

Scientific production and research trends in accounting information systems

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ABSTRACT

Objective. This study aims to analyze trends in research on accounting information systems (AIS) as reflected in the Scopus database, covering the entire period during which related works have been published. To achieve this, we have identified the main characteristics and trends of research on this topic.

Design/Methodology/Approach. To perform a bibliometric analysis, data were extracted from Scopus. First, data collection was carried out. For this purpose, scientific articles published between 1961 and 2024 were selected using keywords and previously defined inclusion/exclusion criteria. In this case, the document typology was delimited to analyze the results only for citable documents. Subsequently, bibliometric indicators were analyzed by calculating general metrics and mapping trends over the last ten years using the Bibliometrix tool.

Results/Discussion. The analyzed distribution of author productivity was consistent with Lotka's Law, showing a concentration of scientific output among a small group of highly productive authors. *Lederer AL*, *King WR*, *Grover V*, and *Marsden Jr.* are influential figures in information systems, and their contributions are directly relevant to AIS. Trends in *blockchain*, information systems, and data analytics research reveal a dynamic and transformative landscape in the AIS field. These technologies are redefining the management, analysis, and protection of data in the healthcare sector.

Conclusions. This study offers an overview of recent literature on AIS, emphasizing various bibliometric papers and review studies. The convergence of *blockchain* technology, information systems research, and data analytics is developing a more robust, secure, and intelligent AIS ecosystem.

Keywords: accounting information systems; research trends; scientific production; bibliometrics.

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1. INTRODUCTION

THE IMPLEMENTATION of technological innovations in the digital environment is driving a progressive transformation in business models across all sectors, including those traditionally seen as established, such as accounting. In this context, institutional theory serves as an important reference point for understanding accounting information systems. New institutionalism argues that organizations respond not only to rational logic but also to institutional pressures that legitimize their structures and practices. These pressures, stemming from business partners, competitors, professional networks, and government entities, influence the adoption of technologies and systems. At the same time, digital transformation introduces new actors, practices, and values that challenge or complement existing norms, resulting in significant changes in organizational strategies and operations (Schiavi *et al.*, 2024).

In the accounting field, known for its institutionalization, digital technologies—such as automation, artificial intelligence, and online platforms—are transforming processes and decision-making. These innovations not only enhance accounting tasks but also expand the use of financial information for business planning and strategy (Schiavi *et al.*, 2024). However, the implementation of these technologies poses challenges related to legitimacy and adaptation to a strict regulatory environment. Institutional change can offer a theoretical framework for understanding how new business models based on digital technologies are integrated and legitimized in the accounting sector, providing valuable insights for future research in this area (Schiavi *et al.*, 2024).

In recent decades, accounting information systems (AIS) have experienced a remarkable evolution, driven by technological advances and the increasing demand for transparency, efficiency, and informed decision-making within organizations. These systems, which integrate processes, people, data, and technology, are essential for financial and operational management, allowing the timely and accurate collection, processing, and reporting of accounting information. In the current global context, marked by ongoing digitization, AIS have adopted tools such as artificial intelligence, big

data, and process automation to enhance their effectiveness and adapt to users' needs (Warren *et al.*, 2022).

These ideas have been reaffirmed by Kocsis (2019) in a structured review of the literature focused on the design and implementation of AIS, utilizing a systematic review of abstracts from high-level journals in information systems (IS), accounting, and AIS. The most relevant issues identified include auditing/auditors, enterprise resource planning, monitoring and control, adoption, and decision-making. The most significant challenges encompass training, commitment, investment, culture, and business processes.

Two main factors have increased the relevance of AIS. First, the growing complexity of regulatory environments has necessitated the development of systems that support compliance with international standards. Additionally, the COVID-19 pandemic has accelerated digital transformation in accounting, underscoring the need for robust and flexible systems that ensure business continuity and informed decision-making in uncertain situations. Recent studies have highlighted the role of AIS in enhancing the quality of financial information, reducing errors and fraud, and enabling more efficient audits (Chen *et al.*, 2012). However, despite the progress made, challenges remain regarding data security, the integration of new technologies, and training for accounting professionals to optimize the use of these tools. This research aims to deepen the understanding of accounting information systems in the digital age. To achieve this, we will analyze their evolution, current trends, and future prospects. Consequently, we aim to provide insights that support their implementation and ongoing improvement within organizations.

1.1. Bibliometric background in Accounting Information Systems

The generation of knowledge has been marked by rapid progression, resulting in a significant increase in the volume of publications, research, and data across various fields. In this context, bibliometric studies have emerged as a vital tool for analyzing, organizing, and understanding the dynamics of scientific research. These studies enable the quantification

and evaluation of intellectual production, the identification of trends, the measurement of publication impact, and the visualization of collaboration networks among researchers and institutions. The significance of implementing bibliometric analyses stems from their ability to provide a comprehensive and objective perspective of a specific field of study. By examining bibliometric indicators, it becomes feasible to uncover emerging areas of interest, recognize knowledge gaps, and identify research opportunities. Furthermore, these studies promote informed decision-making regarding resource allocation, the formulation of scientific policies, and the prioritization of research areas.

They are an essential tool for understanding the evolution and impact of scientific research. Their implementation not only broadens knowledge on a particular subject but also promotes the progress of science by facilitating the identification of emerging trends, optimizing resources, and encouraging more efficient and collaborative research practices. In a context characterized by an abundance of scientific information but also by its dispersion, bibliometrics emerges as a link between existing knowledge and future opportunities for discovery and innovation.

AIS has been a dynamic and ever-evolving area of research, shaped by technological advancements, regulatory changes, and the emerging needs of organizations. Bibliometrics, as a tool for analyzing scientific production, has enabled the identification of trends, collaborations, and significant topics in this field. In this context, the analysis presented below examines results from recent research that has utilized bibliometric approaches to investigate accounting information systems.

The study by Kumar *et al.* (2020) offers a thorough review of AIS research through a bibliometric analysis of two decades of publications in the *International Journal of Accounting Information Systems*. The authors noted significant growth in scientific output, with a rising focus on topics such as digital auditing, artificial intelligence, and risk management. This research highlights the importance of AIS in the digital age and their role in improving transparency and efficiency in financial reporting. In contrast, İyibildiren *et al.* (2023) performed a bibliometric analysis of AIS publications in the *Web of*

Science database, using mapping techniques to identify trends and the most influential authors. The study revealed that the most common topics include the adoption of emerging technologies, information security, and systems integration. Additionally, there was evidence of a trend toward increased international collaboration.

The bibliometric study by Chiu *et al.* (2019) examines the contribution to academic knowledge regarding the methodologies used, the accounting areas studied, and the emerging technologies explored in research published in AIS journals. The comprehensive bibliometric and comparative analysis covers 681 accounting articles published from 2004, the year that marked significant recognition of research into emerging technologies in accounting, to 2016, across six AIS journals: *Journal of Information Systems* (JIS), *International Journal of Accounting Information Systems* (IJAIS), *Journal of Emerging Technologies in Accounting* (JETA), *International Journal of Digital Accounting Research* (IJDAR), *Accounting Information Systems Educator Journal* (AISEJ), and *Intelligent Systems in Accounting, Finance and Management* (ISAFM). The findings indicate that the journals analyzed do not follow a specific orientation but rather demonstrate diversity in the scope of the articles published. It is noted that all accounting articles in ISAFM address emerging technologies, followed by JETA (73.8%), IJDAR (54.6%), IJAIS (40.0%), and JIS (30.5%). Most articles focused on emerging technologies (62.3%) utilize methodologies categorized as “Other” in the classification scheme of Brigham Young University. The most common “Other” methodology is design science research (21.0%), followed by archival methods (18.7%). In terms of accounting areas, auditing (41.6%) and finance (28.5%) lead the number of studies, with AIS in third place (11.1%). Although referred to as IS audit journals, each of the six reflects contemporary accounting issues and future opportunities for practice more broadly, whether published by major international academic publishers (IJAIS and ISAFM), journals from sections of the *American Accounting Association* (JIS and JETA), or open access journals (IJDAR and AISEJ).

The Covid-19 pandemic represented a pivotal moment in AIS research and practice. Codal and Sönmez (2023) examined emerging trends

in information systems during the pandemic, noting a significant increase in research related to system resilience, process automation, and data management in remote environments. This study highlights the urgent need for flexible and adaptive systems that can respond swiftly and effectively to crises of this scale. Similarly, Damij *et al.* (2024) conducted a comprehensive review of the relevant literature, emphasizing the challenges and limitations encountered by information systems during the pandemic. The authors highlighted the importance of interoperability and scalability of information systems in crisis management, along with the critical need to enhance cybersecurity in the context of remote work. These findings reinforce the vital role of information systems in ensuring business continuity and informed decision-making in uncertain environments.

Collaboration among researchers and institutions has been crucial in advancing IS research. Hassan and Loebbecke (2017) explored the role of scientometrics in information systems, emphasizing the importance of collaborative networks and co-citation in knowledge development. This study offers a methodological framework for analyzing the intellectual structure of the field and its evolution. Similarly, Liu *et al.* (2016) examined the diversity and cohesion in information systems research from 1993 to 2012. By using visualization techniques, the authors identified thematic clusters and their evolution, demonstrating how AIS has integrated concepts from other disciplines, including business management and information technology. Mysaka and Derun (2024) conducted a bibliometric analysis of the development of AIS research, highlighting the increasing interest in artificial intelligence, blockchain, and data analytics. These topics illustrate the digital transformation in the accounting sector and its influence on decision-making. Additionally, France *et al.* (2024) studied the connections between information systems and marketing, suggesting opportunities for interdisciplinary collaboration. This approach indicates that AIS could gain from integration with other functional areas, such as customer management and logistics, to improve their effectiveness and relevance within organizations.

On another note, systematic review studies have notably advanced knowledge about AIS

and their applications across various contexts. For instance, Alismaili *et al.* (2022) conducted a systematic review of how hospital information systems can enhance patient loyalty, highlighting the importance of data integration and personalized services. This study illustrates how AIS can improve user experience and optimize resource management in critical settings, such as the healthcare sector. Similarly, Llamzon *et al.* (2022) explored the resilience and adaptability of information systems in response to external shocks, such as economic crises or pandemics, proposing a framework to ensure their robustness and flexibility. These findings are especially significant in a global context characterized by increasing volatility, where the ability of systems to respond quickly to disruptive changes is crucial.

In the field of strategic planning, Mahendra *et al.* (2022) conducted a systematic review of information systems planning in the Industry 4.0 era. The authors emphasized the critical need to integrate advanced technologies, such as the Internet of Things (IoT) and artificial intelligence, into AIS to optimize decision-making and enhance business competitiveness. This study underscores the importance of aligning information systems with the strategic objectives of organizations, especially in a digital context. In contrast, Turulja and Bajgoric (2022) carried out a systematic review on business continuity and information systems, highlighting the role of AIS in crisis management and disaster recovery. This work demonstrates that AIS are not merely operational support tools but essential components for organizational sustainability and resilience.

The objective of this study is to analyze research trends in accounting information systems through a bibliometric approach utilizing the Scopus database. This analysis will facilitate the identification of emerging topics, influential authors and institutions, collaboration networks, and the evolution of AIS research over time. Furthermore, it aims to demonstrate that, despite the numerous studies on AIS, no work integrates a comprehensive and current bibliometric perspective using Scopus as the primary source. This study will offer a systematic and up-to-date overview of the field, benefiting future research and practice in accounting information systems.

2. MATERIALS AND METHODS

The conducted study included phases or stages for its execution, which demonstrates a solid and well-defined methodological approach. This approach facilitates an in-depth understanding of research trends in AIS, providing a strong foundation for future studies in the field.

2.1. Data collection

First, the research design involved analyzing trends in AIS using the Scopus database. From a bibliometric perspective, we collected and examined previous studies in a structured and reproducible way, which made it easier to identify patterns and trends in the field. The Scopus database was selected for its extensive coverage of scientific publications across various disciplines, including social sciences, management, and accounting. Scopus is recognized for its rigorous journal indexing and for providing impact metrics, which are valuable for assessing the relevance of studies.

A search strategy was developed using key terms related to AIS. The query was created by combining keywords and Boolean operators to ensure the retrieval of relevant articles. The search concentrated on citable articles published in scientific journals, conference proceedings, and book chapters, covering the complete time span.

TITLE ("information system") AND PUBYEAR > 1960 AND PUBYEAR < 2025 AND (LIMIT-TO (SUBJAREA, "BUSI")) AND (LIMIT-TO (DOCTYPE, "ar")) OR LIMIT-TO (DOCTYPE, "cp") OR LIMIT-TO (DOCTYPE, "ch") OR LIMIT-TO (DOCTYPE, "re") OR LIMIT-TO (DOCTYPE, "cr"))

2.2. Data selection and extraction process

The process of data selection and extraction occurred in three phases. In the first phase, we identified studies through a search of the Scopus database. Next, in the second phase, duplicates were removed, and we reviewed titles and abstracts to assess the relevance of the selected studies. In the final phase, known as Phase 3, we extracted key data such as the

title, authors, year of publication, journal, keywords, abstract, methodology, and main findings. For data analysis, we employed a bibliometric approach using specialized tools that facilitated the evaluation of metrics like the annual growth of publications, the most productive authors, and research trends. Furthermore, we recognized thematic patterns over time, as well as emerging areas in AIS research. As for the tools used, bibliometric software such as VOSviewer and Bibliometrix was utilized for network analysis and data visualization.

Ethical considerations were taken into account to ensure the academic integrity of the research by properly citing all sources and respecting copyright. Additionally, no modifications were made to the original data obtained from Scopus. Regarding limitations, the search was limited to Scopus, which means that some relevant studies indexed in other databases may not have been included in the analysis.

3. RESULTS AND DISCUSSION

3.1. General description of the primary bibliometric indicators

The present analysis addresses a comprehensive evaluation of Table 1. It proceeds with a breakdown of each of the general indicators and their significance in the context of a bibliometric study on AIS in the Scopus database. Through the representation of primary indicators of sample composition, authors, and types of documents, this analysis provides a solid basis for understanding the trends and dynamics of the field of study.

First, the study spans an extensive 63-year period, from 1961 to 2024, and incorporates both historical and contemporary research. This allows for the analysis of how the field has evolved over time. The broad temporal scope of the analysis is a strength, as it enables the identification of long-term trends, shifts in research approaches, and the emergence of new thematic areas. Conversely, a total of 1,552 different sources were gathered, including journals, books, and various other types of publications, suggesting a broad and representative base of existing literature. The retrieval of

Primary indicators	
Time frame of the study	1961:2024
Total sources (magazines, books, etc.)	1552
Total documents	7247
Annual growth of scientific production %	9.27
Average age of documents	16.2
Average number of citations per document	38.5
Author indicators	
Total authors	12756
Total single authorship	1419
Total number of documents with single authorship	1725
Co-authorship index	2.38
Percentage of international co-authorships	15.16
Types of documents	
Articles	4554
Book chapters	689
Event presentations	1491
Conference reviews	213
Review articles	300

Table 1. General bibliometric indicators of scientific production on AIS in Scopus.

7,247 documents signifies a substantial volume of literature, ensuring that the scientific output is comprehensive and covers a wide array of research.

A relevant indicator is that scientific production in this field has experienced an annual growth rate of 9.27%, suggesting that the research area is both dynamic and expanding. This high growth rate signifies that the topic is significant and continues to attract interest. Furthermore, it is noted that the analyzed papers are, on average, 16.2 years old, implying that a considerable portion of the reviewed literature is not recent. This finding indicates that while the field has a strong historical research foundation, there may also be a need to include more recent studies to reflect current developments.

Regarding citations, it is evident that, on average, each document has been cited 38.5 times, which indicates that the literature analyzed is relevant and has significantly impacted the respective field. Additionally, a total of 12,756 authors have contributed to the documents under review, reflecting a remarkable level of participation by researchers in the

field. However, this finding also indicates a high dispersion in authorship, which may complicate the identification of dominant research leaders or groups. Out of 7,247 papers, 1,725 have a single author, representing only 24%, a figure that underscores the prevalence of collaborative papers. Single authorship is less common in contemporary research, where collaboration occurs more frequently. In this context, a small number of authors publish without collaboration (1,419 out of a total of 12,756 authors). Analyzing the distribution of authors per document reveals a moderate co-authorship rate of 2.38, suggesting a tendency toward collaboration, though not excessively so. This finding illustrates a balanced research dynamic between individual and collaborative efforts. Moreover, it was found that 15.16% of the analyzed papers involve international collaborations. This percentage indicates that while international collaboration is noteworthy, it is not predominant. Furthermore, journal articles are the primary format, although there is also significant contribution from book chapters and conference papers.

3.2. Productivity of authors using Lotka's law

Most authors (12,720) have generated between 1 and 10 papers, which is consistent with Lotka's law. This law predicts that most authors are "occasional contributors" and produce a limited number of papers. This group represents the base of the productivity pyramid. A much smaller group (32 authors) has produced between 11 and 25 papers. These researchers can be considered "active researchers" or "regular contributors," as their higher productivity suggests a more constant participation in the field of study.

Number of documents	Number of authors
1-10	12720
11-25	32
26-30	4

Table 2. Table of author productivity distributio

A small number of authors, specifically four, have produced a substantial quantity of papers, ranging from 26 to 30. These authors are known as "highly productive researchers" or "leaders in the field," and their contributions are significant, establishing them as benchmarks in this area of study. The authors in question are *Lederer AL*, *King WR*, *Grover V*, and *James R. Marsden (Jr.)*. These researchers have achieved an exceptional level of academic output in the field of AIS and, more broadly, in the domain of information systems.

It is important to note that *Albert L. Lederer* is not limited exclusively to AIS research; he has also made significant contributions in the field of information systems management, further broadening his impact on the discipline. *William R. King* centers his research on integrating information systems into business processes, including accounting. *Varun Grover*, in contrast, has studied the application of information systems in business processes, including accounting, which positions him as a key author. Finally, *James R. Marsden (Jr.)* focuses his efforts on the integration of information systems in financial and accounting processes, establishing him as a reference author in the field.

The collective impact of these authors in the field of AIS is reflected through four fundamental axes. First, research on strategic

alignment has enhanced the understanding of how information systems can be aligned with business objectives, including accounting processes. Second, information technology (IT) project management has offered frameworks and methodologies for managing IT projects within accounting and financial contexts. Third, digital transformation has focused on emerging technologies and their application in modernizing accounting information systems. Lastly, decision-making is explored in terms of how information systems can improve decision-making in accounting and financial areas.

3.3. AIS research trends over the last 10 years

A trend graph was created using bibliometrix software, illustrating the keywords with the highest frequency over the past decade (Figure 1) to identify the primary trends in research on AIS. The term "electronic health records" (EHR) is examined in relation to clinical information systems from various perspectives. The perceived usability of EHRs by healthcare professionals in Brazil has been studied, highlighting the importance of user experience for their successful adoption. Furthermore, the potential of blockchain technologies to improve the security and management of EHRs has been investigated, identifying use cases and evaluating the current state of their implementation. Other researchers assess the evolution of hospital competencies to align EHRs with organizational needs, utilizing a dynamic resource-based perspective. In summary, recent studies underscore the importance of EHRs in the digital transformation of AIS, focusing on aspects such as interoperability, data security, and user satisfaction—key elements for optimizing their impact on healthcare.

In the field of AIS research, work related to *deep learning* is emerging as a prominent trend. This significance arises from the technology's ability to process vast amounts of complex data and extract meaningful patterns that can enhance decision-making in healthcare. In the area of AIS, deep learning enables advanced analysis of medical data, including radiological images, EHRs, and genomic data, leading to more accurate diagnoses, disease predictions, and personalized treatments. Moreover, its application in tasks such as natural language

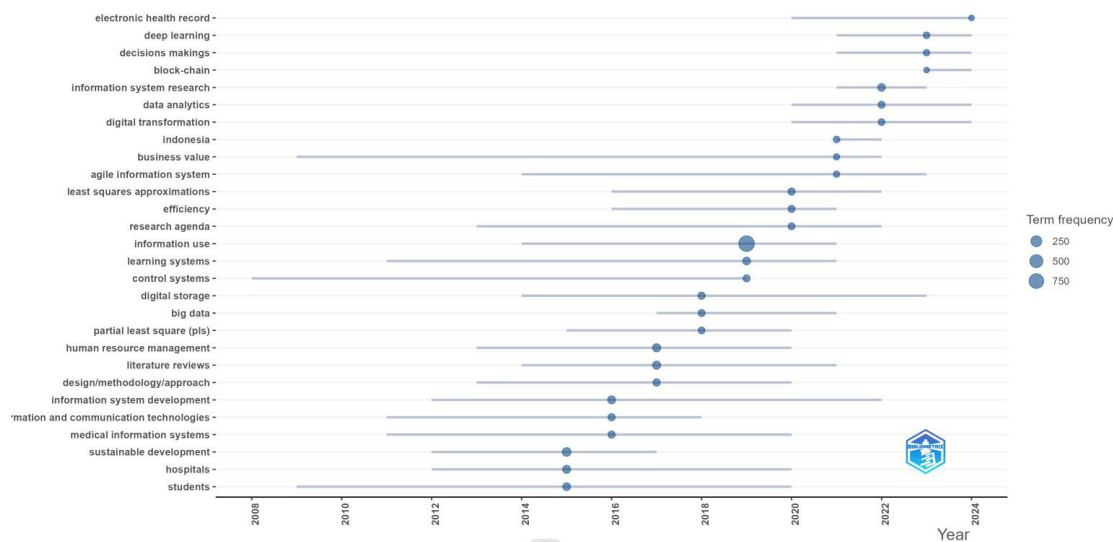


Figure 1. Keywords with the highest frequency in the last ten years.

processing (NLP) enhances the interpretation of clinical notes and fosters interoperability between systems. The growing availability of healthcare data, coupled with advancements in hardware and algorithms, has driven its adoption, establishing it as a critical tool for innovation in AIS and improving healthcare quality.

Related to the above, deep learning is transforming the decision-making process in AIS by offering advanced tools for quickly and accurately analyzing and interpreting complex data. In the realm of healthcare, where speed and certainty in clinical decisions are crucial, deep learning helps manage large amounts of data, such as medical records, diagnostic images, and genomic information, to identify patterns that elude human perception. For instance, this technology can predict disease risk, suggest personalized treatments, or detect anomalies in medical images with high precision. This process not only accelerates clinical decision-making but also minimizes errors and enhances patient care outcomes. Moreover, by integrating with EHRs, deep learning promotes interoperability and access to consolidated information, allowing healthcare professionals to make more informed, data-driven decisions.

In recent years, many studies have highlighted the importance of research in areas such as blockchain, information systems, and data analytics. These fields have become significant due to their potential to transform data management and decision-making across various

sectors, especially in healthcare. In the context of AIS, these topics are interrelated and offer innovative solutions to critical challenges.

Blockchain technology has considerable potential to improve data security, transparency, and interoperability in AIS. Numerous studies have examined its use in EHR systems, highlighting its ability to ensure data integrity and facilitate the secure exchange of information among medical institutions. Moreover, blockchain technology can be employed to trace the origin of data and verify its authenticity, which is crucial in environments where privacy and confidentiality are paramount.

The topic of information systems focuses on understanding how to optimize these systems to support organizational processes and enhance healthcare efficiency. It examines how the strategic alignment of technological resources with organizational competencies can improve the effective use of AIS. This field of research also addresses issues such as the adoption of emerging technologies, system interoperability, and user satisfaction, all of which are crucial for ensuring that information systems achieve their objectives. Lastly, research on data analytics, particularly in deep learning, plays a vital role in extracting knowledge from large volumes of data. In AIS, data analytics enables the identification of patterns, the prediction of diseases, and the personalization of treatments, thereby enhancing clinical decision-making. We demonstrate how machine learning and

semantic mapping can integrate diverse data into systems, facilitating more comprehensive and accurate analysis.

In summary, the topics discussed above demonstrate a convergence of technologies that are reshaping AIS. Blockchain provides security and transparency, while information systems improve the management and adoption of these technologies. Similarly, data analytics empowers users with tools to transform data into actionable insights. This collaboration not only boosts operational efficiency but also encourages innovation in healthcare, resulting in smarter, patient-centered management.

4. CONCLUSIONS

The study provided an overview of the recent literature on AIS, highlighting several bibliometric papers and review studies. Author productivity and publication dynamics were analyzed using Lotka's Law. The distribution of author productivity aligned with Lotka's Law, indicating that scientific output is concentrated among a small group of highly productive authors. This pattern, common across many research fields, illustrates the unequal nature of scientific contributions. Consequently, it is recognized as a critical aspect for enhancing the field of study by identifying and supporting the most productive authors, as well as fostering collaboration among authors with low and medium productivity.

Lederer AL, King WR, Grover V, and Marsden Jr. are influential authors in the field of information systems, and their contributions directly relate to AIS. Through their research, they have established a foundation for understanding how information systems can enhance efficiency, effectiveness, and decision-making in the accounting domain. Their work remains current and is cited in the latest scientific literature, reinforcing their position as leaders in the field of clinical information systems.

The examination of trends in blockchain, information systems, and data analytics research reveals a dynamic and transformative landscape within the field of AIS. These technologies are redefining data management, analysis, and protection in the healthcare sector. Blockchain stands out as a key solution for ensuring the security, transparency, and interoperability of data,

particularly in EHR management. Its capability to guarantee information integrity and facilitate secure exchanges between medical institutions makes it an essential tool for tackling challenges such as data fragmentation and patient privacy. On the other hand, information systems offer both a theoretical and practical framework to optimize the adoption and strategic alignment of AIS, ensuring that these technologies are effectively integrated into organizational processes to enhance operational efficiency.

In healthcare, integrating advanced techniques such as deep learning has sparked a digital transformation in clinical decision-making. This process is characterized by the capacity to analyze large volumes of complex data, enabling more accurate diagnoses and disease predictions. Furthermore, these tools not only facilitate the personalization of treatments but also contribute to the continuous improvement of medical care. The convergence of trends like blockchain technology, information systems research, and data analytics is creating a more robust, secure, and intelligent AI ecosystem. Altogether, these technologies streamline data management while promoting a more patient-centered, efficient, and evidence-based approach to care, paving the way for a comprehensive digital transformation in healthcare.

Conflict of interest

The authors declare that there is no conflict of interest.

Contribution statement

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Data Consent Statement

The data generated during the research can be found in the article. ●

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