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ARTIFICIAL INTELLIGENCE (AI) IN ACCOUNTING EDUCATION: A SCIENTOMETRIC ASSESSMENT

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ABSTRACT

This study conducts a scientometric assessment of research on Artificial Intelligence (AI) in accounting education using data from the Web of Science and Scopus databases. A quanti-qualitative design was applied to 58 articles, analyzed through VOSviewer and Bibliometrix to map publication trends, collaboration networks, keyword structures, and scientometric regularities. Results reveal rapid growth since 2019, thematic consolidation around AI-driven pedagogical innovation, and strong contributions from the United States and China. Lotka's and Bradford's laws indicate author dispersion and journal concentration. The findings highlight emerging research fronts and provide implications for curriculum development, educational policy, and future scholarly inquiry.

Keywords: AI, Artificial Inteligence, Accounting, Scientometrics, Bibliometrics, Scientific production.

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INTRODUCTION

The rapid advancement of Artificial Intelligence (AI) has transformed various domains of knowledge, and accounting education is no exception. As automation, data analytics, and intelligent systems reshape professional practices, accounting programs are increasingly integrating AI-driven tools into teaching, learning, and assessment processes. This technological infusion enhances students' analytical capabilities, fosters adaptive learning environments, and aligns academic curricula with the digital competencies demanded by the contemporary labor market. Moreover, AI offers opportunities to personalize instruction, streamline grading, and simulate complex decision-making scenarios, thereby enriching pedagogical approaches in accounting. Consequently, understanding the evolution and scope of AI-related research within accounting education has become essential for identifying emerging trends, theoretical foundations, and future directions in this evolving academic field.

The integration of AI into accounting education marks a fundamental transformation in pedagogical models and instructional design. As Santos et al. (2024) note, digital technologies demand flexible and adaptive approaches to keep pace with contemporary transformations in teaching and learning processes. AI extends beyond automation, enabling personalized learning through intelligent systems, adaptive feedback, and predictive analytics. These innovations enhance engagement, simulate professional environments, and develop essential digital and analytical skills. Consequently, accounting educators must reconsider how knowledge is structured, delivered, and evaluated. The growing incorporation of AI fosters not only technological proficiency but also critical reflection on the ethical and epistemological challenges associated with its use, ensuring that future professionals are prepared for the complex realities of a data-driven accounting profession.

In the academic sphere, interest in and the presence of AI have intensified, with its applications being widely explored across multiple fields of knowledge, including accounting. Wutzler (2024), for example, presents a pedagogical case designed to integrate large language model (LLM)-based chatbots, such as ChatGPT, Gemini, and Copilot, into accounting education. It guides students through generating, evaluating, and improving AI-written essays about IFRS 15 and the Conceptual Framework, fostering technical accounting knowledge, writing proficiency, computer literacy, and critical thinking. The study's implementation with undergraduate students demonstrated significant learning gains in understanding accounting concepts, chatbot limitations, and writing quality. The paper concludes that structured chatbot use can enhance both domain-specific and transferable skills while preparing students for AI-driven professional environments

Previous studies have also examined the evolution of literature on AI within the accounting field (Elnakeeb & Elawadly, 2025; Kinay & Ciğer, 2025; Melo et al., 2024; Radu et al., 2025; Romero-Carazas et al., 2023; Sallem et al., 2024). Romero-Carazas et al. (2023) analyzed 110 publications retrieved from the Scopus database on the use of AI in accounting education between 2003 and 2023. Similarly, Elnakeeb and Elawadly (2025) investigated the evolution of research on automation and AI in accounting through a bibliometric analysis encompassing 343 Scopus-indexed articles published between 2001 and 2024. Kinay and Ciğer (2025), in turn, investigated 48 Web of Science (WOS)-indexed papers from 2007 to 2024 addressing the integration of AI into accounting education and the profession. Radu et al. (2025) conducted a bibliometric analysis of 1,517 WOS articles (2007-2024) to assess AI's impact on accounting, while Melo et al. (2024) reviewed 71 WOS documents (1989–2024) on AI applications in accounting.

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Despite these studies, we noted that a gap persists concerning the application of scientometric methods that incorporate more than one data sources while maintaining an exclusive focus on accounting education. Moreover, Elnakeeb and Elawadly (2025) observe that there remains a need for more extensive investigations into how the incorporation of AI within accounting education will influence, over the long term, the competencies and skill requirements expected of future accounting professionals. For this reason, a thorough understanding of the accounting education literature is essential, as it enables the identification of prevailing research trends, thematic developments, and areas that have already been extensively explored. Based on this debate, the present study aims *to conduct a scientometric analysis of the use of artificial intelligence (AI) in accounting education, drawing on articles indexed in the Web of Science (WOS) and Scopus databases*.

This study offers both theoretical and practical contributions to the accounting and education literature. Theoretically, it expands the understanding of how AI has been conceptualized, applied, and discussed within accounting education by systematically mapping its scientific evolution across multiple databases. It contributes to the consolidation of a research agenda that identifies emerging themes, intellectual structures, and future directions in the field. Practically, the findings provide valuable insights for educators, policymakers, and curriculum designers seeking to integrate AI technologies into accounting programs. By revealing dominant trends, research gaps, and interdisciplinary connections, the study supports the development of pedagogical strategies and professional training initiatives aligned with the digital transformation of the accounting profession.

LITERATURE REVIEW

AI in Accounting Education

Recent studies, such as those by Eulerich and Wood (2025), have highlighted the growing impact of AI-based technologies on the transformation of accounting practices. These investigations emphasize, for instance, the use of tools like ChatGPT, whose ability to interpret and solve complex problems in a simplified manner has significantly contributed to optimizing routine tasks and enhancing decision-making processes. In parallel, earlier research underscores the role of Robotic Process Automation (RPA) (Vincent et al., 2025; Wiklund & Fallan, 2024), which has become an effective solution for automating operational activities within the accounting domain.

Despite the disruptive potential of these technologies, certain sectors of the accounting profession – most notably external auditing – have shown only limited adoption. Professionals in this area often express uncertainty regarding the reliability of AI tools, indicating a gap between their theoretical capabilities and practical applicability in daily work (Henry et al., 2025). This discrepancy exposes shortcomings in accountants' technical training, particularly in mastering emerging technologies, managing data effectively, and formulating efficient prompts. Such a scenario underscores the pressing need to incorporate digital competencies into accounting curricula to better equip future professionals for the challenges of a technology-driven environment.

In the context of accounting education, the use of AI-based chatbots has emerged as a valuable complementary pedagogical tool (Al Ghatrifi et al., 2023). These technologies enable natural language interactions, providing additional, personalized, and accessible explanations that facilitate students' understanding of complex concepts. It is important to emphasize, however, that the purpose of these tools is not to completely replace human intelligence. In situations that require more refined professional judgment, the performance of systems such as ChatGPT may remain inadequate, making human protagonism essential for critical analysis and sound decision-making.

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In this regard, Wecks et al. (2024) show that students who rely on AI tools to produce essays and written assignments perform worse than those who complete such tasks without automated assistance, even in accounting-specific assessments. These findings highlight the importance of developing professionals with competencies that go beyond technical expertise, emphasizing transversal skills such as communication, critical thinking, and problem-solving. Although AI can be used constructively – for instance, to receive feedback, complete assignments, or explore new content – Wood et al. (2023) argue that accounting education must ensure a holistic learning experience that extends beyond the classroom and fosters comprehensive professional development.

The use of LLMs, such as ChatGPT, in accounting education has attracted growing scholarly attention due to their significant potential for personalized learning. These models foster more dynamic, interactive, and effective pedagogical experiences, enhancing student engagement and facilitating the comprehension of complex accounting concepts. As Sarkar et al. (2021) argue, accounting is a constantly evolving discipline that demands the integration of advanced technologies into the educational process. However, this implementation faces substantial challenges, including resistance to change, insufficient teacher training, and curriculum overload (Sarkar et al., 2021).

The integration of AI into accounting education represents an irreversible and necessary trend in light of the technological transformations shaping the contemporary professional landscape. Although tools such as chatbots and LLMs – for instance, ChatGPT – offer substantial opportunities for personalized learning and teaching optimization, their full adoption continues to face structural barriers, including resistance to innovation, limited faculty training, and outdated academic curricula. In this context, there is an urgent need to redesign educational frameworks to incorporate digital competencies, critical thinking, and interdisciplinary skills, thereby preparing professionals who are more adaptable, ethical, and technically proficient to operate in an ever-evolving accounting environment.

Prior Correlated Literature

Recent research has explored the role of AI in transforming accounting, both from educational and professional perspectives, leading to bibliometric and related studies aimed at mapping AI's development in the accounting field. Romero-Carazas et al. (2023), for example, conducted a bibliometric analysis to explore the body of research on AI in accounting education using data from the Scopus database covering the years 2003 to 2023. Applying thematic and temporal selection criteria, the authors analyzed 110 documents with the support of VOSviewer software, which enabled the mapping of the most influential authors, institutions, journals, and keywords. The findings reveal a significant rise in publications beginning in 2019, with China (n = 38) identified as the most productive country and Ahlia University (n = 4) as the leading institution. The study underscores the consolidation of AI as an emerging and influential theme in accounting education and highlights promising avenues for future research.

Melo et al. (2024) performed a bibliometric analysis of scientific output on AI in accounting using the WOS database with the search terms "artificial intelligence" AND "accounting" in the title, resulting in 71 documents published between 1989 and 2024. Their findings revealed a sharp increase in publications beginning in 2019, with the United States and China leading in citations and publication volume, respectively. The most frequent keywords included artificial intelligence, accounting, machine learning, and blockchain. The study concludes that AI has become a central and transformative theme in accounting, driving research focused on automation, auditing, and data analytics.

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Sallem et al. (2024) sought to examine the application of AI and machine learning (ML) in accounting auditing, exploring how these technologies influence the profession and auditing processes. Employing a qualitative methodology, the study conducted a systematic review of 105 articles from the Scopus database (2020-2023) combined with a critical analysis of relevant works. The results identified emerging trends and practical implications of AI use in auditing. The key findings indicate that AI and ML enhance efficiency, accuracy, and fraud detection, while simultaneously transforming the auditor's role by requiring new skill sets. However, the study also emphasizes ongoing ethical, regulatory, and technical challenges that must be addressed to ensure the safe and effective adoption of these technologies in accounting and auditing contexts.

Additionally, Radu et al. (2025) aimed to examine the transformative impact of AI on accounting through a bibliometric approach. Their analysis encompassed 1,517 articles from the WOS database, published between 2007 and 2024, employing tools such as RStudio and Bibliometrix. The results revealed a marked increase in publications after 2020, with prominent themes including accounting process automation, fraud detection, and integration with blockchain and cloud computing. The United States, China, and the United Kingdom stood out as leaders in both collaborations and citations. The authors conclude that AI is reshaping accounting processes and professional competencies, emphasizing the need for technological innovation, continuous education, and heightened attention to ethics and digital security within the accounting field.

Moreover, Kinay and Ciğer (2025) analyzed 48 publications indexed in the WOS database from 2007 to 2024 to investigate the integration of AI into both the accounting profession and accounting education. Their findings reveal not only the gradual adoption of this technology but also a lack of in-depth, targeted studies addressing its implications. The authors emphasize a marked disparity between the accounting training provided by educational institutions and the technological demands already embraced by the Big Four global auditing firms. The study highlights the urgent need for a strategic and ethical restructuring of accounting education, stressing curriculum modernization in response to emerging technologies, the critical and evidence-based use of AI, and the implementation of robust governance and information security practices as essential foundations for the effective integration of AI in contemporary accounting.

In summary, the reviewed studies collectively demonstrate that AI has become a transformative force within the accounting domain, reshaping both professional practice and educational paradigms. Bibliometric and systematic analyses consistently reveal a sharp increase in scholarly output over the past decade, particularly after 2019, underscoring AI's growing centrality in research related to automation, auditing, fraud detection, and data analytics. The findings highlight the dominance of the United States, China, and the United Kingdom as leading contributors, while also identifying persistent challenges – such as ethical concerns, regulatory constraints, and the need for digital competence. Despite the significant progress achieved, the literature points to an enduring gap between technological advancement and accounting education, reinforcing the call for curricular modernization, interdisciplinary integration, and evidence-based strategies to prepare future professionals for an AI-driven environment.

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RESEARCH METHOD

The present study employed a quantitative-qualitative and descriptive approach aimed at mapping the quantitative dimensions of scientific publications related to the use of AI in accounting education. To achieve this goal, scientometric analysis was adopted as the primary methodological technique, enabling the identification of patterns, trends, and thematic gaps within the field. This methodological choice is justified by scientometrics' ability of quantifying and visualizing the evolution of scientific knowledge based on indexed publications, thus providing a systematic understanding of AI's trajectory in the education and training of accounting professionals. The methodological process was structured into eight interdependent stages, as illustrated in Figure 1, each of which is described in detail in the following section.

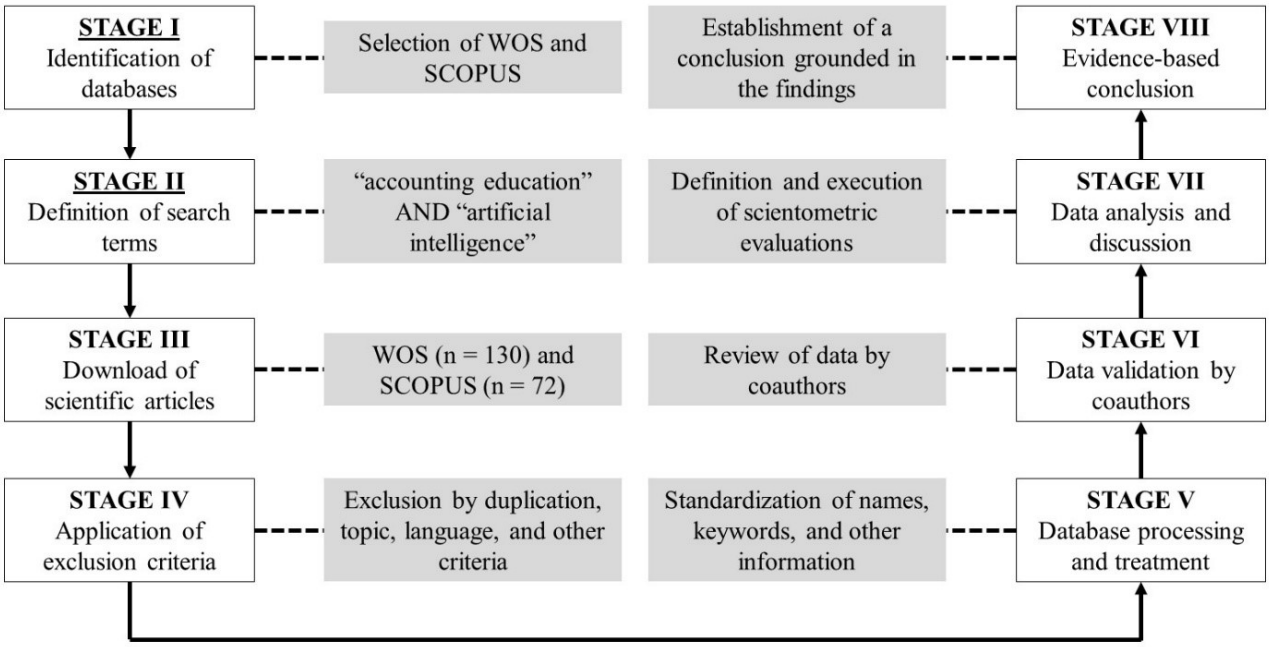


Figure 1. Methodological pathway.
Source: Authors.

In Stage I, the selection of appropriate databases was fundamental to ensure both the quality and comprehensiveness of the scientometric analysis. We identified and selected the WOS and Scopus as the primary data sources, given their global recognition, extensive coverage of peer-reviewed journals, and advanced indexing capabilities across multiple disciplines. Prior research has also utilized them in similar studies (e.g., Kinay & Ciğer, 2025; Melo et al., 2024; Radu et al., 2025; Romero-Carazas et al., 2023; Sallem et al., 2024). These databases were chosen for their reliability in citation tracking and metadata consistency, which are essential for mapping scientific production and collaboration networks. The inclusion of both WOS and Scopus also aimed to mitigate potential database bias, enhancing the representativeness and robustness of the dataset. This stage established the empirical foundation of the research, ensuring that subsequent analyses accurately reflected the international academic output on AI in accounting education.

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In Stage II, we established the search strategy to retrieve relevant publications systematically and consistently from the selected databases. The search terms "accounting education" AND "artificial intelligence" were defined after a preliminary review of the literature to ensure alignment with the study's objectives and scope. The use of the Boolean operator AND restricted results to works that explicitly addressed the intersection between both fields, trying to avoid unrelated or tangential studies. This combination enabled the identification of publications that explored the application, challenges, and implications of AI within accounting education. These search terms are also consistent with prior research (e.g., Melo et al., 2024). This stage was crucial for ensuring search precision, thematic coherence, and reproducibility, forming a reliable basis for the subsequent phases of data collection, cleaning, and scientometric analysis.

In Stage III, the retrieval and organization of the selected publications were carried out according to the predefined search strategy. Using the search terms, we identified and downloaded 130 documents from WOS and 72 from Scopus, totaling 202 initial records. The documents were exported in compatible formats (BibTeX, CSV, and RIS) to ensure proper integration with analytical software such as RStudio and VOSviewer. During this process, metadata fields – including authors, titles, abstracts, keywords, publication years, journal names, and other variables – were preserved to allow comprehensive scientometric exploration. This systematic download procedure ensured data completeness and consistency across databases, forming the core dataset for subsequent stages of filtering, cleaning, and analysis. The outcome of this stage was a consolidated corpus of scientific articles representing the state of research on AI in accounting education.

In Stage IV, we focused on refining the dataset to ensure the accuracy, relevance, and quality of the analyzed publications. The exclusion process was carried out through the R statistical software, which facilitated the automated detection and removal of duplicate records (n = 31) arising from the overlap between the WOS and Scopus databases. Beyond duplication, additional exclusion criteria were applied using MS Excel, including irrelevance of theme (n = 44), language limitations (non-English documents) (n = 3), and non-academic articles such as conference abstracts, book reviews, or editorial materials (n = 66). Following the exclusion procedures, the final dataset comprised 58 documents. This number is consistent with prior correlated research (e.g., Kinay & Ciğer, 2025; Melo et al., 2024). Moreover, for bibliometric and related studies, the minimum recommended sample size is 50 observations (Rogers et al., 2020). Each publication was reviewed to verify its alignment with the research scope (AI in accounting education). This systematic filtering process eliminated inconsistencies and reduced noise in the data, resulting in a clean, homogeneous, and thematically coherent dataset. Consequently, this stage ensured that only peer-reviewed, thematically pertinent, and methodologically reliable studies advanced to the subsequent stages of standardization and scientometric analysis.

Stage V focused on the standardization and normalization of the bibliographic dataset, a crucial step to ensure analytical accuracy and interoperability across the selected databases. After data cleaning, all remaining records were processed to unify author names, institutional affiliations, journal titles, and keywords, which often appear in multiple variations. This harmonization was performed using MS Excel, complemented by manual validation for ambiguous cases. Keywords were also standardized to consolidate synonymous terms (e.g., "AI" and "artificial intelligence") and enhance the coherence of co-occurrence network analyses. In addition, metadata were reformatted to maintain consistency between WOS and Scopus entries, avoiding duplications and missing values. This process produced a clean, unified, and structured database, ready for scientometric mapping and visualization in subsequent stages, ensuring methodological rigor and reliability in pattern identification.

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In Stage VI, the dataset underwent a validation process conducted collaboratively by all coauthors, ensuring methodological transparency, accuracy, and reliability of the information to be analyzed. The first three coauthors independently reviewed subsets of the data to verify thematic consistency, metadata integrity, and the correct application of inclusion and exclusion criteria established in previous stages. Discrepancies – such as misclassified documents, missing information, or inconsistencies in author and keyword standardization – were reviewed by the fourth coauthor. This peer validation served as an essential quality control mechanism, guaranteeing that the final database accurately represented the scientific production on AI in accounting education. Beyond technical verification, this stage reinforced the study's collaborative rigor, enhancing credibility, reproducibility, and alignment between the empirical data and the research objectives that guided the scientometric analysis.

In Stage VII, the refined and validated dataset was subjected to a comprehensive scientometric analysis, integrating both quantitative indicators and qualitative interpretations. Using tools – such as RStudio (Bibliometrix/Biblioshiny) (Aria & Cuccurullo, 2017) and VOSviewer –, we examined scientometric patterns, including publication trends over time, most productive authors, journals, and institutions, and co-authorship networks. In parallel, keyword co-occurrence analysis and thematic mapping were performed to identify emerging research fronts, conceptual clusters, and intellectual structures within the field of AI in accounting education. The results were interpreted in light of the theoretical and professional developments in accounting, allowing for a critical discussion that connected scientometric evidence to pedagogical implications and technological transformations. This stage thus served as the analytical core of the study, transforming raw bibliometric data into meaningful insights that guided the interpretation of trends, gaps, and future research opportunities.

Finally, in Stage VIII, we synthesized the main findings of the scientometric analysis to formulate evidence-based conclusions regarding the evolution, scope, and future directions of research on AI in accounting education. The results from the previous stages were integrated to highlight dominant themes, collaboration networks, and temporal publication trends, providing a consolidated overview of how AI has been studied and applied in educational contexts. Based on these findings, we proposed strategic recommendations for researchers, educators, and policymakers to strengthen the connection between academic inquiry and professional practice. Ultimately, this stage anchored the investigation in empirical evidence, reinforcing its theoretical, methodological, and practical contributions to the field of accounting education.

RESULTS

Descriptive Results

The descriptive indicators provide an overview of the scientometric profile of research on AI in accounting education over a 30-year period (1995-2025). Our analysis identified 58 documents published across 38 different sources, with an annual growth rate of 7.98%, reflecting a steady and expanding academic interest in the topic. A total of 520 authors contributed to this literature, with an average of 9.36 co-authors per publication, suggesting a strong tendency toward collaborative research. However, only 13.79% of these collaborations occurred at the international level, indicating that global cooperation remains limited. Regarding content, the dataset included 243 distinct author keywords, demonstrating conceptual diversity and thematic richness. The average document age of 3.29 years indicates that the field is relatively recent.

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Figure 2 (Annual Scientific Production) illustrates the annual scientific production on AI in accounting education from 1995 to 2025, revealing a clear temporal evolution of research interest in the field. Between 1995 and 2017, publication activity remained minimal and sporadic, indicating that the topic had not yet gained significant academic attention. A noticeable shift occurs from 2018 onward, marking the onset of a steady upward trajectory. This acceleration becomes particularly evident after 2020, coinciding with the widespread adoption of AI technologies – especially ML and LLMs – in educational and professional contexts.

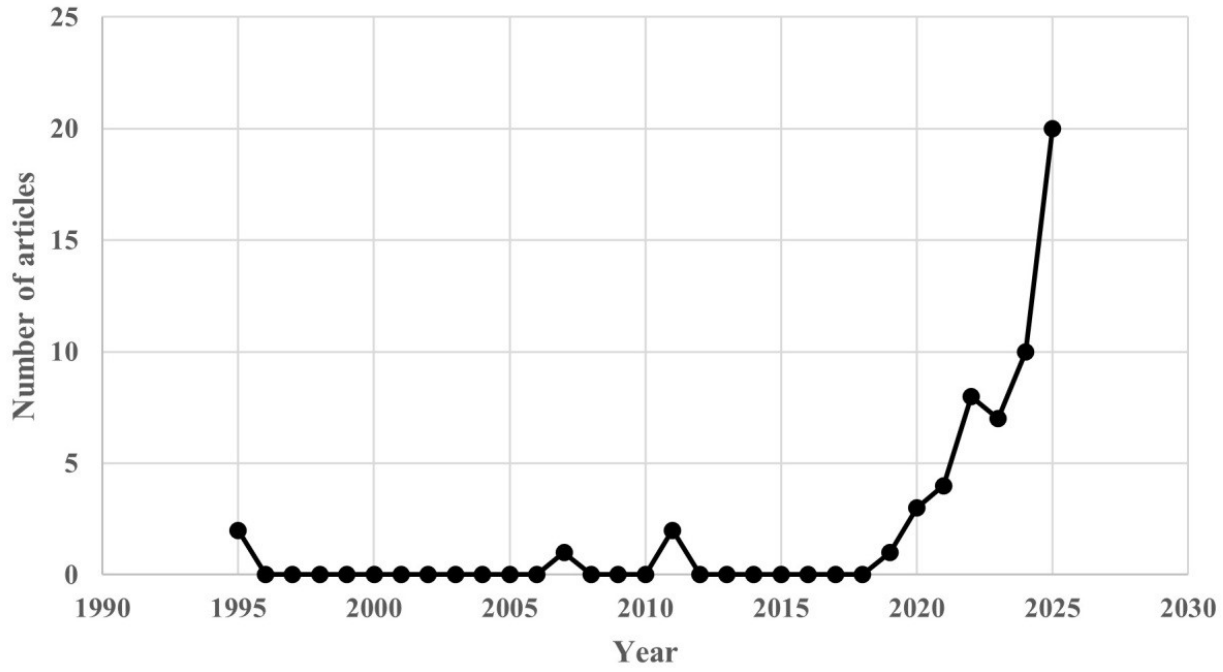


Figure 2. Annual Scientific Production.
Source: Authors.

A notable upward trend begins around 2019, coinciding with the expansion of machine learning applications, the popularization of data analytics in business education, and the emergence of generative AI tools. From that point onward, production grows consistently, reaching its peak in 2025, with 20 publications. This sharp increase reflects a paradigm shift in both academic and professional spheres, where AI is no longer perceived merely as a technological support but as a central element of pedagogical innovation and professional training in accounting. Figure 2, therefore, underscores an accelerating and ongoing research momentum, marking the consolidation of this topic as a mature and expanding field of inquiry.

Figure 3 (Average Citations per Year) depicts the average citations per year for publications addressing AI in accounting education between 1995 and 2025, revealing distinct phases in the topic's academic impact. From 1995 to approximately 2017, citation levels remained very low, reflecting the marginal presence of the topic in academic discourse. A modest increase appears around 2011, yet it remains isolated and insufficient to indicate a consistent trend. A sharp and significant rise occurs in 2020, reaching a citation peak of over 10 citations per year, coinciding with the global acceleration of AI adoption and the onset of the COVID-19 pandemic, which stimulated digital transformation and research on AI-based learning tools.

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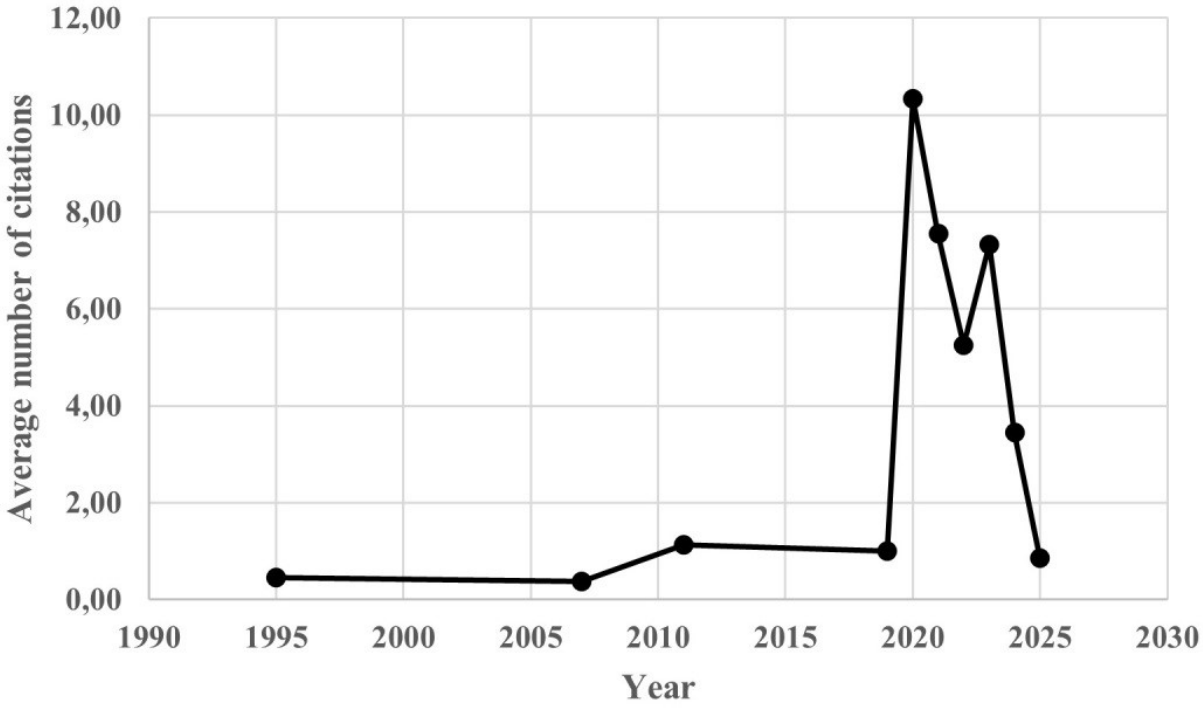


Figure 3. Average Citations per Year.
Source: Authors.

After this peak, citation rates decline moderately from 2021 to 2024, stabilizing at intermediate levels, which suggests a maturation of the field. The apparent drop in 2025 should be interpreted cautiously, as the year is still ongoing – meaning that many newly published articles have not yet had sufficient time to accumulate citations. This pattern is typical in scientometric analyses, where newer works exhibit lower citation counts due to the inherent delay in academic referencing cycles. Overall, Figure 3 highlights the recent consolidation and growing influence of AI-related research in accounting education, with its intellectual visibility reaching unprecedented levels in the early 2020s.

Scientometric Results

Figure 4 illustrates the application of Bradford's Law of scattering, which is used to determine the journals that produce the highest concentration of publications related to AI in accounting education. Bradford's Law posits that a small number of journals tend to concentrate the majority of publications within a specific research area, while the remaining studies are dispersed among a broader set of peripheral journals. The x-axis (Source log(rank)) orders outlets by productivity; the y-axis reports article counts.

In this analysis, the core zone (highlighted in gray) encompasses the journals with the highest concentration of articles, including Accounting Education, Issues in Accounting Education, Journal of Emerging Technologies in Accounting, and Advances in Accounting Education – which together deliver the steepest cumulative output (peaking near 6 articles for the lead title and tapering to ~2 across the fourth). Beyond this nucleus, productivity drops to ~1 article per source, evidencing a long tail typical of Bradford distributions.

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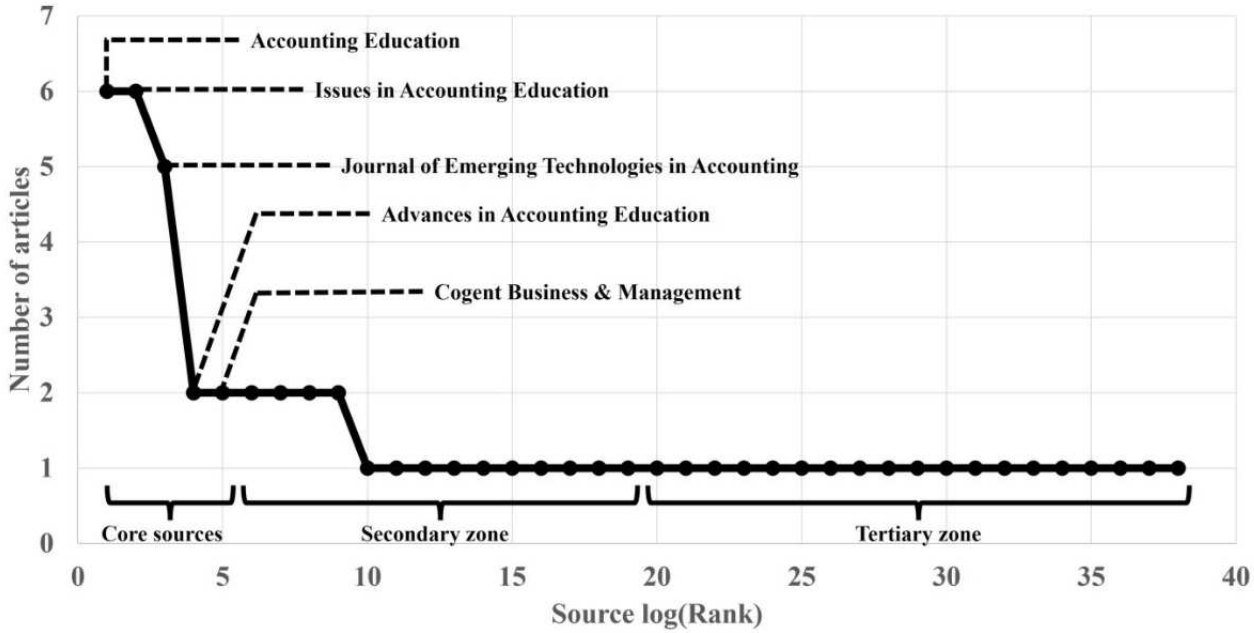


Figure 4. Core sources by Bradford's Law.
Source: Authors.

Analytically, the configuration indicates (i) a discipline-anchored nucleus (education-focused accounting journals) supplemented by a technology-oriented gateway (emerging technologies in accounting), and (ii) high venue concentration, implying editorial agendas in these journals currently shape the field's research agenda and citation ecology. For scholars, the core suggests priority venues for diffusion and debate; for editors and policymakers, it signals where guidelines, special issues, and replication standards could yield maximal field-level impact. Methodologically, we note that Bradford zoning is sample- and window-dependent (here, 58 documents from WOS/Scopus), so core membership may shift with expanded timeframes, alternative databases, or subtopic filters (e.g., assessment, LLMs, RPA).

Figure 5 applies Lotka's Law of scientific productivity to the field of AI in accounting education, illustrating the relationship between the number of publications and the proportion of authors producing them. In essence, a small proportion of researchers contribute most of the scientific output in a field, while the majority publish only one or very few papers. The x-axis represents the number of documents written, while the y-axis shows the percentage of authors responsible for each output level. The solid line represents the observed data distribution, and the dashed line depicts the theoretical Lotka curve, which predicts an inverse-square relationship – where a small proportion of authors contributes a large share of publications.

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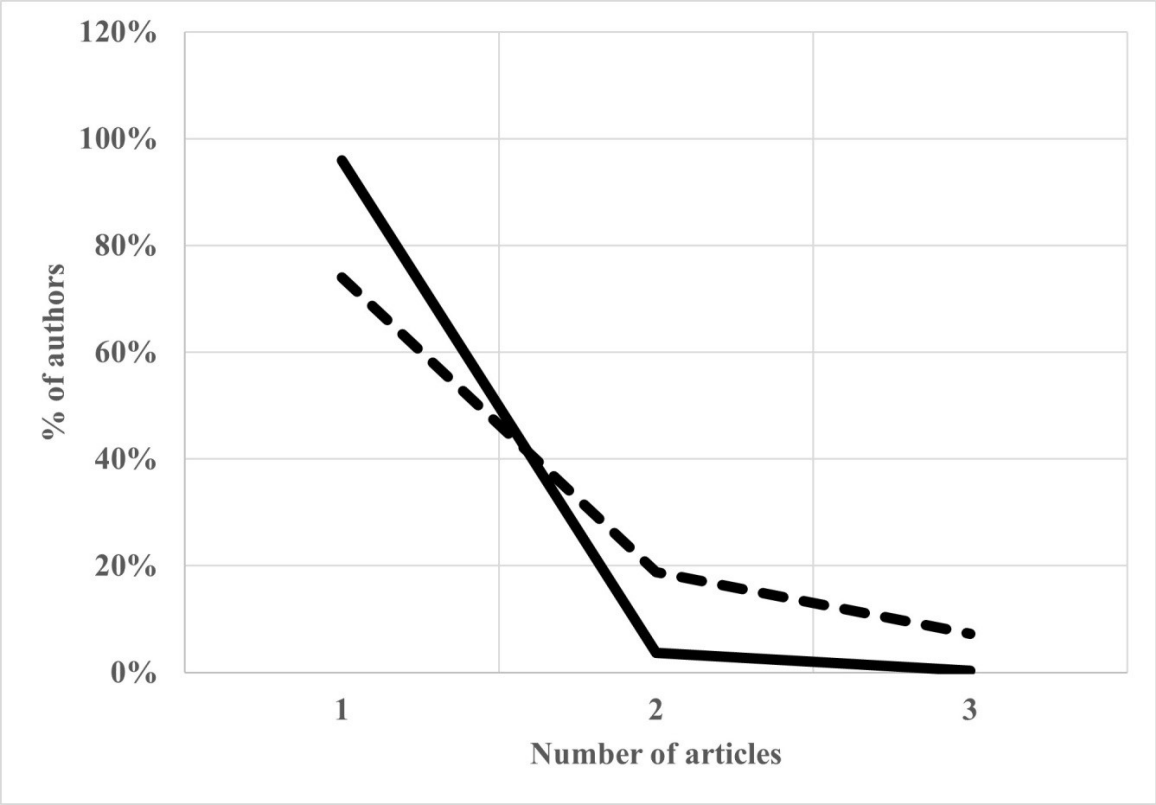


Figure 5. Author productivity through Lotka's Law.
Source: Authors.

Figure 5 confirms a highly skewed productivity pattern: nearly all authors (around 90-95%) produced only one paper, while a very small fraction authored two or more. This asymmetry is characteristic of emerging research domains, where contributions are distributed across a wide but dispersed author base, often reflecting exploratory, interdisciplinary participation rather than consolidated research groups.

The deviation between the empirical and theoretical curves suggests that the field is still in a developmental stage, lacking a stable core of prolific scholars who consistently publish on the topic. Such dispersion indicates ongoing entry of new researchers, consistent with the recent surge of interest in AI integration within accounting education, as evidenced by the sharp publication growth observed after 2019 (see Figure 2). In summary, the pattern reflects a typical signature of an emergent and interdisciplinary research area, in which new scholars are continuously entering the field, but long-term productivity and specialization are still limited. As the topic of AI in accounting education matures, the proportion of recurring authors and research collaborations is expected to increase, indicating progressive knowledge stabilization and community formation.

Figure 6 shows the geographical distribution of scientific production on AI in accounting education, highlighting the countries that have contributed most to the topic's development. The intensity of blue shading represents the relative research output, where darker tones indicate higher productivity.

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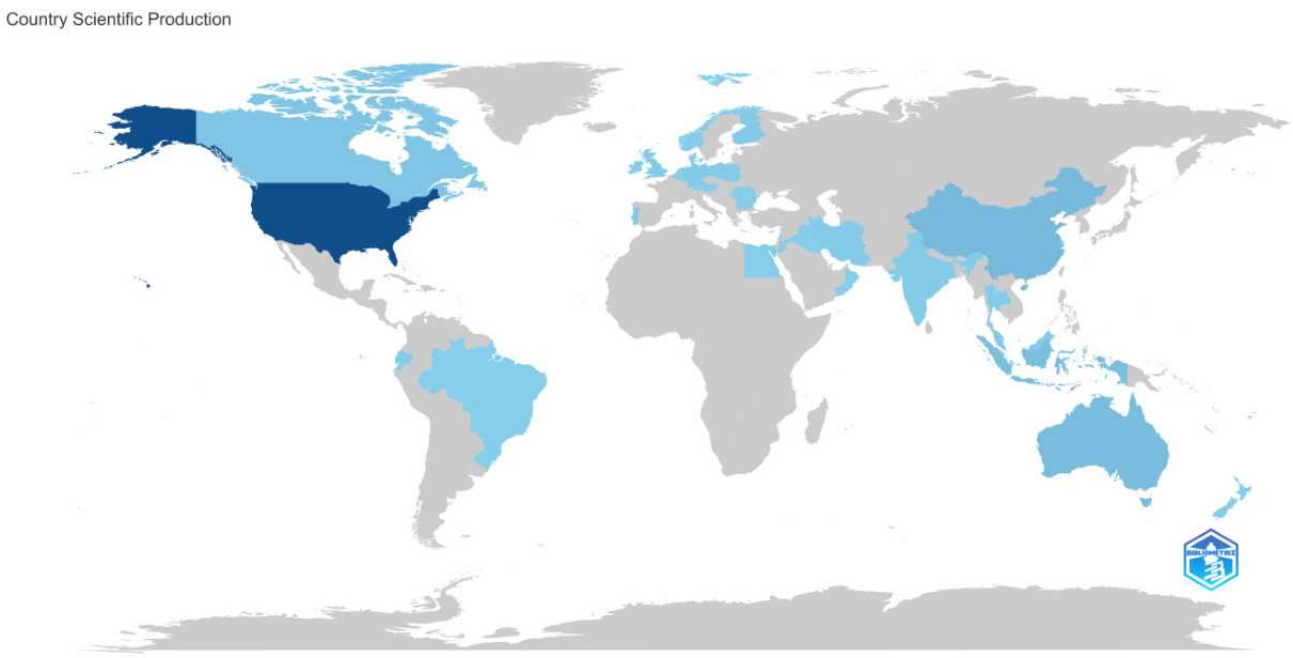


Figure 6. Scientific production by country.
Source: Authors.

The United States (U.S.) clearly dominates the map, emerging as the leading producer of research in this domain. This leadership aligns with the country's historical prominence in accounting scholarship and its early adoption of AI technologies in both professional and educational contexts. Following the U.S., China, the United Kingdom, Australia, and Indonesia stand out as secondary hubs of production, reflecting their strong technological ecosystems and advanced integration of digital transformation initiatives into higher education. Other countries, such as Canada, Brazil, India, Germany, Malaysia, and Indonesia, show moderate participation, demonstrating the growing internationalization of the topic. The inclusion of nations from Asia, Europe, Oceania, and Latin America reveals a broadening global engagement, albeit with varying degrees of intensity.

This geographical pattern underscores a North-South disparity in research output: most studies originate from developed economies with consolidated research infrastructures and access to funding for technological innovation. Nevertheless, the gradual emergence of contributions from developing countries suggests a trend toward global diffusion and diversification of scholarly interest in AI applications within accounting education. Overall, the map highlights that while the field remains concentrated in traditional academic powerhouses, it is progressively expanding toward a more inclusive and globally interconnected research landscape.

Figure 7 represents a co-authorship network generated through VOSviewer, illustrating collaborative relationships among authors who have published on AI in accounting education. Each node corresponds to an individual author, while the edges (links) connecting them indicate co-authored publications. The size of each node reflects the author's publication volume or citation influence, and the color clusters represent groups of authors who frequently collaborate – that is, distinct research communities or thematic clusters within the field.

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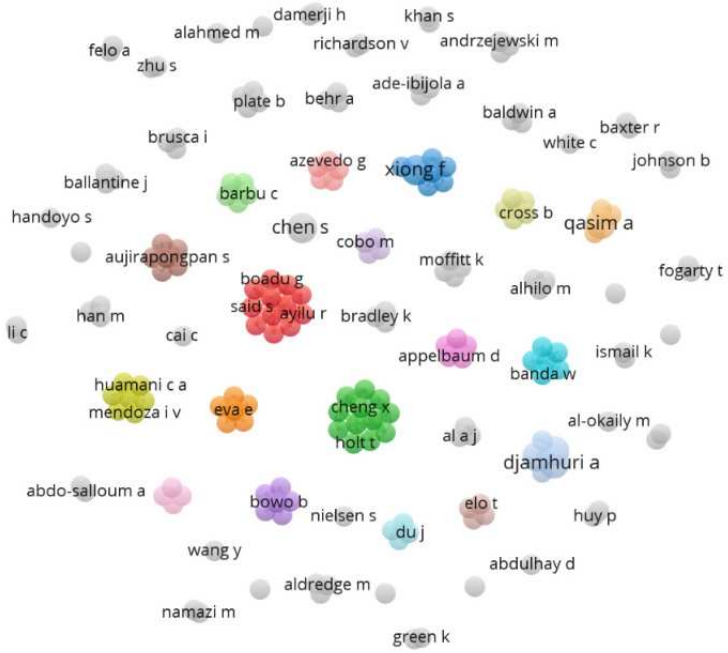


Figure 7. Authorship network.
Source: Authors.

Figure 7 reveals a fragmented co-authorship structure with several small, color-coded clusters and many peripheral, weakly connected nodes (in gray). Because the inclusion threshold is one publication, the network captures a broad set of occasional contributors, which inflates sparsity and highlights the field's early-stage consolidation. Several central nodes, such as boadu g, cheng x, xiong f, and qasim a, appear as major hubs, indicating their pivotal role in advancing research on AI in accounting education. These authors likely lead or participate in recurring collaborative projects that shape the field's intellectual structure. Smaller clusters, such as those around eva e, djamhuri a, and bowo b, suggest emerging research groups with regional or institutional focus, contributing to the topic's diversification.

The spatial distribution also reveals limited interconnectivity between clusters, implying that most collaborations remain localized rather than globalized. In other words, while several active groups are exploring AI's role in accounting education, their interactions across different academic or geographical boundaries remain relatively weak. Overall, the visualization highlights a fragmented but expanding research landscape, where collaboration networks are forming around a few key scholars. This pattern is typical of an emerging interdisciplinary field, signaling opportunities for greater international cooperation and theoretical consolidation in future research on AI-driven transformations in accounting education.

Figure 8 presents a keyword co-occurrence network generated through VOSviewer, visualizing the intellectual and thematic structure of research on AI in accounting education. Each node represents a keyword extracted from the analyzed publications, while the links indicate co-occurrences between keywords within the same document. The size of each node reflects its frequency of appearance, and the color clusters denote distinct thematic groups or subfields within the research domain. Additionally, only keywords with a minimum of two occurrences (41 keywords) were included in the visualization, ensuring that the network reflects terms with substantive thematic relevance and repeated presence in the literature.

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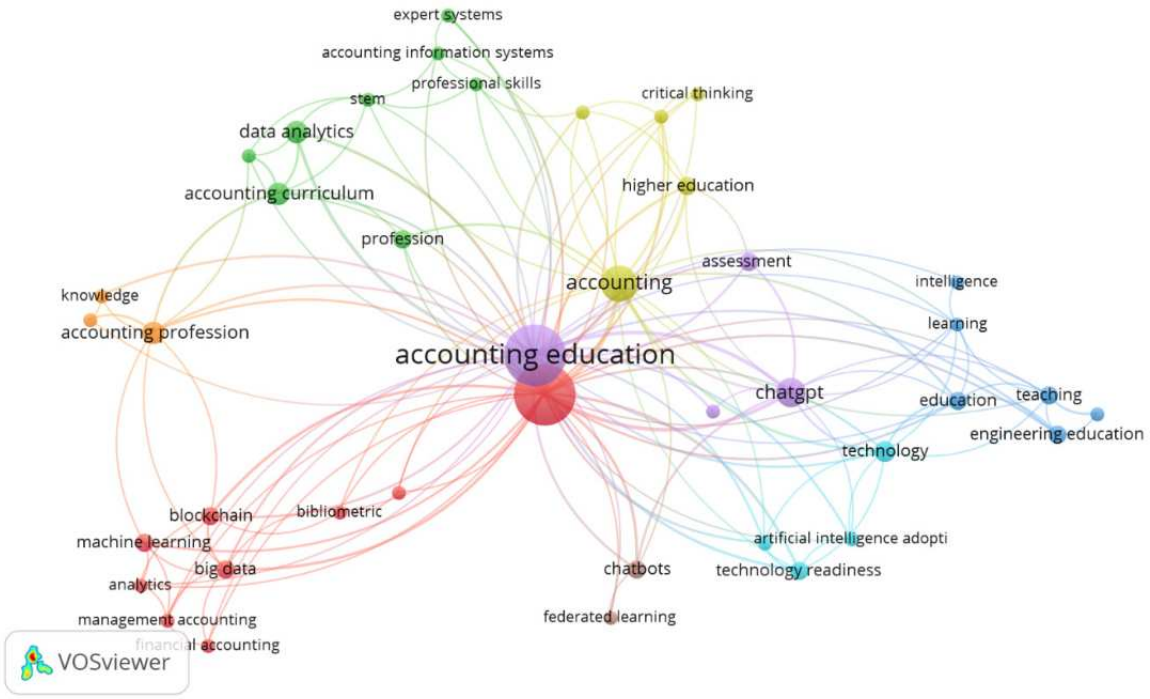


Figure 8. Keyword co-occurrence network.
Source: Authors.

At the center of the network, "accounting education" emerges as the dominant term and conceptual hub, indicating that this phrase anchors most discussions within the field. Closely linked terms such as "accounting," "accounting profession," "data analytics," and "accounting curriculum" form one of the primary clusters (green and yellow tones), emphasizing pedagogical adaptation, curriculum design, and the development of digital and analytical competencies in future accountants.

A second major cluster (in red) revolves around technological integration and methodological innovation, featuring terms such as "machine learning," "big data," "blockchain," "bibliometric," and "management accounting." This cluster reflects a growing concern with how data-driven technologies are reshaping accounting education and research practices. Another key thematic area (in blue and turquoise) focuses on AI applications in teaching and learning, connecting keywords such as "chatGPT," "chatbots," "technology readiness," "artificial intelligence adoption," and "engineering education." This cluster highlights the pedagogical dimension of AI—its use as a learning tool, assessment support, and enabler of personalized education.

Peripheral clusters (in yellow and purple) emphasize competency development, linking concepts such as "critical thinking," "higher education," "assessment," and "professional skills." These terms illustrate how AI not only transforms teaching methods but also redefines the skill sets required in accounting training. Overall, the visualization reveals an interconnected yet diversified research landscape, in which AI is positioned as both a technological driver and pedagogical catalyst for accounting education. Figure 8 underscores a shift from traditional teaching models toward data-informed, adaptive, and technology-integrated educational paradigms.

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Discussion with Prior Research

The results obtained in this scientometric study reveal that the research field on AI in accounting education has undergone a rapid process of expansion and consolidation, reflecting the growing global engagement with technological transformation in higher education and the accounting profession. Over the past decade, AI has moved from a peripheral subject to a central research theme, influencing pedagogical approaches, curricular structures, and professional competencies. This trend is consistent with prior literature indicating a paradigm shift in accounting education, where automation, data analytics, and ML are redefining both the content and methods of teaching. The increasing scholarly output, particularly after 2019, parallels broader technological and social phenomena—such as the diffusion of LLMs and post-pandemic digital acceleration – confirming that AI is now integral to discussions on the future of accounting education, research, and practice.

The findings of this study align with and expand upon those reported by Kinay and Ciğer (2025) and Radu et al. (2025), while also revealing key distinctions in focus and methodological scope. Kinay and Ciğer (2025) conducted a bibliometric and content analysis of 48 WOS-indexed publications (2007-2024), emphasizing the gradual yet uneven integration of AI into accounting education and professional practice. Their results underscore a notable gap between academic training and the technological competencies already adopted by major auditing firms, particularly the Big Four. Radu et al. (2025), in turn, through an extensive analysis of 1,517 WOS articles, captured the transformative and global dimension of AI in accounting, highlighting post-2020 surges in research focused on automation, fraud detection, and blockchain integration.

Comparatively, the present study complements these findings by narrowing the analytical lens to AI in accounting education, offering a multidatabase perspective (WOS and Scopus) and unveiling how research production has evolved pedagogically rather than strictly professionally. The evidence suggests that while Radu et al. (2025) frame AI as a macro-transformative force for accounting as a discipline, and Kinay and Ciğer (2025) expose institutional lags in educational adaptation, the current results position education as the critical bridge through which technological, ethical, and analytical competencies can converge, preparing future professionals to thrive in increasingly automated and data-driven environments.

The keyword analysis reinforces the pedagogical centrality of AI-driven competencies in accounting education, substantiating the claim that education functions as the conceptual bridge between technological adoption and professional transformation. The dominant node – "accounting education" – anchors the field, linking to expressions such as "data analytics," "accounting curriculum," and "accounting profession." These connections emphasize curriculum redesign and the integration of analytical competencies into accounting training.

The secondary clusters, incorporating terms like "machine learning," "big data," "blockchain," and "chatGPT", mirror the technological frontier observed in broader bibliometric mappings. Romero-Carazas et al. (2023) found similar clusters where "artificial intelligence" (n = 89), "education" (n = 63), and "students" (n = 45) emerged as the most recurrent keyword domains. Radu et al. (2025) also reported "artificial intelligence" (n = 135) and "accounting" (n = 85) as core terms, accompanied by "research education" (n = 51), "big data" (n = 50), and "machine learning" (n = 48). Together, these patterns reveal a pedagogical-technological convergence, where the language of accounting education increasingly incorporates the lexicon of data science and digital transformation – supporting the discipline's ongoing evolution toward hybridized, AI-integrated learning environments.

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Complementarily, our findings both converge with and diverge from prior research (Elnakeeb & Elawadly, 2025; Melo et al., 2024; Sallem et al., 2024), revealing nuanced perspectives on how AI is reshaping accounting scholarship and practice. Consistent with Melo et al. (2024), who analyzed 71 WOS-indexed publications (1989–2024) and identified a sharp increase in AI-related research after 2019, the present results confirm a post-2019 acceleration in academic output – especially in 2025, the most productive year. Both studies highlight the U.S. and China as dominant contributors and identify "artificial intelligence," "accounting," "machine learning," and "blockchain" as recurrent keywords, demonstrating a shared thematic core grounded in technological innovation and data analytics. However, while Melo et al. (2024) approach AI broadly across accounting domains, the current study narrows its scope to educational dimensions, emphasizing the pedagogical implications of AI and its integration into accounting curricula.

CONCLUDING REMARKS

This study aimed to map and analyze the intellectual and structural evolution of AI in accounting education through a scientometric approach, offering a quantitative and visual overview of how this research domain has developed over time. To achieve this objective, a quanti-qualitative and descriptive design was adopted, supported by scientometric techniques capable of quantifying and visualizing patterns in academic production. Data were retrieved from two major international databases – WOS and Scopus – to ensure comprehensive coverage. The final dataset comprised 58 scientific articles, which were systematically processed and analyzed using specialized software packages (VOSviewer and Bibliometrix), enabling the examination of publication trends, co-authorship networks, keyword co-occurrence, and bibliometric regularities in accordance with Lotka's and Bradford's laws.

The conclusive analysis of this scientometric study demonstrates that research on AI in accounting education is not only expanding in volume but also becoming increasingly structured and globally distributed. From a keyword perspective, the dominance of terms such as "accounting education," "artificial intelligence," "machine learning," and "data analytics" indicates a clear thematic consolidation around the intersection of technological competence and pedagogical innovation. This lexical convergence confirms that AI is progressively shaping the conceptual foundations of accounting education, guiding curricular reform and the development of data-driven learning environments.

Lotka's Law analysis reveals that the productivity of authors in this field follows the expected inverse square distribution – where a small group of highly productive researchers accounts for a disproportionate share of total publications. This pattern highlights the formation of specialized research nuclei and suggests opportunities for broader collaboration to enhance inclusivity and interdisciplinarity. Meanwhile, Bradford's Law of scattering supports a high concentration of articles within a few core journals dedicated to accounting and technology, while a long tail of peripheral journals contributes sporadically. This reinforces the notion that the field, though maturing, remains concentrated within limited publication outlets, pointing to the need for diversified dissemination channels to reach multidisciplinary audiences.

In terms of geographical distribution, the results reaffirm the leadership of the United States and China, both in publication output and international collaboration, consistent with prior bibliometric mappings. Such prominence reflects these countries' early institutional adoption of AI in higher education and accounting research, as well as their centrality in the global academic network. Emerging contributors from Europe and Latin America, though smaller in volume, indicate growing diversification and international diffusion of the topic.

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Our findings carry important implications for educators, policymakers, and curriculum designers. For educators, the dominance of terms such as "machine learning" and "data analytics" shows the need to integrate AI-based tools, data-driven activities, and critical thinking development into classroom practices. Policymakers should note the leadership of the United States and China, recognizing the importance of promoting digital readiness, supporting AI-related research, and reducing technological disparities across regions and institutions. For curriculum designers, the concentration of publications in a small set of core journals indicates a maturing but still limited field, reinforcing the need to embed AI literacy, data analytics, and technological ethics systematically into accounting programs through interdisciplinary collaboration and continuous curricular modernization.

Future research should broaden and deepen the study of AI in accounting education by addressing several promising avenues. Qualitative and experimental designs are needed to understand how students and instructors actually use AI tools – such as LLMs and automated assessment systems – and how these technologies affect learning, reasoning, and ethical judgment. Comparative international studies could reveal differences in technological adoption across educational systems, extending the current U.S.-China dominance. Longitudinal research is also essential to capture how AI-driven changes influence professional competencies over time. Finally, future scientometric work should incorporate additional databases, alternative visualization methods, and mixed-method approaches to strengthen theoretical development and promote more interdisciplinary dialogue within the field.

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