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Thematic Evolution of Digital Accounting Information Systems: A Bibliometric Mapping (2000-2025)

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ABSTRACT

This study maps the research landscape of Accounting Information Systems in the context of digital transformation by examining three key technological domains: Enterprise Resource Planning, cloud computing, and Artificial Intelligence. The dataset comprises journal articles and conference papers indexed in Google Scholar and published between 2000 and 2025 that address Accounting Information Systems in relation to at least one of these technologies. Records were retrieved using Publish or Perish and screened through purposive sampling with predefined inclusion and exclusion criteria, followed by duplicate removal, bibliographic normalization, and manual term validation, resulting in a final sample of 117 publications. Bibliometric mapping was conducted using VOSviewer to visualize co-authorship networks, keyword co-occurrence patterns, and thematic clusters, while descriptive citation indicators were employed to capture scholarly influence. The analysis identifies three dominant research clusters: Enterprise Resource Planning integration and implementation as a mature and highly cited stream; cloud-based accounting systems as a rapidly expanding stream, particularly after 2018; and Artificial Intelligence, enabled accounting and decision-support applications as an emerging yet comparatively underexplored stream. Across the studied period, publication output exhibits a sustained upward trend, accompanied by a gradual shift from system implementation studies toward platform-based and intelligent accounting applications. However, empirical research explicitly linking these technologies to organizational performance and governance outcomes remains limited. Overall, the findings reveal the evolving knowledge structure of digital Accounting Information Systems research and emphasize the need for future studies employing robust empirical designs, cross-technology integration, and clearly defined performance and accountability measures.

Keywords: *Accounting Information Systems; Artificial Intelligence; Bibliometric Analysis; Cloud Computing; ERP*

INTRODUCTION

The rapid advancement of digital technologies has fundamentally reshaped business processes, including accounting functions that increasingly rely on sophisticated information systems. Digital transformation encourages organizations to adopt integrated and intelligent platforms that enhance the efficiency, reliability, and timeliness of financial information. In this context, Accounting Information Systems (AIS) have evolved from transactional recording tools into strategic systems that support organizational decision-making by integrating technologies such as Enterprise Resource Planning (ERP), Cloud Computing, and Artificial Intelligence (AI) (Wicaksono et al., 2024).

ERP systems enable real-time integration across functional areas, ensuring consistency of

accounting data and improving coordination, reporting accuracy, and internal control (Nadiar et al., 2022). Cloud-based accounting systems further extend these capabilities by offering scalability, flexibility, and cost efficiency, allowing organizations to process and store financial information beyond traditional infrastructure constraints (Ammar, 2025). Meanwhile, AI introduces automation and analytical intelligence through anomaly detection, predictive analytics, and decision-support applications, although its adoption within AIS remains uneven and relatively limited compared with ERP and cloud technologies (Murphy et al., 2024). Collectively, these technologies signal a paradigm shift in how accounting information is generated, analyzed, and utilized in the digital era.

Academic interest in AIS-related digital technologies has expanded markedly over the past two decades (İyibildiren et al., 2023a). Prior studies have examined ERP implementation success and integration challenges in accounting contexts (e.g., Nadiar et al., 2022), the adoption and benefits of cloud-based accounting solutions (e.g., Ammar, 2025), and emerging applications of AI in auditing and accounting analytics (e.g., Murphy et al., 2024). However, much of the existing literature remains fragmented, as studies typically focus on individual technologies in isolation rather than examining how ERP, cloud computing, and AI jointly shape the development of AIS. This technological siloing limits a holistic understanding of AIS digital transformation and constrains the identification of integrative research opportunities (Michael et al., 2025).

Despite the growing volume of publications, relatively few studies have systematically mapped the intellectual structure, collaboration patterns, and thematic evolution of AIS research in the digital transformation era. Existing bibliometric studies on AIS tend to provide broad overviews or focus on specific subdomains without explicitly integrating ERP, cloud, and AI perspectives (Chiu et al., 2019; İyibildiren et al., 2023). As a result, knowledge gaps remain regarding dominant research streams, emerging themes, and underexplored empirical directions, particularly those linking digital AIS technologies to organizational performance and governance outcomes. Despite the rapid growth of AIS-related digital transformation studies, there is still no comprehensive and integrated bibliometric mapping that systematically examines how ERP, cloud computing, and artificial intelligence collectively shape the intellectual structure and research evolution of Accounting Information Systems.

To address these gaps, this study employs a bibliometric mapping approach. Bibliometrics enables the quantitative analysis of large bodies of literature through citation patterns, keyword co-occurrences, and collaboration networks, thereby revealing the structural and thematic dynamics of a research field (Donthu et al., 2021). Using VOSviewer, this study visualizes co-authorship networks, thematic clusters, and keyword evolution to provide an objective and replicable overview of AIS research development. Compared with narrative literature reviews, bibliometric analysis offers greater transparency and systematic insight into research trends and intellectual linkages within rapidly expanding domains.

Google Scholar was selected as the primary data source and processed using Publish or Perish (PoP) due to its broad coverage of journal articles, conference proceedings, and other scholarly outputs. Compared with Scopus and Web of Science, Google Scholar offers more inclusive representation of research from emerging economies, which is particularly relevant for capturing diverse AIS implementation contexts (Chiu et al., 2019). This approach supports a comprehensive and transparent mapping of AIS digital transformation research.

Accordingly, this study aims to provide an integrated overview of AIS research in the digital transformation era by focusing on ERP, Cloud Computing, and AI. To achieve this objective, the study addresses the following research questions:

RQ1: How have publication trends related to AIS, ERP, cloud computing, and AI evolved between 2000 and 2025?

RQ2: What thematic clusters and keyword structures dominate AIS digital transformation research, and how have these themes evolved over time?

RQ3: Which authors and collaboration networks are most influential in shaping AIS research related to ERP, cloud computing, and AI?

RQ4: What empirical and conceptual research gaps emerge from the existing literature to inform future AIS research agendas?

This study contributes to the literature in two main ways. Theoretically, it advances

bibliometric understanding by offering an integrated mapping of AIS research that simultaneously examines ERP, cloud, and AI perspectives. Practically, the findings provide guidance for researchers, practitioners, and policymakers in identifying research priorities, fostering interdisciplinary collaboration, and supporting strategic decision-making related to accounting digitalization.

LITERATURE REVIEW

Accounting Information Systems and Digital Transformation Technologies

Accounting Information Systems (AIS) constitute the core infrastructure through which financial information is generated, processed, and communicated within organizations. Beyond their traditional transactional role, contemporary AIS increasingly function as integrative and analytical platforms that support organizational coordination, control, and strategic decision-making (Zhen & Zhen, 2023). This transformation is driven by the adoption of digital technologies that reshape accounting processes, data architectures, and governance mechanisms.

Enterprise Resource Planning (ERP) systems have historically represented the foundational technology in this transformation by integrating accounting with operational functions such as supply chain management, human resources, and customer relationship management. Prior empirical studies consistently associate ERP adoption with improved reporting accuracy, internal control effectiveness, and process standardization (Mutmainah et al., 2025; Nadiar et al., 2022). Nevertheless, the literature also documents persistent challenges related to system customization, high implementation costs, and organizational resistance, indicating that ERP enabled AIS transformation is not merely a technical process but a socio-organizational one.

Cloud-based accounting systems extend the integration logic of ERP by shifting AIS infrastructures toward platform-based, scalable, and location-independent environments. Empirical research highlights flexibility, cost efficiency, and collaboration as major drivers of cloud accounting adoption, particularly among small and medium-sized enterprises (Saha et al., 2020). However, concerns regarding data security, regulatory compliance, and vendor dependency remain prominent barriers (Al-Hattami, 2024; Ammar, 2025). Importantly, while adoption focused studies dominate the literature, relatively few empirical works rigorously link cloud-based AIS to organizational performance outcomes, suggesting an imbalance between technological diffusion and outcome-based evaluation.

Artificial Intelligence (AI) represents the most recent and analytically transformative development within AIS. AI-enabled applications, such as machine learning–based anomaly detection, predictive analytics, and automated auditing, introduce cognitive capabilities that move AIS beyond integration and accessibility toward intelligent decision support (Berdiyeva et al., 2023). Compared with ERP and cloud technologies, however, AI-related AIS research remains fragmented and largely conceptual, with limited empirical validation of its performance and governance implications (Murphy et al., 2024). This uneven maturity across technologies suggests the presence of distinct developmental stages within AIS digital transformation research.

Theoretical Lens for Interpreting AIS Digital Transformation

To interpret the intellectual structure and thematic clusters identified in bibliometric mapping, this study adopts Diffusion of Innovation (DOI) Theory as its primary theoretical lens (Overbye-Thompson & Hamilton, 2025). DOI theory explains how innovations are adopted and diffused over time based on perceived relative advantage, compatibility, complexity, trialability, and observability. This framework is particularly relevant for AIS research, as ERP, cloud computing, and AI represent successive waves of technological innovation with differing adoption trajectories and organizational implications.

Within the AIS context, ERP systems can be interpreted as a relatively mature innovation that has reached late adoption and institutionalization stages, reflected in extensive empirical evaluation and standardized implementation models. Cloud-based accounting systems correspond to an early-to-middle diffusion stage, characterized by rapid adoption growth alongside ongoing concerns related to security and regulation. AI-enabled AIS applications, by contrast, remain in an early diffusion phase, with exploratory research dominating and limited large-scale empirical evidence. DOI theory thus provides a coherent interpretive framework for understanding the emergence,

dominance, and maturity of thematic clusters identified through bibliometric analysis, while also explaining the observed imbalance between technological adoption and performance-oriented research.

Bibliometric Studies in AIS and Digital Transformation

Bibliometric analysis has increasingly been employed to synthesize large bodies of accounting and information systems research by examining citation structures, collaboration networks, and thematic evolution. Prior bibliometric studies in accounting have explored domains such as digital auditing, financial reporting, and accounting education using tools like VOSviewer and Biblioshiny (Puri & Garg, 2024). However, bibliometric research explicitly centered on AIS remains relatively limited and often adopts broad scopes without integrating specific digital transformation technologies.

Notably, existing AIS-related bibliometric studies tend to focus on general research trends or hotspot themes without systematically examining how ERP, cloud computing, and AI intersect within the AIS domain (İyibildiren et al., 2023). Methodologically, many prior studies rely exclusively on Scopus or Web of Science databases, which while curated, may underrepresent conference proceedings and regional studies that are particularly relevant for emerging digital accounting practices (Chiu et al., 2019). Moreover, reporting on data cleaning, duplication control, and term normalization is often insufficient, raising concerns regarding reproducibility and thematic accuracy.

Research Gap and State of the Art Positioning

The reviewed literature reveals several interrelated gaps. Substantively, ERP and cloud-based AIS have been extensively studied, whereas AI-enabled AIS remains underexplored and lacks systematic empirical assessment. Conceptually, prior studies frequently analyze these technologies in isolation, limiting theoretical integration across different stages of digital innovation within AIS. Methodologically, existing bibliometric analyses rarely combine broad data coverage with transparent data cleaning and thematic mapping procedures.

This study addresses these gaps by providing an AIS-centric, integrated bibliometric mapping that simultaneously examines ERP, cloud computing, and AI as interconnected dimensions of digital transformation. Unlike prior bibliometric works that focus on isolated accounting domains or single technologies, this study explicitly maps the intersection of AIS and multiple digital innovations using Google Scholar data extracted via Publish or Perish and visualized through VOSviewer. The inclusion of transparent data cleaning and term validation procedures further enhances robustness and reproducibility.

Table 1. Prior Bibliometric Studies in Accounting vs This Study

Author(s), Year	Focus Area	Database(s) Used	Tool(s) Applied	Limitation(s)	This Study Contribution
Donthu et al., (2021)	Bibliometric methods in business and management	Scopus, WoS	VOSviewer, Biblioshiny	Broad scope, not specific to AIS	Focused on AIS within digital transformation (ERP/Cloud/AI)
Silva et al., (2025)	Digital accounting and thematic evolution	Scopus	VOSviewer, Bibliometrix (R-package)	Single database, limited qualitative depth	Mapping trends, themes, and AIS-digital transformation integration
Puri & Garg, (2024)	Digital financial reporting research trends and emerging topics	Scopus, Emerald, Google Scholar, OpenAlex, Crossref, SAGE	Bibliometric methods (e.g., trend analysis, keyword mapping)	Multiple database biases, data scope variability	Highlights digitalization's impact on financial reporting quality

Author(s), Year	Focus Area	Database(s) Used	Tool(s) Applied	Limitation(s)	This Study Contribution
İyibildiren et al., (2023)	Bibliometric mapping of AIS research trends globally	WoS	VOSviewer	Only WoS, time-limited	Reveals AIS research trends and hotspot themes globally
This Study (2025)	AIS & Digital Transformation (ERP/Cloud/AI)	Google Scholar (via PoP)	PoP, VOSviewer	—	First integrated mapping of ERP, Cloud, and AI in AIS literature

Source: Authors' compilation based on bibliometric literature review and analyzed data (2025)

As summarized in Table 1, previous bibliometric studies have contributed valuable insights into accounting research trends but have not comprehensively mapped the integrated development of ERP, cloud, and AI within the AIS domain. By positioning these technologies along a diffusion-based theoretical framework, this study advances both the methodological rigor and theoretical coherence of bibliometric research in accounting information systems.

RESEARCH METHOD

This study employs a bibliometric research design to systematically map the scientific literature on Accounting Information Systems (AIS) in the context of digital transformation, with a specific focus on Enterprise Resource Planning (ERP), Cloud Computing, and Artificial Intelligence (AI). Bibliometric analysis enables the quantitative examination of large bodies of academic publications through citation structures, keyword co-occurrence patterns, and collaboration networks, thereby ensuring transparency, objectivity, and replicability.

The methodological workflow followed six sequential stages: data retrieval, data extraction, screening and cleaning, threshold setting, visualization and mapping, and interpretation. The overall research process is summarized in Figure 1.

Data Retrieval and Search Strategy

Bibliographic data were retrieved from Google Scholar using the Publish or Perish (PoP) software**,** owing to its broad coverage of journal articles, conference proceedings, and interdisciplinary publications relevant to AIS research. Data retrieval was conducted on 15 January 2025. The search was restricted to publications released between 2000 and 2025 and applied to the title, abstract, and keyword fields. To capture both English and Indonesian terminology while minimizing irrelevant records, the following Boolean query was used: ("accounting information system" OR "sistem informasi akuntansi" OR AIS OR SIA) AND (ERP OR "enterprise resource planning" OR "cloud accounting" OR "cloud ERP" OR "cloud computing" OR AI OR "artificial intelligence" OR "machine learning") NOT "automatic identification system".

The exclusion of the term "automatic identification system" was necessary to avoid misclassification of AIS terminology commonly used in maritime and logistics research. Data retrieval was conducted using Publish or Perish with specific settings to ensure relevance and consistency, including a maximum retrieval limit of 500 records, citation sources restricted to Google Scholar, a publication year filter covering the period 2000–2025, and document types limited to journal articles and conference papers.

Screening and Data Cleaning Procedure

The initial search yielded 186 records. A PRISMA-like screening procedure was applied to ensure data quality and relevance. First, 41 duplicate records were identified and removed. Second, 28 publications were excluded based on title and abstract screening because they were unrelated to AIS or focused exclusively on non-accounting applications of ERP, cloud computing, or AI.

After full screening and cleaning, the final dataset consisted of 117 publications, which formed the basis for all subsequent analyses. These 117 publications represent the final, cleaned dataset, not the initial retrieval.

Data cleaning involved standardizing author names, keywords, and terminology (e.g.,

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harmonizing "ERP systems" and "Enterprise Resource Planning"), as well as removing incomplete or inconsistent metadata. Manual verification was conducted during the VOSviewer preprocessing stage to ensure thematic relevance.

Citation Metrics and Descriptive Validation

Descriptive citation metrics were generated using Publish or Perish to provide an overview of the scholarly impact and temporal scope of the dataset. Given known metadata noise in Google Scholar, only commonly accepted and interpretable indicators were retained. Metrics that showed implausible parsing (e.g., cites per author, papers per author) were excluded to avoid misinterpretation. Table 2 summarizes the validated citation metrics used in this study.

Table 2. Citation Metrics of the Dataset

Metric	Value	Description
Citation years	25 (2000-2025)	Time span (years) covered by the citation data
Total papers	117	Number of retrieved publications
Citations	30,571	Total number of citations received by all papers in the dataset
Cites per year	1222.84	Average number of citations received per year over the covered period
Cites per paper	261.29	Average number of citations received per paper
Cites per author	14.754,29	Average number of citations attributed to each author
Papers per author	62.51	Average number of papers written per author in the dataset
Authors per paper	2.44	Average number of contributing authors per paper in the dataset
h-index	75	At least h papers with h citations each
g-index	117	Gives more weight to highly cited articles
AWCR	6,310.63	Citations adjusted for publication age

Source: Analyzed data using Publish or Perish (2025)

These indicators confirm that the dataset represents a substantial and influential body of literature, suitable for bibliometric mapping and thematic analysis.

Threshold Setting and Term Relevance

Keyword co-occurrence analysis was conducted in VOSviewer using author keywords and index terms. A minimum occurrence threshold of two was applied, resulting in 784 identified terms, of which 109 terms met the threshold criterion. To improve thematic clarity and reduce noise, 60% of the most relevant terms were retained based on VOSviewer's relevance score. Manual verification was subsequently performed to remove generic or irrelevant terms, ensuring that the final term set accurately reflected AIS and digital transformation concepts.

Visualization and Bibliometric Mapping

The cleaned dataset was analyzed using VOSviewer to generate bibliometric visualizations through several complementary analytical approaches. These analyses included co-authorship analysis to identify influential authors and collaboration networks, keyword co-occurrence analysis to map thematic structures and research topics, and citation and co-citation analysis to reveal influential publications and the underlying intellectual foundations of the field. In addition, overlay and density visualizations were employed to examine the temporal evolution of themes and the relative intensity of research activity over time. The resulting visualizations were systematically interpreted to identify dominant clusters, emerging themes, and underexplored research areas within the Accounting Information Systems digital transformation literature.

Limitations and Mitigation Strategies

While Google Scholar offers extensive coverage, it is susceptible to duplicate records and

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inconsistent metadata. These limitations were mitigated through rigorous data cleaning, manual verification, and conservative selection of citation metrics. The inclusion of conference papers may introduce heterogeneity but enhances representativeness, particularly for emerging technologies such as AI in AIS research.

Methodological Framework

To ensure transparency and reproducibility, the bibliometric workflow followed six structured stages: (1) data retrieval, (2) data extraction, (3) screening and cleaning, (4) threshold setting, (5) visualization and mapping, and (6) interpretation and thematic analysis. The overall methodological framework is illustrated in Figure 1.

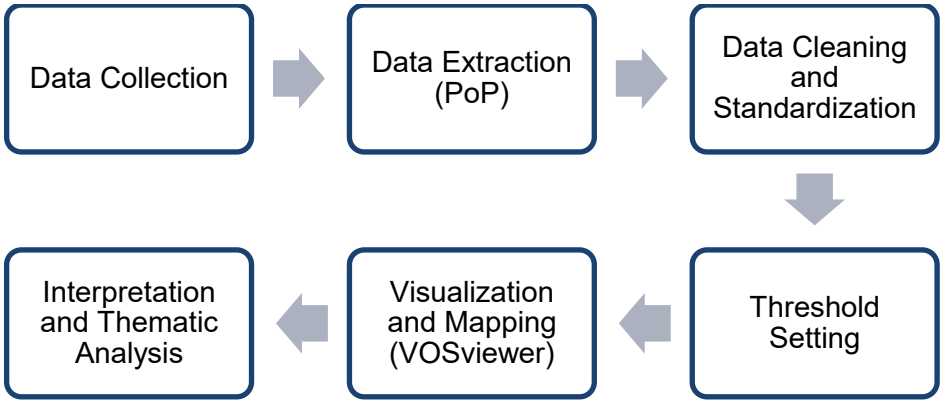

Figure 1. Methodological Framework of the Study

This multi-step process ensures a systematic, transparent, and replicable bibliometric investigation aligned with established scholarly standards in accounting and information systems research.

RESULTS

Overview of Keyword Co-occurrence and Thematic Clusters

The keyword co-occurrence analysis identified 784 unique terms, of which 109 terms met the minimum occurrence threshold (≥2). After retaining the top 60% most relevant terms based on the VOSviewer relevance score and conducting manual verification, three dominant thematic clusters emerged, reflecting the core intellectual structure of AIS digital transformation research.

Table 3. Summary of Keyword Co-occurrence

Cluster	Main Keywords	Research Focus
1	ERP, ERP system, enterprise resource planning, implementation	Integration of AIS with ERP adoption and organizational effectiveness
2	Cloud, cloud accounting, system, data, value	Digital transformation of AIS through cloud-based solutions
3	Artificial intelligence, AI agent, generative AI, decision support, risk	Emerging role of AI in decision-making, automation, and AIS innovation

Source: Analyzed data (2025)

The clustering results indicate a clear differentiation of research streams, with ERP representing a mature and dominant theme, cloud accounting forming a rapidly expanding stream, and AI-related AIS research emerging as a relatively new but growing domain.

Density Visualization: Core and Peripheral Themes

The density visualization (Figure 2) illustrates the relative concentration of keywords across the AIS literature. Accounting Information Systems (AIS) occupies the central position with the highest density, confirming its role as the conceptual anchor of the field. Closely surrounding AIS

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are ERP**,** enterprise resource planning**,** and artificial intelligence, indicating their strong and frequent association with AIS research.

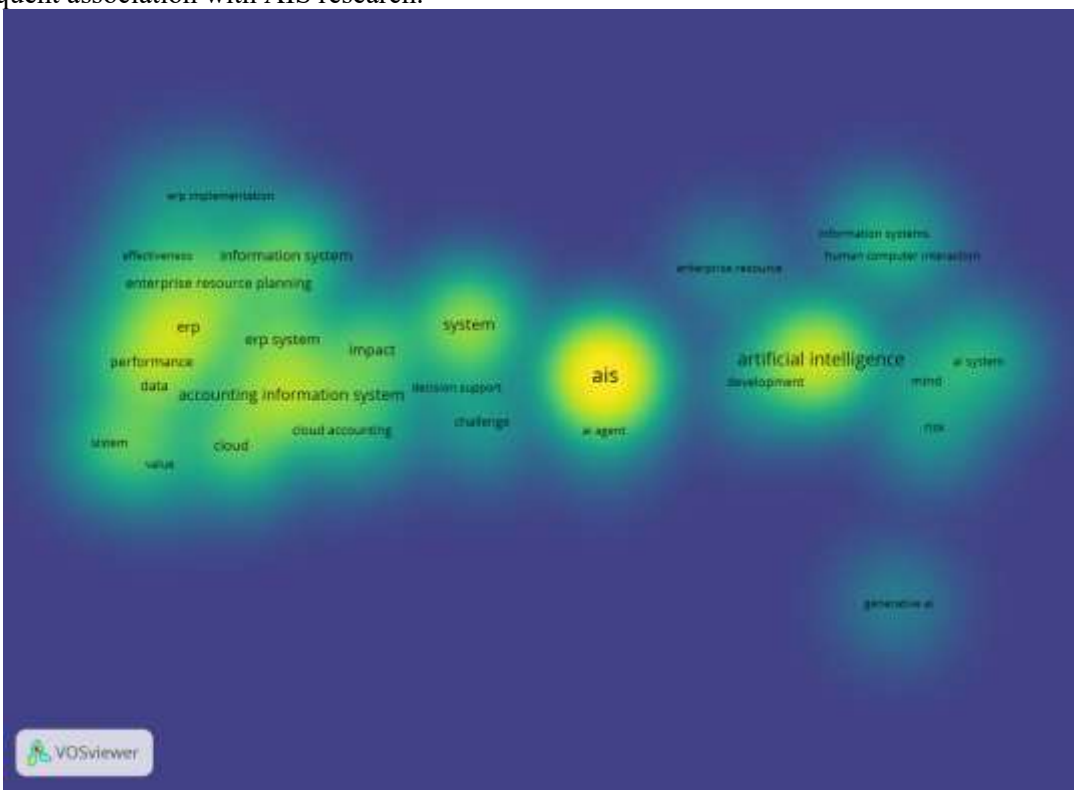

Figure 2. Density Visualization of Keyword Co-occurrence

Cloud and cloud accounting appear with moderate density, suggesting increasing scholarly attention but lower historical saturation compared with ERP-focused studies. In contrast, generative AI appears as a low-density peripheral node, reflecting its recent emergence and limited integration into mainstream AIS research. This pattern suggests that AIS scholarship has gradually transitioned from ERP-centric discussions toward cloud-based and intelligent systems, albeit with uneven maturity across technologies.

Network Visualization: Interconnected Knowledge Structure

The network visualization (Figure 3) reveals the structural relationships among keywords and clusters within the AIS digital transformation literature. Accounting Information Systems (AIS) and artificial intelligence function as major hubs connecting multiple thematic areas, indicating their integrative roles in linking system infrastructure, data analytics, and decision-support research streams. Enterprise Resource Planning (ERP) forms a dense and cohesive sub-network, closely associated with implementation, system integration, internal control, and organizational impact, which reflects its maturity and long-standing dominance in AIS scholarship. Cloud-related keywords occupy an intermediate structural position, acting as a conceptual bridge between established ERP-based systems and emerging AI-enabled applications. This bridging role suggests that cloud technologies facilitate the transition toward more flexible, scalable, and data-intensive AIS architectures. Overall, the observed network structure highlights a gradual shift from isolated technology silos toward a more interconnected and layered knowledge structure, where ERP, cloud computing, and AI increasingly converge to shape the future trajectory of AIS research.

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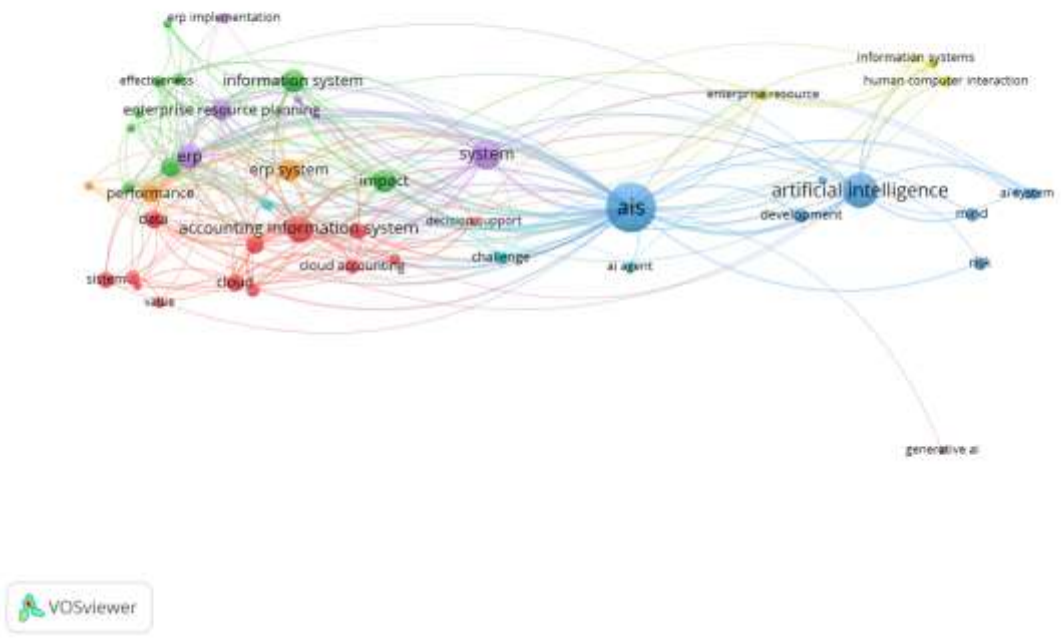

Figure 3. Network Visualization of Keyword Co-occurrence

The dense interconnections among clusters indicate that recent AIS research increasingly adopts a multi-technology perspective, integrating ERP infrastructure with cloud platforms and AI-enabled analytics. However, the relatively peripheral position of generative AI suggests that full integration of advanced AI technologies into AIS remains at an early stage.

Overlay Visualization: Temporal Evolution of Research Themes

The overlay visualization (Figure 4) highlights the temporal evolution of AIS research themes across the studied period. Keywords associated with ERP and system implementation dominate earlier periods (2012–2015), reflecting the foundational phase of AIS digitalization that emphasized system integration, process standardization, and internal control. From approximately 2016 onwards, cloud accounting and digital platform–related themes begin to emerge, indicating a transitional phase toward more scalable, flexible, and platform-based AIS architectures. In the most recent period, keywords related to artificial intelligence, decision support, and generative AI appear with higher average publication years, signaling a shift toward intelligent automation and advanced analytics. This temporal progression illustrates a gradual reorientation of AIS scholarship from infrastructure-focused implementation studies toward data-driven and intelligent accounting applications, consistent with broader digital transformation trends.

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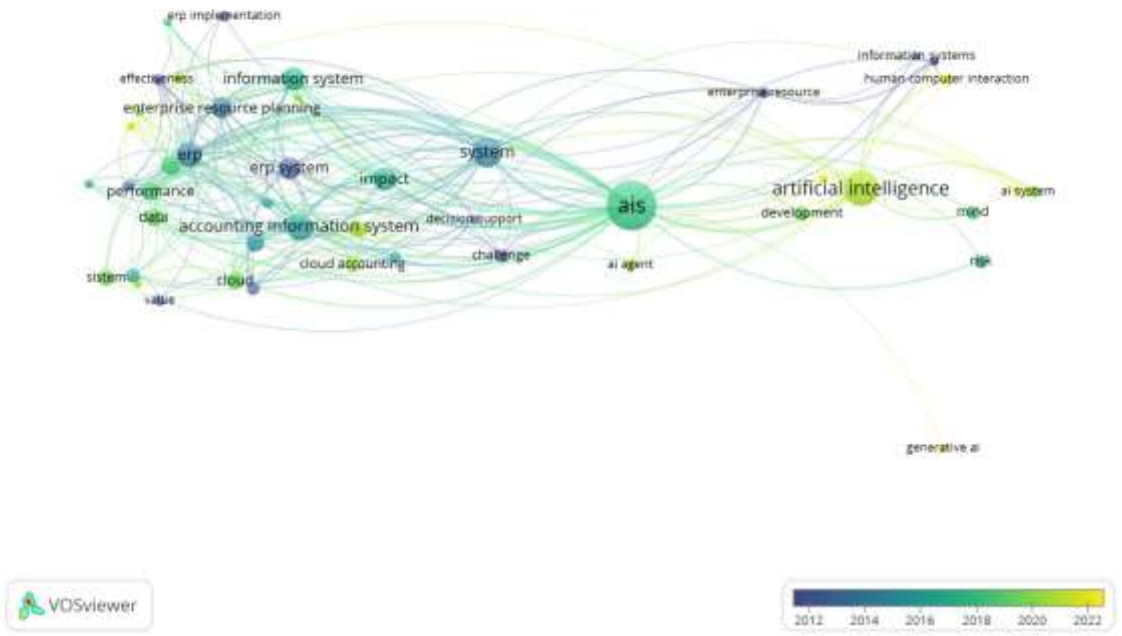

Figure 4. Overlay Visualization of Keyword Co-occurrence

The most recent period (post-2019) is characterized by keywords such as artificial intelligence, AI system, and generative AI, signaling a shift toward intelligent automation and decision-support applications. This temporal progression illustrates a diffusion trajectory from mature ERP technologies to emerging AI-driven AIS innovations.

Most Influential Documents (Top-Cited Publications)

Citation analysis was conducted to identify the most influential publications forming the intellectual base of AIS digital transformation research. Table 4 presents the ten most cited documents within the dataset.

Table 4. Top 10 Most Cited Publications in AIS Digital Transformation Research (2000–2025)

Rank	Year	Title	Journal / Source	Technology Focus	Total Citations (GS)
1	2001	*Enterprise Resource Planning Systems Research: An Annotated Bibliography*	*Communications of the Association for Information Systems*	ERP	707
2	2011	*A Review of ERP Research: A Future Agenda for Accounting Information Systems*	*Journal of Information Systems*	ERP–AIS	702
3	2011	*Extending Accounting Information Systems Research to*	*International Journal of Accounting Information Systems*	AIS	391

		Management Accounting and Control Issues			
4	2020	*Accounting Information Systems: Controls and Processes*	John Wiley & Sons	AIS	380
5	2004	*Enterprise Resource Planning Systems' Impact on Accounting Processes*	*Business Process Management Journal*	ERP–AIS	342
6	2016	*The Reports of My Death Are Greatly Exaggerated: Artificial Intelligence Research in Accounting*	*International Journal of Accounting Information Systems*	AI–AIS	340
7	2004	*An Institutional Perspective on Sources of ERP Package–Organisation Misalignment*	*Journal of Strategic Information Systems*	ERP	332
8	2002	*Enterprise Resource Planning (ERP) Systems as a Technology of Power*	*ACM SIGMIS Database*	ERP	314
9	2004	*Accounting Information Systems*	AIS Textbook	AIS	1,190
10	2023	*Accounting Information Systems*	Circle Archive Ekonomi	AIS	1,347

Source**:** Citation data extracted from Google Scholar using Publish or Perish (2025)

These highly cited works primarily address system integration, digital transformation frameworks, and bibliometric methodologies, reinforcing the dominance of ERP-based and platform-oriented perspectives in AIS research.

Co-authorship Network: Collaboration Patterns

The co-authorship analysis reveals a moderately fragmented collaboration structure, with several small clusters of authors rather than a single dominant research network. Influential authors tend to form localized collaboration groups, often centered around specific institutions or regional contexts. This pattern suggests that AIS digital transformation research is globally dispersed, with limited cross-regional collaboration.

Despite this fragmentation, emerging connections between authors working on cloud accounting and AI topics indicate growing interdisciplinary engagement, particularly between accounting, information systems, and data analytics scholars.

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Co-citation Analysis: Intellectual Foundations

Co-citation analysis identifies the theoretical and methodological foundations underpinning AIS digital transformation research. Foundational works related to information systems adoption, technology diffusion, and digital transformation form the core intellectual structure, alongside methodological references on bibliometric analysis.

The prominence of ERP and information systems adoption literature within co-citation clusters further confirms the maturity of ERP-based AIS research. In contrast, AI-related co-citation clusters remain less dense, reflecting the early diffusion stage and limited theoretical consolidation of AI applications within AIS.

Synthesis of Results

Taken together, the results demonstrate that AIS digital transformation research exhibits a three-stage knowledge structure, which is a mature ERP-driven foundation, a rapidly expanding cloud-based transformation phase, and an emerging AI-enabled innovation frontier. This structure aligns with the diffusion-based theoretical lens adopted in this study and provides empirical support for the uneven maturity and integration of digital technologies within AIS scholarship.

DISCUSSION

Theoretical Implications

The bibliometric results demonstrate a clear evolutionary trajectory of Accounting Information Systems (AIS) research, progressing from ERP-centered system integration toward cloud-based platforms and, more recently, AI-enabled applications. Interpreted through the lens of Diffusion of Innovation (DOI) Theory, this progression reflects differentiated stages of technological adoption rather than simultaneous development. ERP systems represent a mature innovation that has reached institutionalization within AIS research, as evidenced by their dominance in citation impact, keyword density, and co-citation structures. The extensive empirical validation and standardized implementation frameworks associated with ERP align with DOI characteristics of innovations adopted by the *early majority* and consolidated over time.

Cloud computing occupies an intermediate diffusion stage, reflecting a transition from adoption-driven inquiry to broader organizational integration. The rapid increase in cloud-related keywords and publications since the late 2010s suggests accelerating diffusion; however, its comparatively moderate citation density indicates that theoretical consolidation and long-term performance validation are still ongoing. In contrast, AI-enabled AIS research corresponds to the innovator stage of DOI, characterized by exploratory studies, conceptual framing, and limited but influential empirical evidence. The peripheral yet temporally recent positioning of AI-related keywords, including generative AI, supports this interpretation. Collectively, these findings extend AIS theory by conceptualizing digital transformation not as a monolithic shift, but as a layered diffusion process, where technologies coexist at different maturity levels and jointly reshape accounting functions.

Methodological Implications

From a methodological standpoint, the results reveal an imbalance between technological adoption studies and outcome-oriented empirical research. While ERP and cloud accounting studies frequently examine implementation success and adoption determinants, relatively few studies rigorously assess their causal impact on organizational performance, governance quality, or decision effectiveness. This gap is even more pronounced in AI-related AIS research, where conceptual discussions often outpace empirical validation. The bibliometric patterns indicate a reliance on case studies, surveys, and adoption models, with limited use of longitudinal designs, experimental methods, or mixed-method approaches capable of capturing dynamic technological effects.

Furthermore, governance-related variables, such as data privacy, algorithmic transparency, accountability, and ethical risk, remain underrepresented across all three technological streams. This omission is particularly critical for AI-enabled AIS, where automated decision-making introduces new control and assurance challenges. Methodologically, future AIS research would benefit from integrating performance metrics, governance indicators, and risk measures into

empirical models, as well as from comparative designs that distinguish between organizational size, industry context, and regulatory environments. Such approaches would strengthen the explanatory power and practical relevance of AIS digital transformation research.

Future Research Agenda

Building on the identified theoretical and methodological gaps, this study proposes several targeted directions for future Accounting Information Systems research. These include empirical examination of integrated ERP–cloud–AI architectures and their effects on organizational performance, decision quality, and process efficiency; investigation of AI governance and accountability frameworks addressing algorithmic transparency, auditability, ethical risk, and regulatory compliance in accounting systems; and longitudinal studies linking digital AIS adoption to value creation, financial performance, operational resilience, and strategic agility. Further research is also needed on AI-driven audit and assurance analytics, including continuous auditing, anomaly detection, and real-time assurance models, as well as on data privacy, cybersecurity, and data ownership challenges in cloud- and AI-based AIS environments. Comparative studies between small and medium-sized enterprises and large organizations are recommended to examine differential adoption drivers, constraints, and outcomes of digital AIS technologies. In addition, cross-country and institutional analyses focusing on emerging economy contexts would enhance understanding of how regulatory environments, infrastructure readiness, and resource constraints shape AIS digital transformation. Collectively, these research directions move AIS scholarship beyond descriptive adoption patterns toward integrated, outcome-driven, and governance-aware inquiry, positioning AIS research to better address the complexities of digital transformation in contemporary organizations.

CONCLUSION

This study investigated the intellectual structure and thematic evolution of Accounting Information Systems (AIS) research in the era of digital transformation, with particular emphasis on Enterprise Resource Planning (ERP), Cloud Computing, and Artificial Intelligence (AI). Using bibliometric techniques through Publish or Perish and VOSviewer, 117 publications were analyzed, yielding 30,571 citations with robust citation metrics (h-index = 75, g-index = 117). The analysis revealed three major insights. First, ERP remains the most mature and influential research theme, demonstrating strong citation performance and centrality across both density and network visualizations. Second, Cloud-based accounting represents a transitional theme—showing rapid growth and expanding connectivity, yet requiring further empirical exploration to establish its long-term impact. Third, AI-related research, including machine learning and generative AI, emerges as a frontier topic, signalling the next phase of digital transformation in AIS despite its relatively modest citation accumulation. Theoretically, this study advances bibliometric understanding by offering the first integrated mapping of ERP, Cloud, and AI within AIS literature, thus refining knowledge on how technological diffusion shapes accounting research trajectories. Practically, the findings encourage scholars to investigate AI-driven audit analytics, intelligent decision-support systems, and cloud–AI hybrid architectures, while practitioners are advised to adopt scalable cloud platforms and AI-enabled tools to enhance accounting efficiency and predictive capabilities. Future research should extend this study by incorporating multiple databases such as Scopus or Web of Science for broader coverage, conducting longitudinal bibliometric tracking to capture temporal evolution, and integrating cross-disciplinary domains such as fintech, blockchain, or sustainability reporting to deepen theoretical and practical insights into the digitalization of AIS.

This study provides a comprehensive bibliometric mapping of Accounting Information Systems (AIS) research in the context of digital transformation, with a particular focus on Enterprise Resource Planning (ERP), Cloud Computing, and Artificial Intelligence (AI). By synthesizing the intellectual structure, thematic clusters, and temporal evolution of the literature, the findings demonstrate that AIS research has progressed through distinct yet interconnected stages of technological development. The results indicate that ERP-based AIS research constitutes a mature and well-established foundation, characterized by strong centrality and long-term scholarly influence. Cloud-based accounting systems represent a transitional phase, marked by rapidly increasing research attention and expanding thematic connectivity, yet still requiring deeper

empirical validation to substantiate their organizational and governance impacts. In contrast, AI-enabled AIS research, encompassing machine learning and generative AI, emerges as a nascent but strategically significant frontier, reflecting a shift toward intelligent automation, advanced analytics, and decision-support capabilities in accounting systems.

From a theoretical perspective, this study advances AIS scholarship by integrating ERP, cloud computing, and AI within a unified bibliometric framework, thereby illustrating how digital transformation unfolds as a layered diffusion process rather than a single technological shift. This perspective enriches existing AIS and information systems theories by highlighting the coexistence of technologies at different maturity levels and their cumulative influence on accounting practices. Practically, the findings underscore the importance for researchers and practitioners to move beyond isolated technology adoption toward integrated digital architectures that combine ERP infrastructure, cloud platforms, and AI analytics.

Future research should build on this study by adopting database triangulation strategies, for example, combining Scopus, Web of Science, and open scholarly infrastructures such as OpenAlex or Crossref, to enhance coverage, robustness, and comparability of bibliometric insights. Longitudinal bibliometric analyses are also recommended to capture dynamic shifts in research focus over time. Substantively, further investigation is needed into AI governance, assurance and audit analytics, performance and value-creation outcomes, and the differential impacts of digital AIS adoption across organizational sizes and institutional contexts. Such efforts will strengthen the theoretical depth and practical relevance of AIS research in an increasingly digitalized accounting environment.

To further strengthen the novelty and contemporary relevance of this study, recent research has emphasized the growing importance of artificial intelligence governance and accountability within Accounting Information Systems. For instance, Murphy et al., (2024) highlight the need for ethical frameworks and transparency mechanisms in AI-enabled accounting analytics, while Michael et al., (2025) argue that explainability and auditability of AI-driven AIS are critical to maintaining trust and regulatory compliance. These emerging perspectives reinforce the positioning of AI-enabled AIS as not only a technological frontier but also a governance and accountability challenge, thereby underscoring the strategic contribution of this bibliometric mapping in identifying AI as a key future research trajectory within digitalized accounting systems.

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