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Revisiting the last four decades of discussion on artificial intelligence in accounting literature: Assessing past and guiding for future research

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ABSTRACT

This study explores the collection of research articles on AI in an accounting context, particularly on publications covering business, management, and accounting. We analyzed nearly 40 years of research history, attempting to identify relevant publications from the earliest to most recent in the data retrieved from the database and reviewed in this study. A systematic literature review is conducted to analyze 78 selected articles retrieved from the Scopus Database over the last four decades. Content analysis is applied to identify prospective future research avenues. The findings show a significant growth of articles in the last decade (2011 and after). This fact confirms that AI is becoming one of the main spotlights in accounting research. The results reveal that the current discussion of AI in the accounting literature is dominated by studies around the AI approach, with much conversation on auditing and financial accounting topics about AI technology. We suggest that future accounting studies be conducted more at the AI task and application levels. This study also marked topics in the accounting fields rarely discussed about AI, including public sector accounting and accounting education. This study clusters the literature into the accounting domains (auditing, finance, managerial, tax, and accounting information systems) and the AI technology domains (approach, tasks, and applications).

Introduction

Artificial intelligence (AI) defined as an advanced, adaptable algorithm technology enabling computers to mimic human cognition and task performance (Haenlein & Kaplan, 2021; Kommunuri, 2022). In business and accounting, AI gains positive acceptance by enhancing performance and minimizing human errors through automated tasks, advanced data analysis, better forecasting, virtual assistance, improved risk management, reduced costs, and streamlined, higher-quality audits (Ackerman, 2023; Fedyk et al., 2022; Holmes & Douglass, 2022). However, AI adoption significantly alters accounting structures, processes, and professional job profiles (Leitner-Hanetseder et al., 2021). Although large-scale adoption of AI is not yet fully embedded, substantial change is imminent (Bakarich & O'Brien, 2021).

This paper explores AI-related business, management, and accounting publications spanning nearly 40 years within the Scopus Database. AI technology has been raised in academic accounting debates, with researchers employing bibliometric, content, citation, topic, and descriptive analyses to review the literature (Agustí & Orta-Pérez, 2023; Atayah & Alshater, 2021; Han et al., 2023; Loureiro et al., 2021; Mancini et al., 2021; Muehlmann et al., 2015). However, continued literature reviews remain vital to offer distinct interpretations to guide future research directions in a different viewpoints.

Seeking to enhance accounting and data science research, we enrich literature reviews by integrating a comprehensive quantitative investigation with content analysis to classify trends across two main categories: the accounting domains (audit, finance, managerial, tax, and accounting information systems) adapted from Muehlmann et al. (2015), and the AI technology domains (approaches, tasks, and applications) derived from Armstrong and Lee (2021). Combining the both perspectives is essential to determine the current developmental intersection of AI levels and accounting areas.

We also contribute by proposing future research agendas for two areas: accounting education and public accounting (Baldwin-Morgan, 1995; Bracci, 2023; Goldwater & Fogarty, 2007; Johnson et al., 2009; Phillips & Johnson, 2011; White, 1995). These domains were not included in the traditional accounting sectors studied by

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Muehlmann et al. (2015). Driven by Industry 4.0, accounting education is changing its curriculum to focus on technology and automation (Damerji & Salimi, 2021; De Villiers, 2021). Therefore, we suggest reviewing institutional aspects of university readiness and AI learning ethics. Additionally, we explore public accounting to highlight the opportunities and challenges of AI adoption in digitalizing public services.

This literature review has two agendas. a quantitative analysis of articles based on topics, settings, theories, methods, and techniques, and a qualitative content analysis exploring future research opportunities at the AI-accounting domains. Thus, our study addresses the following research questions:

RQ1. What are the trends of AI-related themes in the existing accounting literature?

RQ2. What are the AI-related themes in the accounting literature that have not been extensively discussed and can be recommended as a basis for future research avenues?

Different research stresses unique contexts. Han et al. (2023) studied articles in the Scopus database to identify four AI themes in auditing and recordkeeping. Nielsen (2022) used EBSCO, ScienceDirect, and ABI Inform databases to identify how machine learning integrated into management accounting studies. Meanwhile, Agustí and Orta-Pérez (2023) applied bibliometric analysis to Web of Science articles to map AI trends in auditing and accounting. Furthermore, we observed relevant prior literature review articles (Table 1) across keywords, years, databases, methods, and theme classifications.

Previous reviews often look AI and accounting in a fragmented manner.They either focus strictly on accounting perspectives and view AI purely as a technology domain (Han et al., 2023; Loureiro et al., 2021; Muehlmann et al., 2015), or treat accounting as a secondary application within broader technology clusters such as big data and blockchain (Atayah & Alshater, 2021; Mancini et al., 2021; Sherif & Mohsin, 2021). Existing reviews combining both domains are limited to specific functions like management accounting (Moll & Yigitbasioglu, 2019; Nielsen, 2022) or tax and auditing (Agustí & Orta-Pérez, 2023; Atayah & Alshater, 2021; Han et al., 2023; Moll & Yigitbasioglu, 2019; Sutton et al., 2016). To address these limitations, our study connects both fields by mapping evidence across major accounting areas and AI dimensions to clarify knowledge convergence and highlight underexplored research opportunities.

The following sections of this paper are structured as follows. Section two presents the literature review on AI technologies in accounting. Section three explains the research method. Section four covers the results which details the quantitative findings. Section five and six provide two part of discussions: qualitative analysis of past findings and outlines the future research avenues. Finally, section seven provides the conclusion.

Literature Review

The term Artificial Intelligence (AI) was coined by McCarthy et al. (1995) to describe machines capable of imitating human intelligence in using language, problem-solving, and learning. AI refers to computing technologies that simulating human learning behaviors (sensing, cognizing, and acting) while learning from experience and adapting over time (Akerkar, 2019; Ng & Alarcon, 2020). AI combines data, algorithms, and computing power, including machine learning, fuzzy logic, and natural language processing (Bracci, 2023).

A major challenge with AI is its diverse concepts and technologies. While contemporary society often associates AI with intelligent software that can independently learn and change itself (the human-robotic concept), this level has not yet been achieved. Therefore, to classify the AI-related research domains in this literature review, we adopt the framework by Armstrong and Lee (2021), which categorizes the AI universe into three main areas: AI approaches, AI tasks, and AI applications (see definition in Figure 1).

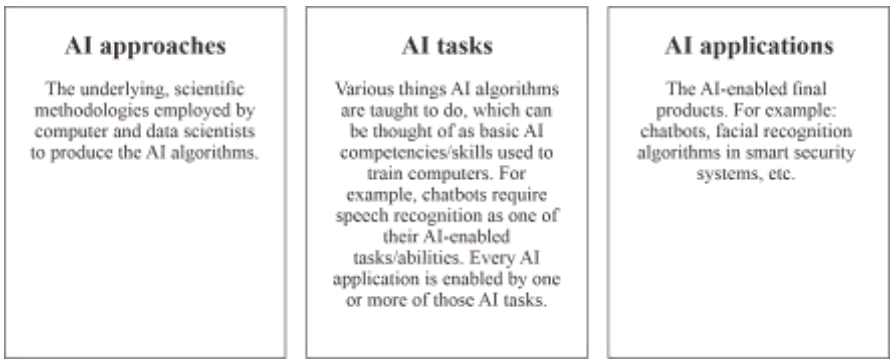

Figure 1. AI domains (adapted from Armstrong & Lee, 2021)

Following the potential utilization of big data, ongoing innovation of AI technology in the business domain primarily focuses on developing capabilities to generate insights from data and provide relevant information to formulate critical and sustainable solutions for business organizations and their stakeholders (Arora & Sharma,

2023). Many sectors, including finance, manufacturing, retail, marketing, and public administration, voiced their interest in applying AI technologies to support business transformation and gain more significant competitive advantages (Haenlein & Kaplan, 2021; Hossain et al., 2022; Najem et al., 2022; Newman et al., 2022).

In the accounting domain, the demands for automation of laborious clerical and repetitive tasks have also been addressed using AI applications combined with advanced data analytics (Ng & Alarcon, 2020). AI offers capability and consistency in analyzing and interpreting accounting data faster and more accurately than human performance, thereby enabling timeliness in presenting accounting information to improve response and quality of decision-making (Bose et al., 2023; Petkov, 2020). The software development company Sage (2018) conducted a global survey of 3,000 accounting professionals, stating that 49% of accountants want to automate their day-to-day administrative management, including e-mail, data entry, and numerical data crunching. Likewise, 66% believed it was necessary to invest in AI technology to automate such repetitive and time-consuming tasks (Sage, 2018). Even though many users are certain of the positive side of AI technology in strengthening and enhancing the ability of accountants to handle recurring tasks, there are also anxieties that AI may not be easily incorporated into generally accepted accounting standards and accounting procedures and also uncertainties that AI is sufficiently reliable in making business decisions (Holmes & Douglass, 2022).

Research Methods

To ensure transparency and replicability, this study integrates a systematic literature review (SLR) with quantitative observations and qualitative content analysis to conduct an in-depth review and critical examination of AI in accounting research. SLR serves as a structured and reproducible method to evaluate and synthesize academic and professional literature (Zide & Jokonya, 2022). Drawing on secondary data, this approach provides exploratory and descriptive insights into current research trends, methodologies, and knowledge gaps (Indarti et al., 2020; Wessels & Jokonya, 2022). Accordingly, the methodology follows a sequential five-phase workflow: identification, screening, eligibility assessment, and synthesis of the selected articles.

In Phase 1, the review scope is defined by focusing on AI in accounting, aligning boundaries with the research objectives and research questions. Journal articles were established as the primary unit of analysis. In Phase 2, a systematic iterative search strategy is conducted exclusively via Scopus, curated abstracts and citation coverage across disciplines and its extensive use in AI-related review studies in management and business research (Kaushal et al., 2023; Keding, 2021). The search employs the string "Artificial Intelligence" OR "AI" AND "Accounting", utilizing Boolean logic via Scopus' Combine Queries feature to ensure all retrieved records capture both (AND) core concepts and their terminological variants (OR).

In Phase 3, predefined eligibility criteria are applied to refine the initial results by restricting the scope to include only English-language journal articles within the "Business, Management and Accounting" subject area. No publication-year restriction is imposed to capture the full evolution of the relevant literature, yielding an initial 151 articles. In Phase 4, a two-stage screening procedure is conducted. First, a manual abstract screening excludes 64 articles that do not substantively focus on AI in accounting. Second, an outlet-based quality check using SCImago Journal Rankings (SJR) excludes nine articles from non-ranked journals. Following these phases, 78 articles constitute the final dataset, with the overall selection process summarized in Table 1.

Table 1. Summary of the collection and screening process

Collection and screening process			Document results
Search strings: TITLE-ABS-KEY (artificial AND intelligence) OR TITLE-ABS-KEY (ai) AND TITLE-ABS-KEY (accounting)			151
Limit to:	*Subject Area*	Business, Management, and Accounting	
	Document Type	Article	
	Source Type	Journal	
	Language	English	
Articles excluded from AI-related themes in an accounting context			64
Articles excluded from non-ranked journals (Scopus Quartile - SJR)			9
Final selected articles			78

In Phase 5, the final dataset of 78 articles is analyzed using quantitative observations to map trends and content analysis to synthesize insights. Following Anggraini and Sholihin (2023), each article is classified into five dimensions: (1) research topics, (2) settings, (3) theories, (4) methods, and (5) primary data analysis techniques. The content analysis consolidates existing patterns and identifies underexplored themes to develop a future research agenda. Distinct from prior reviews, this study explores research opportunities across two strategic domains: 1) the accounting domain – highlighting the potential AI-related themes that are still rarely discussed in certain branches

of accounting, and 2) mapping the research gaps in the context of how accounting leverages different technological arenas in the AI universe – the artificial intelligence domain. All phases of article identification, screening, eligibility assessment, and inclusion are summarized using the PRISMA method in Figure 2.

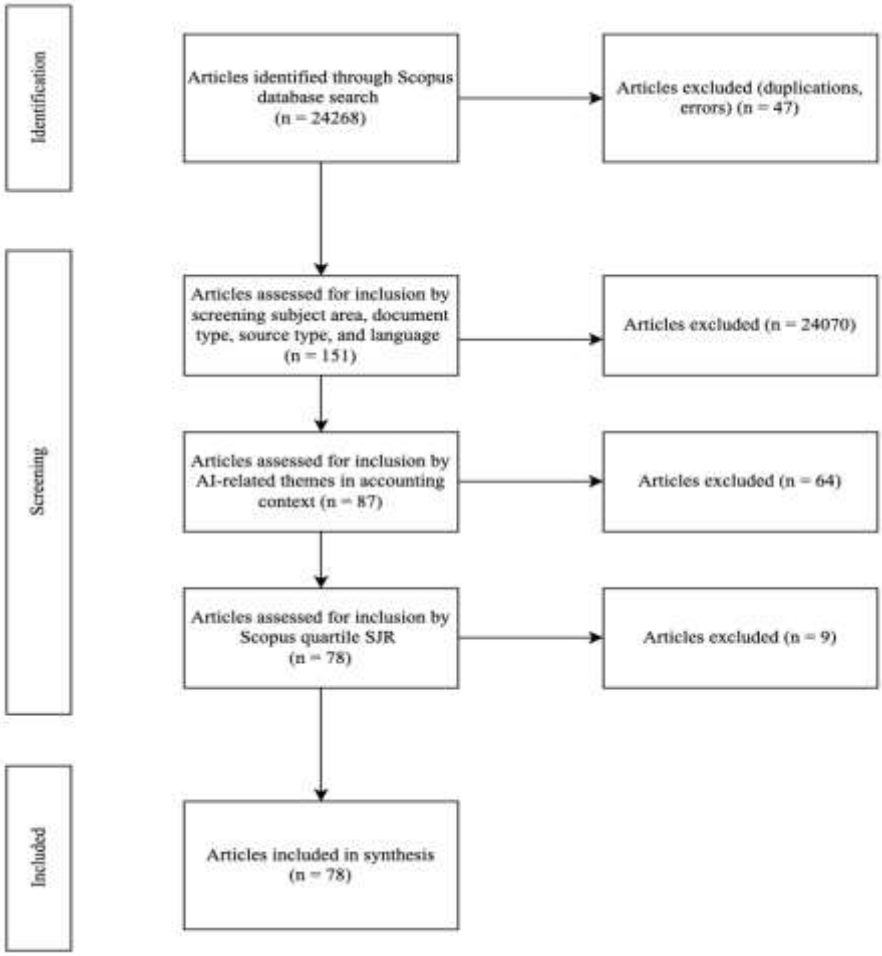

Figure 2. PRISMA Flow Diagram

Results and Discussion

The following literature review section contains a descriptive analysis of the final selected articles. We refer to Anggraini and Sholihin (2023) to present key insights from the existing literature by mapping the frequency distribution of the articles based on publication quality, journal title, research topics, underlying theories, country and industry settings, research methods, and analytical techniques. The mapping process classifies the articles over a period of 10 years (one decade) to identify the period of their appearance in scientific publications. Instead of dividing the 1984-2023 range into decennial periodizations, we use a grouping of publication ranges based on each of the initial years of the decades (before 1990, 1991-2000, 2001-2010, 2011-2020, 2021 and after) to simplify the process of classifying and reading results required in the analysis.

The 78 articles we define as final data were published in nearly the last four decades, from 1984 to 2023. The earliest article found was written by Birnberg and Shields (1984), which examines the role of attention and memory in the human processing of accounting information with a review of psychology, marketing, and artificial intelligence literature. The latest article that we took from the database was written by Rahman and Zhu (2023) about the potential role of Machine Learning (ML)-based Artificial Intelligence (AI) approaches in predicting accounting fraud.

Frequency distribution of articles by year and publication quality

The quality of scientific publications can be observed under the SCImago Journal & Country Rank system. This public portal provides information about journals and country scientific indicators developed based on information contained in the Scopus database. The academic and research community widely uses the SCImago Journal Rank (SJR) as a basis for scientific assessment and analysis of the impact of a particular journal title (SCImago, 2010). Scopus classifies publication quality based on different quartile groups. These quartiles also represent the credibility

of a journal, as reflected by the demand level of the scientific community, with a classification of Q4 (least-cited journal) to Q1 (most-cited journal).

Most scientific publications on AI in accounting literature have been dominated by journals in the Q1 and Q2 categories, amounting to 48.7 and 38.5 percent of the total identified articles (see Table 3 – supplementary file). Significant research discussion and output growth occurred in the last decade (2011 and after), where 67 out of 78 articles (85.9%) were published within that period.

Frequency distribution of articles by publication journals

Table 4 (see in the supplementary file) shows the distribution of scientific publications in Scopus-indexed journals, which indicates a growing trend in research works over the last decade (2011 onwards). A surge in articles was dominated by Q1 and Q2 journals with a relatively balanced distribution (38 and 30 articles, respectively). This fact indicates a positive signal that AI issues have received great attention from academics and researchers in accounting. However, almost no single journal published academic papers far exceeding the others — the eight articles published by the Journal of Emerging Technologies in Accounting are the highest number found in the literature review. The few articles in each journal indicate that collective efforts to stimulate higher research productivity are imperative to respond to the vast open study opportunities.

Frequency distribution of articles by research topics

The frequency distribution of AI topics in the accounting domain for 78 articles reviewed is shown in Table 5 (see in the supplementary file). We found the spotlight on the three most studied areas: auditing (36.1%), finance (23.6%), and managerial (15.3%). Other fields of accounting studies reached 16.7%, consisting of many articles discussing AI in accounting education (10 articles in total). Despite only a few studies related to AIS (5.5%), the general concept of artificial intelligence cannot be separated from the context of information technology, which is closely related to AIS issues. Meanwhile, for AI domains, the majority of articles discussed "AI" at the approach level (58.5%), followed by AI tasks (29.3%). Accounting research that addresses AI specifically at the application level is still infrequent, making this a challenge as well as an opportunity for the development of accounting research in the future, particularly to bring more discussion and empirical evidence into the realm of the practical application of AI technology in the accounting fields. Table 5 below provides the detailed results.

Frequency distribution of articles by theories

Our analysis shows that 23 theories were applied to 30 research articles, while more than half of the remaining articles did not explicitly disclose any theoretical basis used in the studies. Among the various theories found in our observations, agency theory (13.5%) and the technology acceptance model (10%) are the most widely applied (see Table 6 – supplementary file). The prominence of agency theory indicates a strong emphasis on governance related concerns, such as information asymmetry, control mechanisms, accountability, and principal-agent relationships. This theoretical choice is particularly advantageous in contexts where AI is examined as a tool for monitoring, decision support, and performance evaluation. Similarly, the widespread use of TAM reflects a prevailing focus on individual level adoption behavior, particularly users' perceptions of usefulness and ease of use. TAM provides a parsimonious and empirically robust framework for explaining initial acceptance of AI-based systems, especially in early implementation phases. In contrast, theories that address broader organizational and institutional dimensions, such as institutional theory, legitimacy theory, diffusion of innovation, and stakeholder theory appear only in a limited number of studies. While these theories are less frequently applied, they offer distinct analytical advantages by capturing environmental pressures, legitimacy seeking behavior, and social embeddedness of AI adoption.

Frequency distribution of articles by research setting

Table 7 (see in the *supplementary file*) shows that the most popular country setting of AI in accounting studies is the United States (US), which has a percentage of 14% (11 of 78 articles). The US has become a popular country setting since 2011 and continues to be studied until the following years. Each of 5 articles takes European country settings (1.3%), such as Ukraine (Korol et al., 2022), Italy (Zotti et al., 2023), Finland (Korhonen et al., 2020), Poland (Juszczyk et al., 2019), and Sweden (Elliot et al., 2020). Nine articles take country settings in Asia-Pacific, such as China (Rahman & Zhu, 2023; Rahman & Ziru, 2023), Korea (Choi et al., 2022), Australia (Kend & Nguyen, 2020), Indonesia (Siladjaja et al., 2022), India (Tiwari & Khan, 2020), Malaysia (Lee & Tajudeen, 2020), and Sri Lanka (Samanthi & Gooneratne, 2023). Meanwhile, three other articles take Egypt (Diab et al., 2023), Lebanon (Nouraldeen, 2023), and Jordan (Abukhader, 2021) as country settings. About 51 of 78 articles categorized by "other" use multiple countries (Leitner-Hanetseder et al., 2021), and the rest do not mention the country setting used. Based on the country setting, there are opportunities for future studies to explore AI in accounting studies in European and Asian countries.

Furthermore, Table 8 (see in the supplementary file) shows the industry settings used by the articles reviewed. The services industry dominates with 15% (12 articles), which has increased since 2011. The service industry consists of accounting/audit firms/associations. The second dominance is occupied by higher education settings (6%) and followed by other settings such as publicly listed firms (2.5%), publicly traded firms (5%), manufacturing (4%), retail (2.5%), and non-financial firms (1.5%). The higher education setting, which occupies the second position, indicates that AI is being explored in the accounting education field.

Frequency distribution of articles by research methods

As indicated in Table 9 (see in the *supplementary file*), other research methods, which contain 36 articles, have the highest percentage of 45%. Articles in the "other" category are dominated by the literature review method, both unstructured and structured literature review. This study also includes an article that uses more than one method in the "other" category, such as (Fedyk et al., 2022), which uses archival and interview methods. In addition, other methods are not widely used, such as the Social Accounting Matrix (SAM) method (Zotti et al., 2023). The second most used method is archival (12% with 18 articles). The rest were followed by case/field studies (14%), surveys (6%), interviews (5%), and experiments (3%).

Frequency distribution of articles by analysis techniques

Table 10 (see in the *supplementary file*) presents the analytical techniques used in the articles. The analysis techniques were dominated by regression and thematic analysis (12.5%). Regression is still a popular technique in AI research in accounting due to its use in articles since 2021. Furthermore, thematic analysis is also widely used to identify and interpret patterns or themes of data. Thematic analysis has been popularly used since before 1990 by Elliott (1986) and Birnberg and Shields (1984). In addition, the analytical technique widely used in AI research in the accounting domain is a narrative review (9%), followed by machine learning, neural networks, and content analysis (4.5% each). Meanwhile, other analysis techniques are dominated by literature review studies that do not use specific analytical techniques because their nature is unstructured.

Assessing the Past Literature - How far have we come so far?

Current Discussion of AI in Accounting Domains

AI has gained increasing attention in accounting scholarship due to its potential to transform accounting practices and improve task efficiency and decision-making. Prior studies have highlighted its role in automating accounting tasks (Korhonen et al., 2020), supporting financial forecasting and planning (Juszczyk et al., 2019), enhancing the audit process (Fedyk et al., 2022; Han et al., 2023; Kokina & Davenport, 2017; Rahman & Ziru, 2023; Roszkowska, 2021), and predicting fraud (Rahman & Zhu, 2023). However, the reviewed literature gives limited attention to the challenges and vulnerabilities associated with AI adoption in accounting. Although recent studies have begun to address critical issues such as ethical concerns (Chukwuani, 2025; Schweitze, 2024), the dominant focus remains on the benefits of AI. Considering the broad scope of AI and the diversity of accounting domains, this study adopts Armstrong and Lee (2021) classification of AI into AI approaches, AI tasks, and AI applications. This categorization enables a more focused review across accounting subfields, including auditing, financial accounting, managerial accounting, taxation, and accounting information systems.

AI Approaches in Auditing, Financial, Managerial, Tax, and Accounting Information Systems

AI approaches encompass the scientific methodologies utilized by computer and data scientists to create AI algorithms. In accounting research, this category focuses less on AI as end-user software and more on its technical basis. In auditing, early work examined AI through expert systems as a tool capable of reshaping audit practices in the information era (Elliott, 1986). Rule-based "if/then" models were argued to reduce human subjectivity and improve audit quality, showing that AI-related audit discussions had emerged long before today's wide range of AI applications. Later studies expanded this discussion to AI-driven audit automation (Fedyk et al., 2022; Han et al., 2023; Kokina et al., 2017; Rahman & Ziru, 2023; Roszkowska, 2021), ethical implications (Lehner et al., 2022; Munoko et al., 2020), and the use of big data in auditing (Agustí & Orta-Pérez, 2023).

In financial accounting, AI is discussed in relation to IFRS and decision usefulness (Leitner-Hanetseder & Lehner, 2023), investor relations and AI stock returns (Adekoya et al., 2022), operational efficiency (Mishra et al., 2022), financial statement management (Mosteanu & Faccia, 2020), computer-readable accounting standards (Le Guyader, 2020), changes in accounting functions (Petkov, 2020), and sustainability-related accounting issues (Tiwari & Khan, 2020). In managerial accounting, studies examine AI's implications for managerial roles (Nielsen, 2022), business processes (Mahroof, 2019), accountant roles and skills (Leitner-Hanetseder et al., 2021; Samanthi & Gooneratne, 2023), and management accounting task automation (Korhonen et al., 2020). However, AI adoption

also raises concerns, including expertise loss due to automation (Ardichvili, 2022), algorithm-related challenges for management accountants (Arnaboldi et al., 2022), and knowledge acquisition issues in expert systems (Wagner et al., 2002). In taxation, Siladjaja et al. (2022) used an AI simulation model to support tax-related decision-making by investors and management. In accounting information systems, studies highlight AI's implications for workforce development (Zotti et al., 2023), the growing demand for AI and machine learning applications (Kommunuri, 2022), and AI's role in identifying trends in accounting research (Mancini et al., 2021).

This review shows that AI approaches in accounting remain strongly oriented toward technical foundations and methodological development. These findings suggest the need for technically robust and professionally relevant AI foundations before AI is deployed as a practical accounting tool. Since connecting AI's technical development with accounting outcomes remains challenging, further cross-disciplinary research is needed to address the knowledge gap among accounting researchers in engaging with technical AI issues.

AI Tasks in Auditing, Financial, Managerial, Tax, and Accounting Information Systems

AI tasks refer to the capabilities that AI algorithms are trained to perform and function as the link between computational logic and practical accounting outputs. In accounting literature, this category highlights how AI capabilities are developed to support specific accounting-related activities. In auditing, AI tasks have been applied to develop internal audit systems (Korol et al., 2022), estimate abnormal audit fees using deep neural networks (Choi et al., 2022), assess blockchain-related audit risks through smart contracts and smart audit procedures (Zemánková, 2019), evaluate audit proposal readability using AI-based metrics (Chang & Stone, 2019), and support audit procedures through deep learning-based text, speech, and visual recognition (Sun, 2019).

In financial accounting, AI has been used to generate counterfactual explanations for corporate credit ratings (Wang et al., 2023), analyze 10-K reports through text mining (Cooper et al., 2022), and predict sentiment using natural language processing (Mushtaq et al., 2022). Other studies examine AI-based accounting software adoption (Lee & Tajudeen, 2020), key AI concepts for decision-makers (Elliot et al., 2020), technological change in financial reporting (Türegün, 2019), bankruptcy prediction using neural networks (Kim, 2005; Wilson & Sharda, 1994), and cryptocurrency price prediction (Silva de Souza et al., 2019). In managerial accounting, AI has been applied to develop predictive models for construction project cost estimation and cost flows using artificial neural networks (Boussabaine & Kaka, 1998; Juszczyk et al., 2019).

Studies in the AI tasks category remain largely tool-driven rather than problem-driven. Instead of redefining the core competencies required by the accounting practices and profession, researchers tend to employ popular AI algorithms to explore predictability or to create classifications, thereby overlooking the fundamental accounting challenges that AI is intended to address. The results in this category indicate that AI is primarily studied as a more sophisticated "forecasting engine" than traditional statistical regression. Further research is needed to explore more complex cognitive tasks related to accounting practice, such as how this technology performs logical reasoning or supports professional judgment.

AI Applications in Auditing, Financial, Managerial, Tax, and Accounting Information Systems

While AI approaches explain the logic behind AI and AI tasks describe the capabilities it performs, AI applications refer to AI-based products that are ready for end users. In the reviewed literature, only two studies were identified in this category, specifically in managerial accounting and auditing. In managerial accounting, Grüning (2011) introduced the artificial intelligence measurement of disclosure (AIMD), a computerized tool that extracts disclosure indicators from English annual reports across ten information aspects without human intervention. In auditing, Nelson et al. (2000) discussed EDGAR Agent, an intelligent internet agent designed to collect financial information and provide potential value-added services in audit practice.

These findings indicate that accounting literature remains more theoretical and methodological than application-oriented, as most studies are concentrated in AI approaches and AI tasks rather than AI applications. This tendency may reflect the academic orientation of accounting researchers, who are more accustomed to examining AI's potential and technical capabilities than developing ready-to-use products. The development of AI applications requires cross-disciplinary collaboration, big data processing capacity, digital infrastructure, organizational support, and substantial resources. Many accounting institutions may therefore remain hesitant or technologically unprepared to engage in applied AI development.

The limited growth of AI application research in accounting may also be influenced by regulatory and ethical concerns, including data reliability, financial reporting integrity, auditor liability, and data security. Consequently, many scholars focus on discussing AI implications and challenges rather than examining its practical implementation. Since applied AI studies often require costly collaboration among academics, firms, regulators, and technology providers, most AI-related accounting research remains limited to simulations or prototypes rather than fully developed applications.

Guiding the Future Research

More on AI Tasks and Applications, Less on Approach

AI studies are still largely dominated by technical disciplines such as computer science, which, although valuable, often provide limited insight from a business perspective (Caner & Bhatti, 2020). This may explain why accounting research on AI applications remains limited, given that accounting does not primarily focus on the technical development of technology-based applications. Nevertheless, AI, like other technological innovations, requires interaction with business needs and professional practices.

The reviewed accounting literature on AI is mostly concentrated in auditing, financial accounting, and managerial accounting, with only limited attention to public accounting (Bakarich & O'Brien, 2021), accounting education (Goldwater & Fogarty, 2007), taxation, and accounting information systems. Existing AI application studies are also limited, mainly covering intelligent agents for audit support (Nelson et al., 2000), AI-based disclosure measurement in financial reports (Grüning, 2011), and intelligent tutoring systems for accounting education (Johnson et al., 2009; Phillips & Johnson, 2011). However, the latter is more pedagogical than directly related to accounting practice.

Overall, most studies still discuss AI at the approach level by examining its underlying methodologies or developing conceptual frameworks for adoption. While this focus remains important, future research should move further toward AI tasks and AI applications. Such a shift would allow accounting research to better address practical problems, professional needs, and the actual implementation of AI in diverse accounting domains.

Opportunities in Other Accounting Domains

AI studies are still largely AI has been widely discussed in the five main accounting domains identified by Muehlmann et al. (2015), financial accounting, auditing, managerial accounting, taxation, and accounting information systems. However, this review indicates that AI has also begun to influence other accounting-related areas, particularly accounting education and public accounting.

In accounting education, AI-related studies have appeared since the mid-1990s, emphasizing the need to integrate AI topics into accounting curricula and use innovative technologies to support teaching (Baldwin-Morgan, 1995; White, 1995). More recent studies argue that accounting curricula should be redesigned to balance accounting knowledge with technological skills relevant to industry needs, including AI, blockchain, data analytics, data management, and cloud computing (Holmes & Douglass, 2022; Moore & Benbasat, 1991; Qasim & Kharbat, 2020). Universities and educators are therefore expected to prepare students for an automated accounting environment (Damerji & Salimi, 2021; De Villiers, 2021). AI can also function as a pedagogical tool by improving students' confidence in case-based learning (Goldwater & Fogarty, 2007), providing guidance and feedback in learning the accounting cycle (Johnson et al., 2009; Phillips & Johnson, 2011), and addressing ethical blindness through social and legal perspectives (Sherif & Mohsin, 2021). Future research may examine institutional readiness to adopt AI in accounting education, the role of AI in supporting feedback and learning, and the ethical issues arising from AI-based learning.

AI also creates opportunities for public accounting and public sector organizations. Rather than replacing accountants and auditors, AI can reduce routine and repetitive work, allowing professionals to focus on higher-value tasks such as analytical insight, internal control improvement, and organizational performance enhancement. In the public sector, AI may support better resource allocation, mission achievement (Shimamoto, 2018), and more efficient and effective public services (Bracci, 2023). Public organizations may also use AI to strengthen IT investment, monitoring, climate and economic analysis, and fraud detection (Deloitte, 2023).

Despite these opportunities, AI adoption in public organizations requires caution, particularly because algorithmic decision-making remains complex and potentially unstable. Future studies should therefore examine organizational readiness, the opportunities and challenges of AI adoption, the effectiveness of IT governance, and stakeholders' perceptions of AI in public organizations. This agenda is important to ensure that AI adoption contributes to technology investment and public value creation.

Conclusion

This study provides a systematic review of AI research in accounting by mapping two main dimensions: accounting domains and AI domains. Using 78 Scopus-indexed articles published between 1983 and 2023, this study traces four decades of AI discussion in accounting literature. Descriptive analysis was used to map publication quality, journals, topics, theories, research settings, methods, and analytical techniques, while content analysis was used to identify current developments and research gaps.

The findings show that AI-related accounting research has grown significantly since 2011, confirming AI as an increasingly important topic in the field. This study contributes to the literature by offering a structured taxonomy that links accounting subfields with AI approaches, tasks, and applications. Practically, the review shows

that AI can support the accounting profession by automating repetitive administrative tasks, improving the speed and accuracy of financial data interpretation, and enabling accountants to focus on strategic and analytical roles. These insights are also relevant for higher education institutions seeking to modernize accounting curricula and for public sector organizations aiming to optimize AI-based resource utilization.

However, the literature remains concentrated at the AI approach level, with dominant attention to auditing and financial accounting. Future research should expand empirical studies on AI tasks and applications, particularly in less-explored areas such as accounting information systems, taxation, accounting education, and public accounting. Accounting research should also move beyond conceptual prototypes toward task-specific applications and interdisciplinary collaboration to bridge the knowledge gap between AI development and professional accounting practice.

Supplementary Files

Due to page limitations, the supplementary file containing tables that outline the review of prior studies, the synthesis of findings, and the quantitative analyses can be downloaded via the following link: s.id/JAAISuppFile.

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