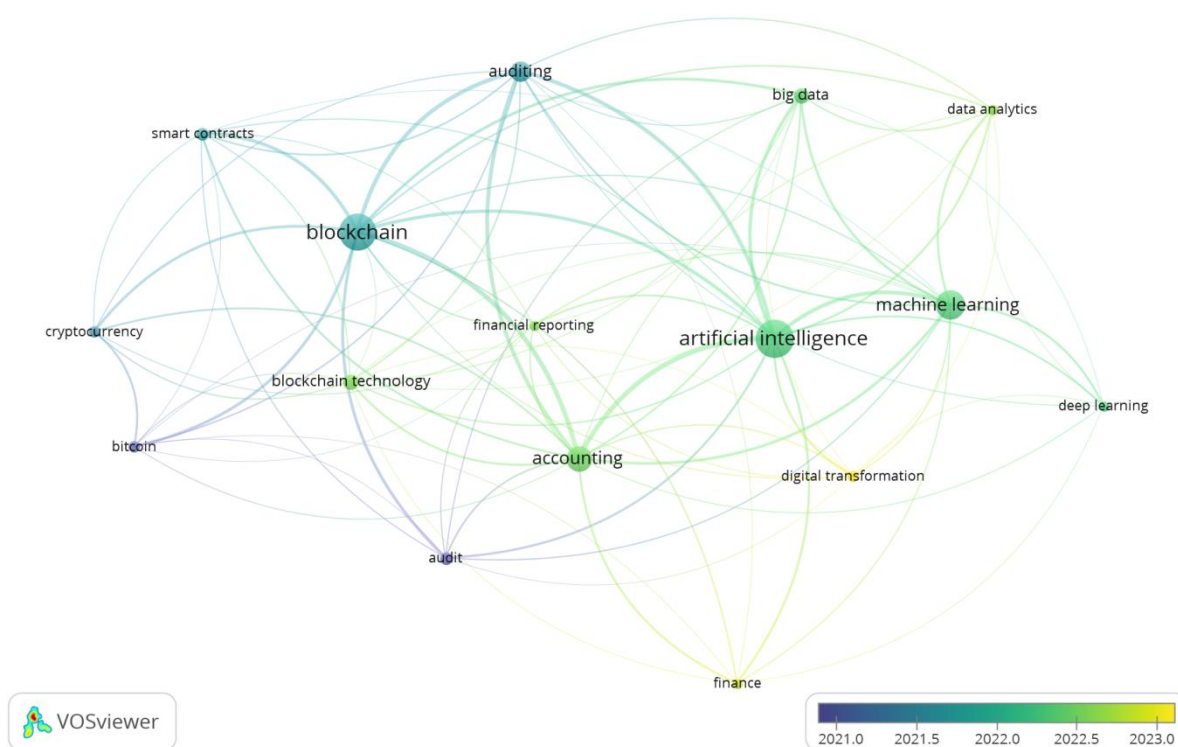

Figure 5. Keyword Co-occurrence Network Highlighting AI, BT, and Accounting

5.4 Influential authors and collaboration dynamics in the field of digital accounting
Table 2 ranks the most productive and influential authors in digital accounting technologies research based on three bibliometric indicators: (1) publication count, (2) total citations, and (3) collaboration intensity (total link strength).

The data shows Miklos A. Vasarhelyi leads with 10 publications and 857 citations, despite modest collaboration (score: 2). Sean Stein Smith follows with 9 publications and 163 citations but has no recorded collaborations (score: 0).

Some authors achieve disproportionate impact: Jun Dai accrues 639 citations from just 5 publications, while Daniel E. O'Leary earns 342 citations for the same output.

The highest collaboration scores (4) belong to Silvana Secinaro, Davide Calandra, and Michael Alles, indicating active co-authorship networks.

This analysis reveals an emerging field where productivity and influence rarely correlate with collaborative integration.

Table 2. Bibliometric profile of leading scholars in tech-driven accounting research

Keyword	Occurrences	Total link strength
artificial intelligence	299	235
blockchain	276	234
accounting	141	215
auditing	92	142
machine learning	175	116
big data	51	80
smart contracts	35	59
audit	35	54
cryptocurrency	27	46
bitcoin	29	43
data analytics	26	41
blockchain technology	51	37
finance	25	34
financial reporting	25	33
digital transformation	28	28
deep learning	26	27

5.5 Academic collaboration network analysis
The figure 6 reveals a diverse geographical distribution of institutions, with contributions originating from several continents. Notable examples include the University of Aveiro in Portugal and the Hanken School of Economics in Finland (Europe), Montclair State University in the USA (North America), RMIT University in Australia (Oceania), and the Haldia Institute of Technology in India along with Ahlia University in Bahrain (Asia). Some institutions, such as the "Department of Business and Law," appear more generically defined.

The color scale reflects the temporal evolution of the publications. Institutions represented in blue, such as Montclair State University and Hanken School of Economics, indicate earlier contributions around 2021–2022. In contrast, green to yellow nodes, like RMIT University and Haldia Institute of Technology, point to more recent activity in 2023, suggesting an increasing momentum and broader institutional engagement in this field.

However, the map also shows a lack of strong inter-institutional links, as most institutions appear isolated from one another. This limited collaboration suggests that the research field is still relatively fragmented or in an early stage of development, with teams working independently. The figure thus serves not only to identify influential institutions and temporal trends but also to highlight the need for enhanced international collaboration in shaping the future of accounting through technological innovation.

Fig. 6. Institutional research partnerships

5.6 Global research dynamics on disruptive technologies in accounting: A Country-level co-authorship analysis

Figure 7 presents the international co-authorship network, emphasizing the pivotal role of the USA as a central hub of academic production and global collaboration in the field of accounting and disruptive technologies. The visual clearly shows strong collaborative links between the USA and several other countries, notably China, the UK, Canada, and Australia. This reflects a dense web of scientific partnerships and shared research initiatives. Both China and the UK emerge as influential players, contributing significantly to the advancement of this area. The color gradient applied to the map indicates the average publication year, offering insight into the temporal dynamics of research output. The darker shades associated with the USA and China suggest that these countries were among the earliest contributors to the field. In contrast, lighter shades highlight more recent participation from countries such as India, Saudi Arabia, and the United Arab Emirates, pointing to their growing involvement and emerging interest in the topic. The overall visualization demonstrates a global and dynamic research environment, where traditional centers of knowledge production are increasingly complemented by new entrants. This evolving landscape underscores the importance of international collaboration in driving innovation in accounting through the integration of disruptive technologies.
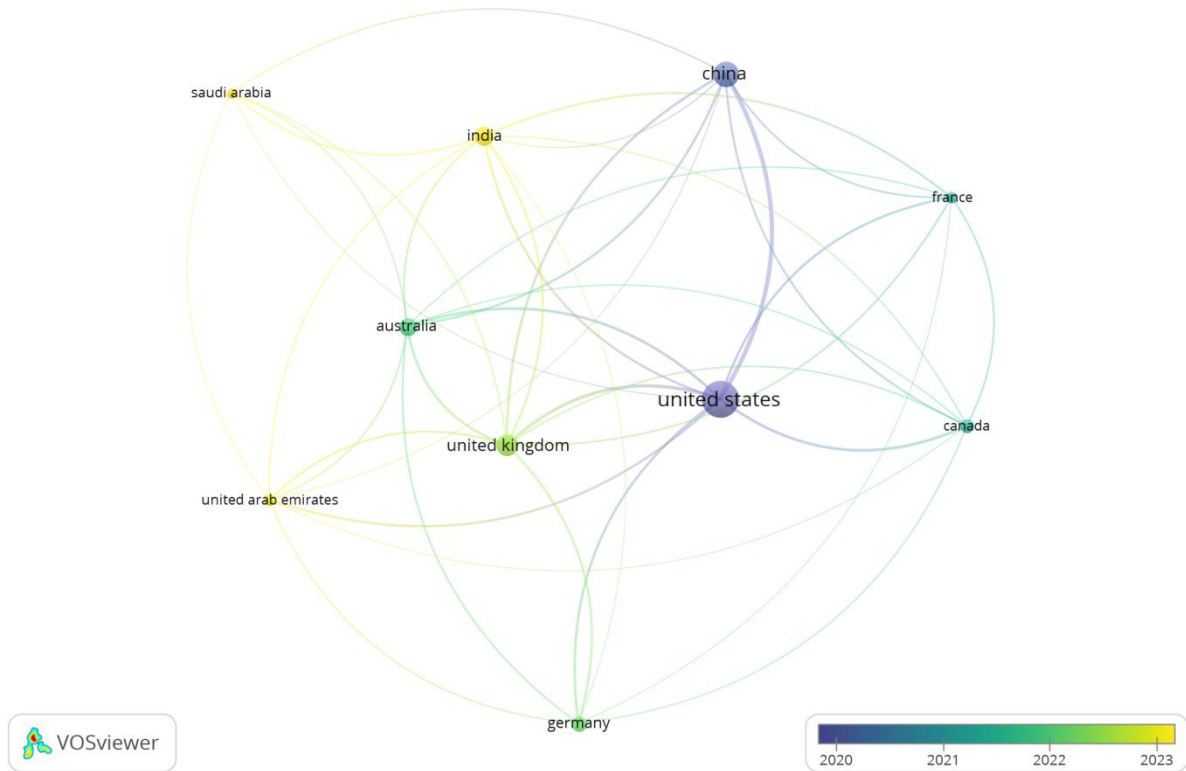
Fig. 7. International Co-authorship Network by Country

6. DISCUSSION

Our bibliometric analysis offers meaningful insights into the evolving research landscape surrounding AI and BT in the accounting domain. At the same time, it prompts critical reflections on the current state of knowledge and the potential directions for future inquiry. This discussion aims to interpret the results in light of the existing literature, shedding light on areas of convergence as well as identifying notable gaps and inconsistencies that warrant further exploration.

6.1 Research growth and maturity

The analysis reveals three distinct phases of research growth (1984–2008, 2009–2016, and 2017–2025), with exponential growth in recent years. This aligns with the literature's emphasis on the transformative potential of these technologies (Schmitz & Leoni, 2019; Tapscott & Tapscott, 2017b). However, the slight decline in 2025 suggests a potential plateau, which may reflect unresolved challenges such as regulatory uncertainties and implementation barriers (O'Leary, 2017; Sinha, 2020). This observation underscores the need for more applied research to bridge the gap between theoretical promise and practical adoption.

6.2 Leading authors and collaboration patterns

Miklos A. Vasarhelyi's dominance in the field corroborates his foundational contributions to digital auditing (Dai & Vasarhelyi, 2017). Yet, the fragmented co-authorship network highlights a critical issue: the lack of interdisciplinary collaboration. This fragmentation mirrors the literature's call for greater synergy between accounting, computer science, and organizational theory (Grover et al., 2018; Kummer et al., 2020). The isolated research efforts

may hinder the development of holistic frameworks to address complex challenges like ethical AI use or BT governance.

6.3 Thematic Clusters and Research Focus

The keyword analysis identifies three key clusters—AI/data analytics, BT/security, and traditional accounting themes—which resonate with the literature's focus on automation, transparency, and professional transformation (Faccia & Mosteanu, 2019; Kokina et al., 2017). However, the absence of prominent keywords like "ethics," "regulation," or "SME adoption" reveals a significant gap. These omissions are notable given the literature's emphasis on regulatory hurdles and the struggles of smaller firms (CPA Canada et al., 2017; Bonsón & Bednárová, 2019). Future research should prioritize these underexplored areas to ensure equitable and responsible technology adoption.

6.4 Geographic and Institutional Collaboration

The U.S. and China's leadership in research output reflects their technological advancements, as noted by Xu et al. (2019). However, the sparse inter-institutional collaborations suggest a missed opportunity for knowledge exchange, particularly with regions facing unique adoption challenges (e.g., the EU with GDPR compliance or developing economies with infrastructure limitations). This aligns with Tiron-Tudor et al.'s (2021) argument for global, multidisciplinary partnerships to address contextual disparities in technology implementation.

7. CONCLUSION, LIMITATIONS AND SUGGESTIONS FOR FUTURE RESEARCH

This study examined the intersection of emerging technologies and accounting through a bibliometric analysis of 245 Scopus-indexed articles. The results trace the field's evolution through three growth phases, with accelerated productivity in recent years followed by signs of stagnation. The analysis maps key intellectual contributions while revealing critical gaps, including limited interdisciplinary collaboration, insufficient attention to ethical and regulatory issues, and minimal focus on SME applications.

The study's integrated methodology—combining quantitative bibliometrics with qualitative interpretation—offers a novel perspective on how these technologies are transforming accounting. The findings highlight the need for theoretical frameworks to explain adoption patterns and emphasize the importance of bridging academic research with practical industry needs.

Limitations include the study's reliance on Scopus data, which may affect the comprehensiveness of findings, and the exclusion of non-English publications, which could introduce geographic bias. While bibliometric analysis effectively tracks publication trends, it cannot assess research quality or real-world impact.

Future research should pursue three key directions: (1) interdisciplinary studies addressing technical, ethical, and managerial dimensions; (2) expanded investigations into underrepresented regions, particularly in developing economies; and (3) policy-oriented work on regulatory frameworks for crypto-assets and automated systems. Addressing these

priorities will help translate technological advances into sustainable progress for the accounting profession.

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