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Digital Transformation in Accounting for Sustainable Development: Mapping the Intellectual Structure

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Abstract: *The learning and practice of accounting in recent times has been impacted by digital technologies such as artificial intelligence (AI), blockchain, enterprise resource planning (ERP) systems, cloud platforms, and data analytics. Existing studies have been examined in specific contexts, yet the comprehensive study of their global intellectual structure and links to sustainability is underexplored. The study focuses on conducting a bibliometric analysis of 7,302 Scopus-indexed publications from 2000 to 2024 at the intersection of digital transformation, accounting information systems (AIS), information technology (IT), and sustainable development. VOSviewer was used for network visualization, and Excel was employed for descriptive analysis to track publication trends, leading journals, authors, institutions, and countries and to map co-authorship, co-citation, and keyword co-occurrence networks. The findings show a rise in research output after 2017, motivated by interest in blockchain, AI, and ESG-related reporting. While emerging hubs such as Indonesia and India are gaining prominence, the United States and China dominate global output. The intellectual framework of the discipline is grounded in traditional information systems theories (TAM, TPB, and the IS success model), organizational viewpoints (resource-based perspective), and accounting-specific applications, but contemporary trends include machine learning, blockchain, and sustainability. Progression in the theme shows a shift from studies on ERP and MIS adoption towards advanced analytics, fintech, and the integration of ESG factors. Still, the reliance on the Scopus database and the limitation to English-language publications narrow the scope of the study to ignore publications in languages other than English; therefore, future studies should expand database coverage and integrate bibliometric mapping with systematic content reviews.*

Keywords: financial technology, innovation in auditing, data analytics, accounting software, emerging trends.
JEL Classification: M41, M42, 033, L86, Q56.

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INTRODUCTION

In recent times, technological innovations have brought about tools such as artificial intelligence (AI), blockchain, cloud computing, enterprise resource planning (ERP) systems, and data analytics, which have changed the way many organizations operate in relation to accounting. Today's accounting functions depend heavily on digital infrastructures that support automation, real-time data access, and integrated reporting systems.

As a result, the nature of accounting work is shifting from manual record-keeping to system-guided processes that emphasize analysis, oversight, and continuous data flows. International assessments in recent times highlight the strategic importance of digital transformation in accounting, especially relating to sustainability reporting and governance.

According to the State of Play in Sustainability Disclosure and Assurance (2019-2022) report, sustainability reporting has expanded across jurisdictions, with many companies integrating sustainability information into their annual or integrated reports and increasingly looking for assurance in order to increase the credibility and comparability of their shared information.

These developments indicate a clearer shift toward structured and consistent sustainability reporting, with many organizations now handling non-financial information with a level of seriousness comparable to financial disclosures (International Federation of Accountants, 2024).

Within these changes, the ISSB's IFRS S1 standard emphasizes why it is necessary for organizations to disclose sustainability-related risks and opportunities in a way that can be compared, verified, and linked to financial statements, and IFRS S2 also provides guidance on climate-related disclosures. These standards show why there must be a steady and reliable way of reporting information that is able to provide sustainability details (International Sustainability Standards Board, 2023a, 2023b).

Recent policy experiences make it clear that many institutions now require practical digital tools to improve how information is managed and shared.

The OECD's Going Digital report highlights that many organizations collect and process information now through digital platforms rather than manual methods, and this shift helps people to verify information more easily, which builds trust (OECD, 2019).

For example, the World Economic Forum notes that when these technologies are used in ways that are open and fair, they help institutions work more consistently, reduce unnecessary delays, and make it easier for the public to understand decisions (World Economic Forum, 2018).

In practice, organizations prepare and present their reports, bringing financial records, sustainability updates, and oversight responsibilities into one process and allowing users to make decisions based on verified data rather than guesses because both financial and sustainability figures now appear on the same reporting platforms.

Furthermore, the constant updates in reporting rules and sustainability standards in different countries show why many researchers are paying more attention to digital reporting methods today. Public agencies and professional bodies are encouraging organizations to adopt integrated digital reporting systems, which require reliable, up-to-date information. These developments are also prompting accounting professionals to build new digital skills and keep pace with evolving reporting requirements.

Academic and training institutions have also responded by revising accounting curricula to incorporate data analytics, information systems, and sustainability reporting principles. Therefore, understanding how ideas in this field have developed over time helps shape sound policy, strengthens the way accounting is taught, and guides organizations in improving their financial and sustainability reporting practices.

However, the existing studies have developed unevenly, often concentrating on specific sectors or countries rather than providing a broader comparative perspective. Moreover, most bibliometric work in AIS and IT fails to incorporate sustainability considerations.

There is also limited research tracking how key ideas in this field have changed over time, leaving gaps in understanding its intellectual evolution.

Thus, the study aims to fill these gaps by conducting a bibliometric analysis of AIS and IT research over the period 2000 to 2024, with particular attention to the role of issues connected to sustainability within the main themes and ideas that researchers keep returning to in literature.

The analysis not only shows where most researchers see the boundaries of the subject but also provides a bibliometric method that others can easily follow and highlights practical steps that accounting professionals can use to integrate sustainability into their work.

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LITERATURE REVIEW

ERP, Cloud ERP, and Accounting Software

Enterprise resource planning (ERP) systems and their cloud-based counterparts continue to play a major role in how accounting work is being modernized. Research shows that using ERP systems helps firms make better decisions, improve report accuracy, and work more efficiently, even though many firms struggle with costs, limited technical skills, and staff reluctance to change (Gessa et al., 2023).

Barbieri and Sott (2024) found several conditions that make cloud ERP work well in small businesses, such as good IT knowledge, flexible systems, strong security, and clear internal procedures.

Hong et al. (2024) show that managers need the right skills and the necessary infrastructure before these systems can improve performance.

It was found in Poland by Januszewski (2023) that although cloud systems are widely used by SMEs for handling data, many still depend on separate accounting software, so their systems do not always connect smoothly. Together, the studies show that ERP and cloud systems have strong potential, but firms adopt and benefit from them at very different levels.

AI and Data Analytics in Accounting and Auditing

Artificial intelligence (AI) and advanced data analytics are changing how accounting and auditing work is carried out. Research from Turkey shows that combining AI with blockchain can improve audit quality, especially when firms have clear rules and well-trained auditors (Qader & Cek, 2024). AI is used in several accounting tasks, including continuous auditing, spotting unusual transactions, and making forecasts for financial reports. Despite this, research indicates the lack of consistent ways to measure AI's real impact, and that issues like transparency, data quality, and ethical use remain problems (Georgiou et al., 2024). Industry reports show that many organizations now expect AI tools to be built into their ERP and accounting systems, but most firms are not yet using these tools fully. Such evidence shows a high demand for AI in auditing and accounting, but several obstacles still prevent its full adoption.

Blockchain and Assurance

Financial records are becoming easier to track and verify as firms begin using blockchain and other distributed ledger systems. Han et al. (2023) show that blockchain can strengthen audit work by giving both auditors and managers access to the same verified information, although many firms still struggle with system integration and unclear regulations. Georgiou et al. (2024) found four common areas of focus in studies on blockchain and accounting: skills and education, regulatory frameworks, governance issues, and accounting for digital assets. Zhang et al. (2025) examined how auditing works in blockchain settings and noted both the chance to automate monitoring and the risks linked to system weaknesses and unclear regulations. Another line of study also links blockchain to environmental sustainability, where it can verify supply chain transparency and ESG compliance, though practical use is still fairly limited (Mulligan et al., 2024).

Sustainability, the SDGs, and Accounting Information Systems

Many recent studies look at how accounting practices and IT connect with sustainable development. Mulligan et al. (2024) show that blockchain can help policymakers in achieving environmental goals by providing sustainability data that are verifiable. Other studies highlight how cloud and digital systems indirectly promote sustainability through efficiency gains, even though direct inclusion of SDG considerations into AIS scholarship is still uncommon (Januszewski, 2023). Reviews by Georgiou et al. (2024) and Bellucci et al. (2021) call for closer study of how accounting digitalization influences SDG-related reporting, governance, and accountability. This shows why more research is necessary on digital transformation within wider sustainability goals.

Recent studies show this pattern. For example, Hamdy et al. (2025) look at governmental units in Egypt and Saudi Arabia and find that digital transformation affects systems in different ways on the quality of accounting information systems; while digital tools create chances to improve control and reporting, their early or uneven rollout in emerging markets can lead to problems (e.g., institutional and technical limitations) (Hamdy et al., 2025). In the same way, Huy and Phuc (2025) show that the effectiveness of digital accounting information systems (EDAIS) positively influences sustainable business model innovation, especially when mediated by a digital business ecosystem, underlining a crucial link between accounting technology and sustainable practices (Huy & Phuc, 2025).

Synthesis and Positioning

From a bibliometric point of view, there has also been growing interest in mapping and understanding the main ideas of "digital accounting" more broadly. *The Power of Digital Accounting: A Bibliometric Literature Review* … undertakes a bibliometric study to identify major research clusters, hotspots, and trends in digital accounting (Silva et al., 2025). Another study, *Accounting Digitalization in the Quest for Environmental Sustainability* (Antonini, 2024), reviews literature at the intersection of accounting digitalization and environmental sustainability, underscoring that sustainability issues are becoming more central in accounting IT research (Antonini, 2024).

Research in this area is wide-ranging but somewhat scattered. While a lot has been studied about the adoption of ERP systems and cloud technologies, the implications for sustainability remain largely unexplored. AI and blockchain are increasingly prominent but often studied in isolation, and empirical links to long-term sustainable development remain inadequate. Studies frequently focus on SMEs or individual countries, leaving gaps in comparative and global perspective. Most importantly, few bibliometric analyses show how sustainability themes have developed within AIS and IT research over time. Addressing this gap, the present study provides a longitudinal mapping (2000-2024) that integrates digital transformation themes with sustainability concerns, offering insights into both theoretical development and policy relevance.

METHODOLOGY

Data Source

The study relies on the Scopus database as the primary data source. Scopus was chosen because it is one of the largest and most comprehensive bibliographic databases, which covers peer-reviewed journals, conference proceedings, and book chapters across accounting, business, economics, and information systems. Compared with alternatives such as Web of Science, Scopus offers broader coverage of journals in accounting information systems (AIS), emerging technologies, and sustainability research (Mongeon & Paul-Hus, 2016).

Search Strategy and Keywords

To capture the intersection of digital transformation, accounting, information systems/IT, and sustainable development, a structured search query was developed using Boolean operators and field restrictions (TITLE-ABS-KEY).

And the following criteria were used to obtain the data: (TITLE-ABS-KEY("digital transformation" OR "digital accounting" OR "accounting information systems" OR "AIS" OR "information technology" OR "IT in accounting" OR "ERP systems" OR "enterprise resource planning" OR "FinTech" OR "financial technology" OR "blockchain" OR "artificial intelligence" OR "AI in accounting" OR "big data analytics" OR "cloud accounting") AND TITLE-ABS-KEY(accounting)) AND (LIMIT-TO (PUBSTAGE,"final")) AND (LIMIT-TO (DOCTYPE,"ar") OR LIMIT-TO (DOCTYPE,"cp") OR LIMIT-TO (DOCTYPE,"re")) AND (LIMIT-TO (LANGUAGE,"English")).

The search was restricted to publications in English, indexed in Scopus between January 2000 and December 2024, reflecting the contemporary period when digital transformation in accounting gained prominence. Only articles, reviews, and conference papers were included to ensure scholarly rigor; editorials, notes, and non-scholarly documents were excluded.

Data Extraction and Cleaning

The initial search results were exported in CSV format to enable processing in bibliometric software. Metadata fields extracted included author names, article titles, abstracts, keywords, source titles (journals), countries, citations, and references.

Bibliometric Tools and Techniques

Data analysis was conducted using VOSviewer (version 1.6.20) for network visualization and Microsoft Excel for descriptive statistics. VOSviewer was selected for its capacity to generate co-authorship, co-citation, and keyword co-occurrence maps, providing both visual and quantitative insights into the intellectual structure of the field (Eck & Waltman, 2009).

The analysis proceeded in three stages. First, a descriptive analysis was conducted to track publication trends by year, journals, authors, and countries. Second, a network analysis examined co-authorship networks, co-citation clusters, and keyword co-occurrence to reveal the intellectual and thematic structures of the field.

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Finally, a thematic evolution analysis identified how these clusters developed over the 2000 to 2024 period, with particular emphasis on the integration of sustainability-related topics.

Reproducibility and Limitations

To ensure reproducibility, the full query string, timespan, and inclusion/exclusion criteria are documented above. However, limitations include reliance on a single database (Scopus), which may exclude some relevant literature indexed elsewhere, and the restriction to English-language publications, which could introduce language bias. Despite these constraints, the methodology gives an in-depth account of AIS, IT, and sustainability-related accounting scholarship over nearly 25 years.

RESULTS

Publication Trends

Figure 1 presents the annual publication trends in digital transformation and accounting research over the period 2000–2024, illustrating the growth trajectory of scholarly interest in the field.

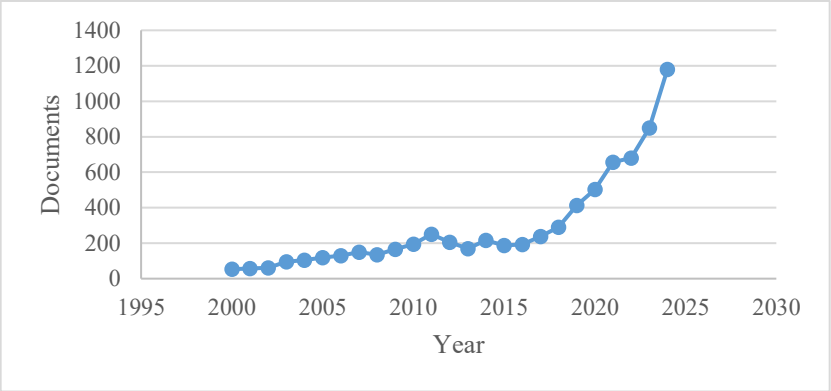

Figure 1. Annual Publication Trends (2000 to 2024)

Source: constructed by the author using Scopus data, visualized in Microsoft Excel (September 2025).

The examination of 7,302 records from 2000 to 2024 indicates a consistent increase in publications at the convergence of digital transformation, accounting, and information systems. Early growth was modest, but from 2017 onwards, the number of publications accelerated sharply, reflecting the scholarly surge around blockchain, artificial intelligence, and sustainability reporting in accounting (Georgiou et al., 2024; Han et al., 2023). Citations to these works are unevenly distributed: while the median citation count is only three per paper, a small number of highly influential publications have accumulated over 15,000 citations, indicating the presence of seminal contributions alongside a rapidly expanding frontier of new studies.

Study Documents

Figure 2 shows the distribution of document types included in the dataset, highlighting the relative emphasis on articles, conference papers, reviews, and other publication formats.

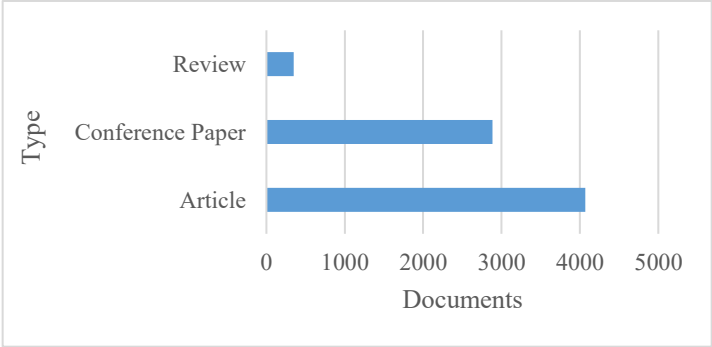

Figure 2. Types of Documents

Source: constructed by the author using Scopus data, visualized in Microsoft Excel (September 2025).

Analysis of document types shows that journal articles constitute the largest share with 4,069 publications (55%), followed by conference papers with 2,884 publications (39%), and reviews with 349 publications (5%). The relatively high proportion of conference papers reflects the interdisciplinary roots of digital transformation research in accounting, which draws heavily from information systems and computer science communities. The smaller but visible share of reviews suggests that the field is gradually consolidating and synthesizing knowledge.

Publication Sources

Figure 3 identifies the top journal and conference sources in which research on digital transformation and accounting has been most frequently published.

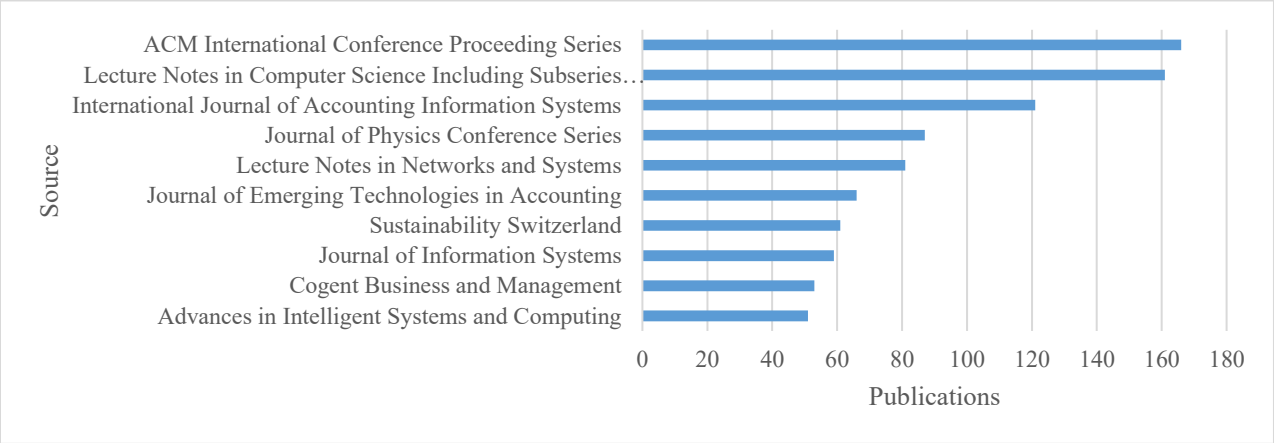

Figure 3. Top 10 Sources of Publication

Source: constructed by the author using Scopus data, visualized in Microsoft Excel (September 2025).

The most productive outlets are dominated by conference proceedings and specialized journals at the intersection of accounting and information systems. *The ACM International Conference Proceeding Series* and *Lecture Notes in Computer Science* account for 166 and 161 publications, respectively, followed by the *International Journal of Accounting Information Systems* with 121 publications. Other major outlets include *Journal of Physics: Conference Series*, *Lecture Notes in Networks and Systems*, and *Journal of Emerging Technologies in Accounting*. Interdisciplinary sources such as *Sustainability* (Switzerland) and *Cogent Business and Management* also appear in the top ten, reflecting the increasing alignment of accounting digitalization with sustainability and management research. The findings are consistent with earlier observations that the field spans both technical and applied outlets, with sustainability-related journals gaining importance in recent years (Mulligan et al., 2024).

Author Contributions

Figure 4 displays the most prolific authors in the field, based on publication counts within the study period.

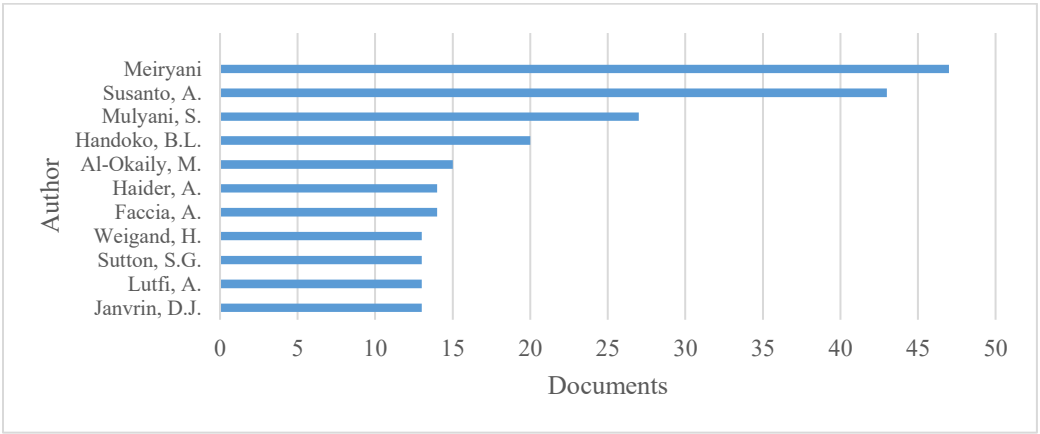

Figure 4. Contributions by Authors

Source: constructed by the author using Scopus data, visualized in Microsoft Excel (September, 2025).

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The analysis of prolific authors reveals that a relatively small group of scholars concentrates research on digital transformation in accounting. Meiryani leads with 47 publications, followed closely by Susanto, A., with 43. Other prominent contributors include Mulyani, S.; Handoko, B.L.; Al-Okaily, M.; and Haider, A. Several internationally recognized accounting information systems scholars, such as Weigand, H., Sutton, S.G., Lutfi, A., and Janvrin, D.J., also appear among the most active authors. This distribution highlights both the contributions of regionally concentrated research networks (notably in Indonesia and the Middle East) and the involvement of established AIS researchers in North America and Europe. These findings align with prior bibliometric reviews noting that digital accounting transformation is characterized by emerging regional clusters of scholarship combined with established international voices (Silva et al., 2025).

Intellectual Leadership/Affiliation

Figure 5 illustrates the leading contributors in intellectual influence, showing authors with major citation impacts in the field.

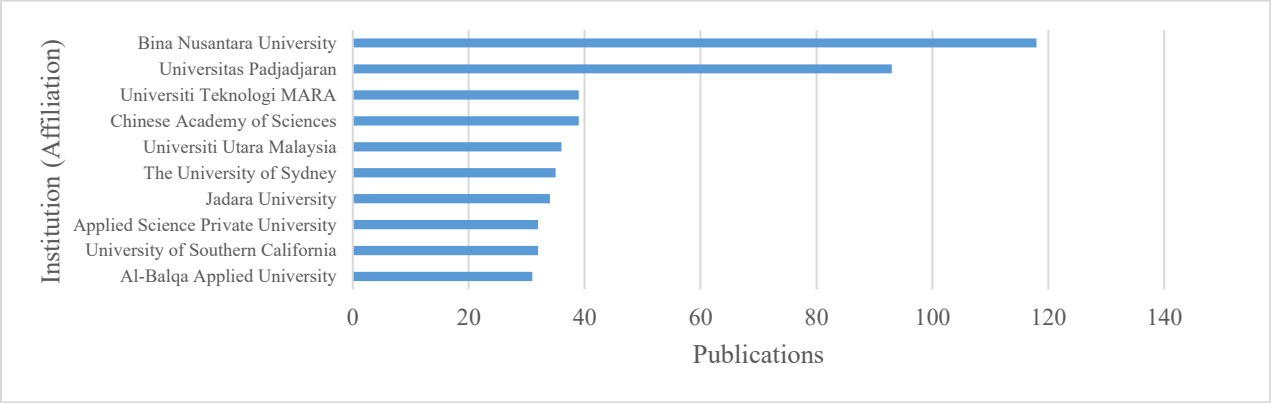

Figure 5. Intellectual Leadership

Source: constructed by the author using Scopus data, visualized in Microsoft Excel (September 2025).

Institutional analysis highlights that the universities and research centers are most active in digital transformation and accounting research. Bina Nusantara University leads with 118 publications, followed by Universitas Padjadjaran with 93. Other significant contributors include Universiti Teknologi MARA, the Chinese Academy of Sciences, and Universiti Utara Malaysia. Beyond Asia, leading institutions such as the University of Sydney and the University of Southern California also appear among the top ten. This distribution reflects both the rise of strong regional research hubs in Southeast Asia and the continued contributions of established institutions in North America and Oceania. It also aligns with previous bibliometric findings that show accounting digitalization research is increasingly shaped by emerging economies while maintaining active participation from global research leaders, underscoring the field's dual character as both regionally embedded and globally interconnected (Alassuli et al., 2025; Silva et al., 2025).

Country Contributions

Figure 6 presents the geographical distribution of publications, highlighting which countries have contributed most to research output in this domain.

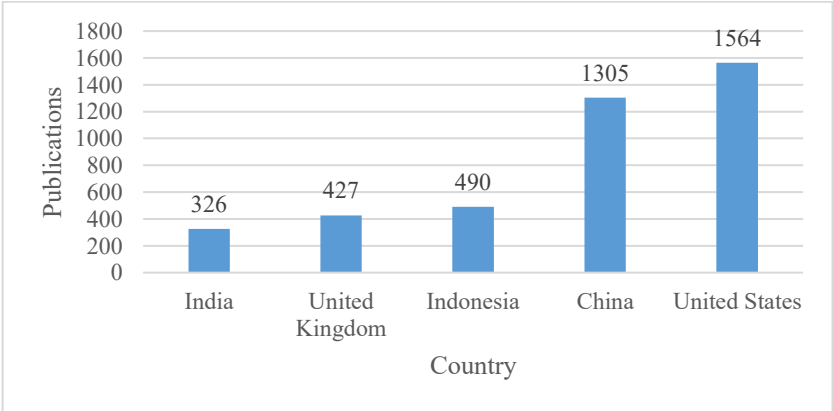

Figure 6. Contributions by Country

Source: constructed by the author using Scopus data, visualized in Microsoft Excel (September 2025).

The distribution of publications by country indicates that research on digital transformation in accounting is led by a few major contributors. The United States dominates the field with 1,564 (33%) publications, followed by China with 1,305 (28%). Together, these two countries account for a substantial share of the global output, reflecting their strong academic and technological ecosystems. Indonesia (490 publications, 10%) emerges as a notable regional hub, highlighting the growing role of Southeast Asia in accounting digitalization research. The United Kingdom (427, 9%) and India (326, 7%) also contribute significantly, representing established research traditions in Europe and an expanding scholarly base in South Asia.

This concentration of output among leading economies mirrors broader trends in bibliometric studies, where the United States and China consistently dominate, while emerging economies such as Indonesia and India are playing increasingly visible roles in shaping research agendas (Silva et al., 2025; Thi & Hong, 2025).

Publications by Subject Category

Figure 7 shows the classification of publications by subject category, reflecting the interdisciplinary nature of digital transformation in accounting.

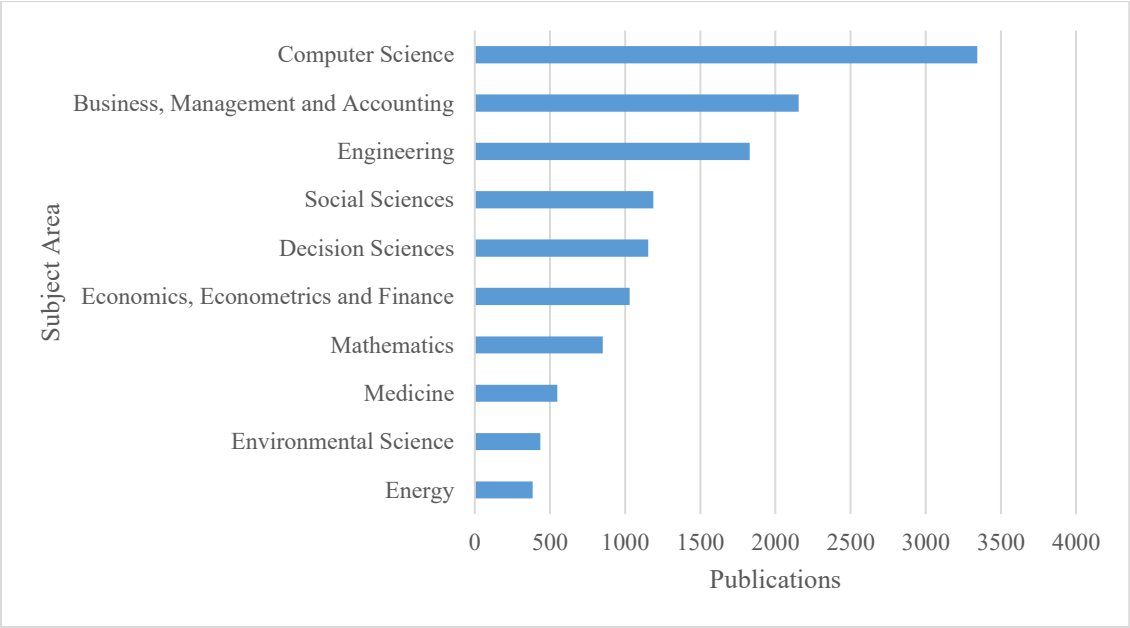

Figure 7. Publications by Subject Category

Source: constructed by the author using Scopus data, visualized in Microsoft Excel (September, 2025).

The distribution of subject areas demonstrates the interdisciplinary character of digital transformation research in accounting. *Computer science* leads with 3,344 publications, reflecting the strong technological foundation of this field. This is followed by *business, management and accounting* with 2,155 and *engineering* with 1,828, underscoring the integration of technical and managerial perspectives. The *social sciences* and *decision sciences* each exceed 1,000 publications, highlighting contributions from broader organizational and decision-making contexts.

Other notable categories include *economics, econometrics and finance*, *mathematics*, and applied areas such as *medicine*, *environmental science*, and *energy*. These latter domains suggest that digital accounting tools are not only applied in corporate contexts but also increasingly linked to healthcare, sustainability, and energy management.

This distribution aligns with bibliometric studies showing that digital accounting research is embedded in a multi-disciplinary knowledge structure, bridging accounting, computer science, and sustainability-oriented fields (İyibildiren et al., 2023; Silva et al., 2025).

Collaboration Networks by Authors

Figure 8 visualizes the co-authorship network, illustrating collaborative relationships among researchers in the field.

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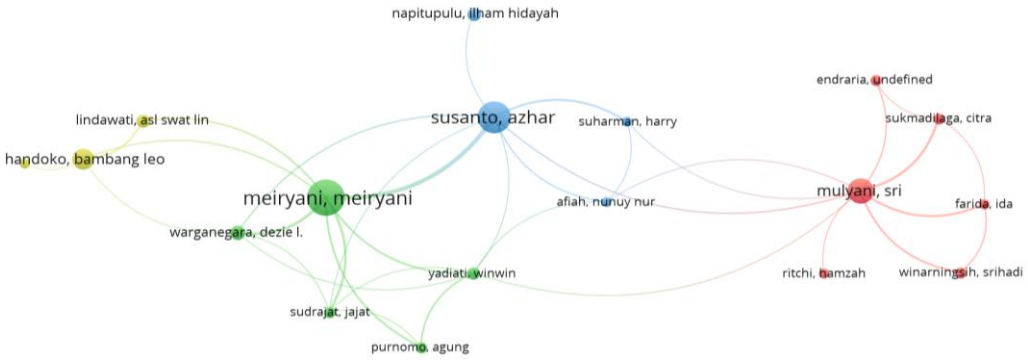

Figure 8. Co-Authorship Network Visualization

Source: author's visualization using VOSviewer based on Scopus data.

The co-authorship network reveals three main clusters of collaboration among prolific authors in digital transformation and accounting research. One cluster, led by Meiryani, brings together collaborators such as Handoko, Bambang Leo, Lindawati, Asl Swat Lin, and Warganegara, Dezie L., and is characterized by a strong Indonesian research base focusing on accounting information systems and organizational digitalization. Another major cluster is anchored by Susanto, Azhar, who frequently co-authors with scholars including Suharman, Harry and Napitupulu, Ilham Hidayah, reflecting contributions in technology adoption and information systems integration within accounting practice. A third cluster, centered on Mulyani, Sri, includes Farida, Ida and Winarningsih, Srihadi, with work often addressing enterprise systems, digital transformation in accounting education, and applied aspects of technology-enabled reporting. In all, these clusters suggest regional concentration of scholarship in Southeast Asia particularly Indonesia while also highlighting the importance of collaborative networks in shaping the intellectual structure of digital accounting transformation (Luu et al., 2025; Silva et al., 2025).

Collaboration Networks by Countries

Figure 9 presents the country-level co-authorship network, showing international collaboration patterns across research groups.

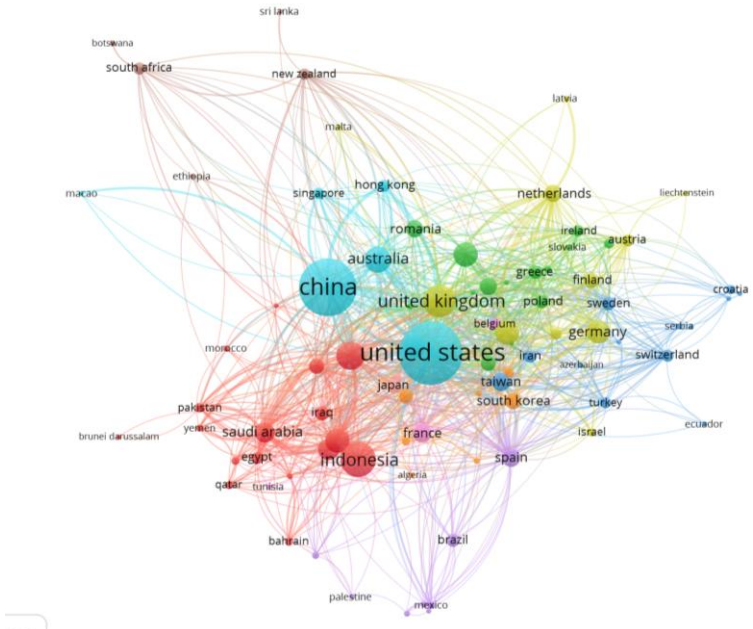

Figure 9. Country Level Co-Authorship Network Visualization

Source: author's visualization using VOSviewer based on Scopus data.

The country-level co-authorship network reveals the global structure of collaboration in digital transformation and accounting research. The United States and China dominate the network, both in terms of volume and centrality, reflecting their positions as leading producers of digital accounting scholarship. The United Kingdom and Germany also occupy central positions, bridging collaborations between Europe, North America, and Asia. Indonesia emerges as a visible hub, linking strongly with countries in Asia and the Middle East, consistent with its rising publication output in this field. Clusters also indicate regional collaboration patterns. For example, the U.S. and China frequently co-author with partners across Europe and Asia, while Indonesia forms part of a cluster that includes Middle Eastern and Southeast Asian countries. European nations such as the Netherlands, Germany, and France are well integrated into global networks, acting as connectors between regional clusters. This distribution confirms that while the field is dominated by advanced economies, emerging research hubs are gaining visibility through regional collaboration networks (Duan, 2024; Luu et al., 2025; Silva et al., 2025).

Co-Citation Analysis (References)

Figure 10 illustrates the co-citation network among referenced works, indicating foundational literature and clustered research themes.

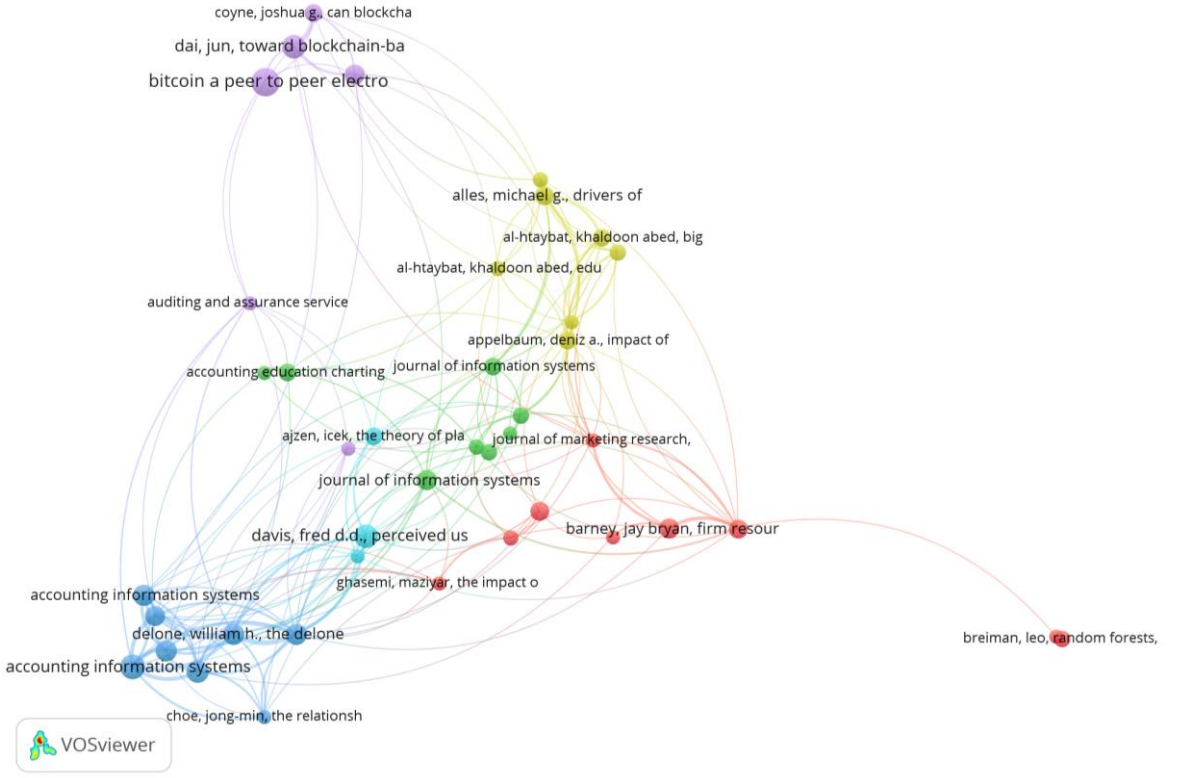

Figure 10: Co-Citation by References Network Visualization

Source: author's visualization using VOSviewer based on Scopus data.

The co-citation network identifies the intellectual foundations of digital transformation research in accounting. Several theoretical anchors are evident. One cluster centers on technology acceptance and information systems success models, led by Davis (1989) on perceived usefulness, Delone and McLean (2003) on the IS success model, and Ajzen (1991) on the theory of planned behavior. A second cluster highlights management and organizational theory, including Barney (1991) on the resource-based view and Appelbaum et al. (2017) on organizational impacts of digitalization. Another group focuses on applications that are specific to accounting. Alles (2015) and Al-Htaybat (2018, 2019) look at digital accounting and big data in accounting practice. Emerging intellectual strands are also visible. For instance, Breiman (2001) on random forests reflects the integration of machine learning into accounting analytics, while blockchain-related works such as Coyne and McMickle (2017) and Dai and Vasarhelyi (2017) highlight technological innovations in auditing and assurance. Collectively, these clusters show that digital accounting scholarship is grounded in a mix of information systems theories, organizational management frameworks, and emerging technology

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applications, consistent with bibliometric reviews in related fields (Duan, 2024; İyibildiren et al., 2023; Silva et al., 2025).

Keyword Co-Occurrence and Research Clusters

Figure 11 displays the keyword co-occurrence network, identifying dominant thematic clusters within the research landscape.

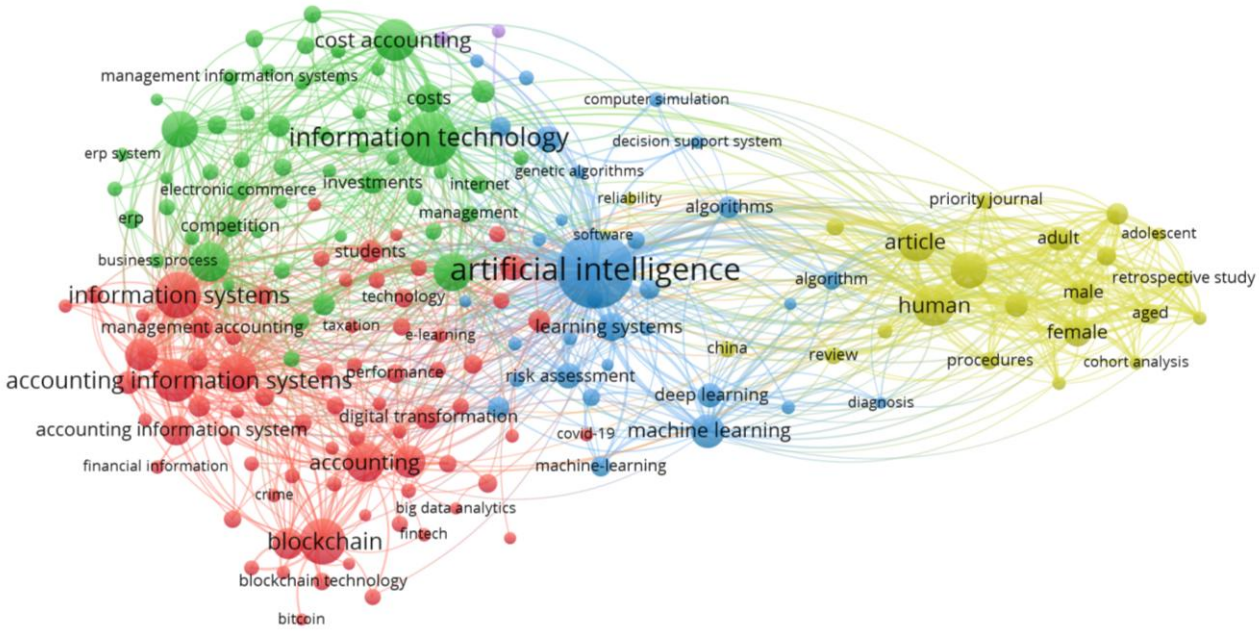

Figure 11. Keyword Co-Occurrence Network Visualization

Source: author's visualization using VOSviewer based on Scopus data.

The keyword co-occurrence network highlights four dominant thematic clusters in digital transformation and accounting research. The red cluster is centered on "accounting information systems", "management accounting", "digital transformation", and "blockchain". This cluster reflects the integration of accounting practice with emerging technologies, emphasizing ERP systems, financial information management, and fintech applications. The green cluster is anchored by "information technology", "management information systems", and "cost accounting", pointing to the managerial and enterprise-level adoption of digital systems, with links to e-commerce, investments, and performance management. The blue cluster is dominated by "artificial intelligence", "machine learning", "deep learning", and "learning systems", reflecting the growing influence of data-driven methods, predictive analytics, and automation in accounting processes. Finally, the yellow cluster, structured around terms such as "human", "article", 'male", "female", and "retrospective study", appears to capture generic indexing terms from Scopus, though it also overlaps with medical and social science contexts where digital technologies are applied.

Overall, the clusters suggest the technological breadth and thematic diversity of the field. The prominence of keywords such as "artificial intelligence" and "blockchain" underscores the rapid incorporation of disruptive technologies into accounting research, while the continuing presence of terms like "management information systems" and "cost accounting" demonstrates the enduring relevance of traditional accounting and IS concerns.

These patterns align with prior bibliometric studies that emphasize the coexistence of established AIS foundations with emerging technology-driven research fronts (İyibildiren et al., 2023; Luu et al., 2025; Silva et al., 2025).

Thematic Evolution

Figure 12 provides an overlay visualization of keywords, highlighting how research topics have evolved over time.

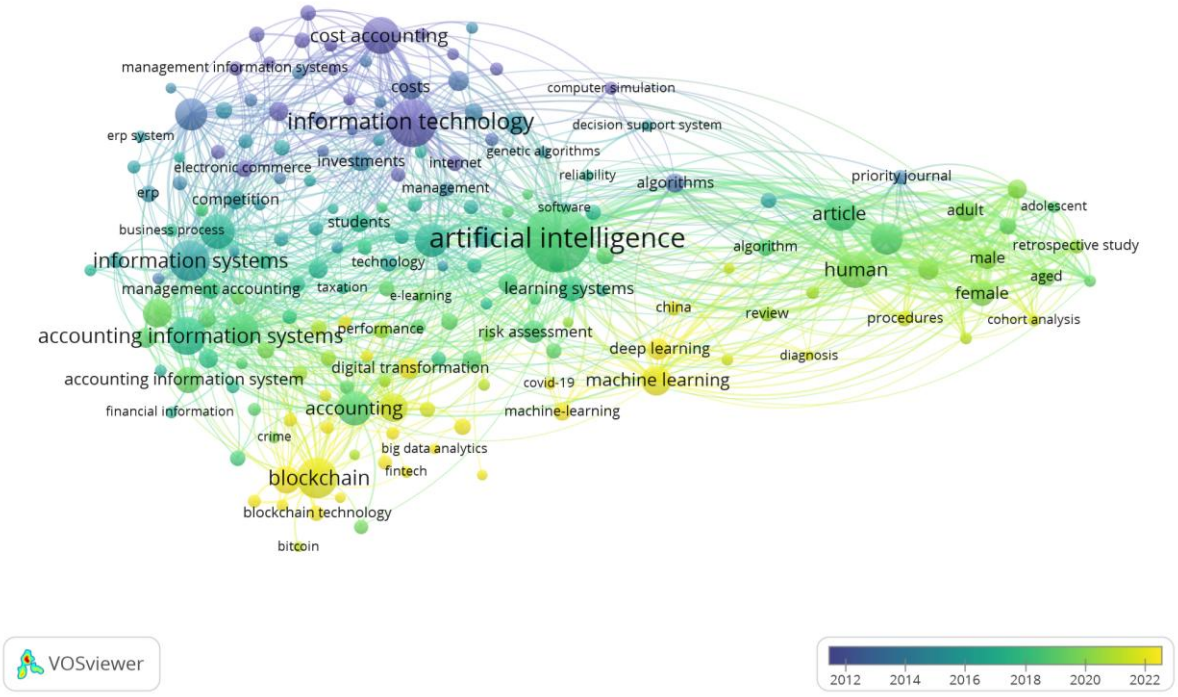

Figure 12. Overlay Visualization of Keywords

Source: author's visualization using VOSviewer based on Scopus data.

The overlay visualization of keywords shows how research themes in digital transformation and accounting have changed over time. Early studies (2012-2015, purple/blue nodes) concentrated on foundational topics such as "management information systems", "ERP systems", "cost accounting", and "information technology", reflecting the emphasis on system adoption, cost efficiency, and organizational integration. Between 2016 and 2019 (green nodes), the literature broadened to include "digital transformation", "accounting information systems", "e-learning", and "artificial intelligence", signifying a growing concern with digital tools and their application to performance management, education, and financial information systems. From 2020 onwards (yellow nodes), attention shifted decisively toward "blockchain", "machine learning", "deep learning", "fintech", "big data analytics", and sustainability-related terms. This era marks the rise of disruptive technologies and their intersection with accounting practices, governance, and risk management. The results support the field's transition from early adoption of enterprise systems toward advanced analytics and next-generation technologies, aligning with recent bibliometric studies that emphasize the integration of AI and blockchain into accounting innovation (Duan, 2024; İyibildiren et al., 2023; Silva et al., 2025).

DISCUSSION

The results of this bibliometric analysis confirm that digital transformation has become an increasingly prominent theme in accounting research over the past two decades, with a marked acceleration after 2017. This trend aligns with prior findings that digitalization is reshaping accounting practices and information environments (Georgiou et al., 2024; Han et al., 2023). The prominence of artificial intelligence, blockchain, and data analytics in recent thematic clusters reinforces claims that the field is transitioning from traditional system integration topics toward new forms of assurance, transparency, and governance.

The interdisciplinary nature of the field observed in this study, with strong linkages to computer science, engineering, and decision sciences, is consistent with İyibildiren et al. (2023). who note that digital accounting research integrates technical and managerial perspectives. Similarly, the emergence of sustainability-oriented clusters aligns with Bellucci et al. (2021) and Mulligan et al. (2024), who highlight that digital tools are increasingly leveraged in support of ESG reporting and accountability.

The geographic patterns identified here also reflect the global diffusion of digital accounting. The concentration of output in the United States and China, alongside the rise of Indonesia and India as emerging hubs, supports earlier observations that digital transformation is shaped by both advanced and developing

economy contexts (Alassuli et al., 2025; Thi & Hong, 2025). Furthermore, the co-authorship network analysis indicates that research in this domain is both regionally organized and internationally connected, consistent with Luu et al. (2025) and Silva et al. (2025).

Overall, the findings of this study reinforce and extend prior research by providing a long-term, structural perspective on how digital transformation themes have evolved within accounting scholarship.

CONCLUSIONS

This study provides comprehensive bibliometric mapping of digital transformation in accounting, drawing on 7,302 Scopus-indexed publications between 2000 and 2024. The findings reveal that the field has experienced steady growth, with an inflection point after 2017 reflecting the rising influence of blockchain, artificial intelligence, and sustainability reporting. While the distribution of citations is highly skewed, the presence of seminal contributions alongside a large volume of recent studies illustrates both the consolidation of foundational theories and the rapid emergence of new research frontiers.

The analysis highlights three key characteristics of the field. First, digital accounting research is interdisciplinary, with strong linkages to computer science, engineering, decision sciences, and sustainability. Second, it is globally concentrated yet regionally diversifying: the United States and China dominate output, but emerging hubs in Southeast Asia, notably Indonesia, are increasingly shaping scholarly debates. Third, the intellectual structure of the field is grounded in classic information systems and organizational theories while increasingly incorporating disruptive technologies such as machine learning, blockchain, and big data analytics.

These findings carry important implications. For academics, they highlight the necessity of amalgamating insights from accounting, information systems, and sustainability studies to formulate comprehensive theoretical frameworks. For practitioners and regulators, the results highlight the urgency of digital competency building, the integration of ESG considerations into financial reporting, and the need for international collaboration to address governance and assurance challenges in a digitally connected world. Finally, the study points to several directions for future research. Greater attention is needed to comparative cross-country perspectives, the longitudinal effects of technology adoption, and the operationalization of sustainability reporting through digital tools. Furthermore, subsequent research should investigate the mechanisms of knowledge transfer between technical disciplines and accounting practice, ensuring that innovations in AI and blockchain are converted into significant improvements in assurance, transparency, and accountability.

To conclude, the analysis shows that digital transformation in accounting has evolved from isolated applications of information systems to a mature, interdisciplinary, and globally significant research domain. By clarifying its intellectual structure and thematic evolution, the study provides a foundation for advancing both scholarly inquiry and professional practice in the digital era.

Limitations and Future Research

This study is subject to certain limitations. First, it relies solely on Scopus-indexed publications and therefore may not capture relevant work indexed in other databases. Second, bibliometric methods reflect publication patterns rather than evaluating the quality of individual studies. Future research could extend this work by incorporating additional databases (e.g., Web of Science, Dimensions), conducting systematic reviews of thematic clusters, and examining how digital tools are operationalized in sustainability assurance and integrated reporting practices across different institutional contexts.

Author Contributions

Conceptualization: K.N.A.; data curation: K.N.A.; formal analysis: K.N.A.; investigation: K.N.A.; methodology: K.N.A.; project administration: K.N.A.; resources: K.N.A.; software: K.N.A.; supervision: K.N.A.; validation: K.N.A.; visualization: K.N.A.; writing – original draft preparation: K.N.A.; writing – review and editing: K.N.A.; funding acquisition: K.N.A.

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Artificial intelligence (AI) was used to polish the language.

Conflicts of Interest

The author declares no conflict of interest

Data Availability Statement

The dataset used in this study was retrieved from the Scopus database (https://www.scopus.com). Access to Scopus requires an institutional or individual subscription. The search query, time frame, and inclusion criteria are described in the Methodology section to enable replication.

Informed Consent Statement

Not applicable.

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