

Adopting artificial intelligence in accounting: prerequisites and applications

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Abstract

Purpose – The rapid development of artificial intelligence (AI) is transforming various fields, including accounting. AI-driven solutions have the potential to enhance efficiency and accuracy. This study examines the integration of AI in accounting by addressing two key research questions: (1) What are the prerequisites for incorporating AI solutions in accounting? and (2) Which accounting processes are suitable for AI adoption?

Design/methodology/approach – To answer the research questions, a multivocal literature review (MLR) was conducted, systematically analysing both academic and practice-oriented sources.

Findings – The findings indicate that the successful implementation of AI in accounting depends on several prerequisites, including a suitable IT infrastructure, access to high-quality data, regulatory compliance and workforce upskilling. Furthermore, key accounting processes benefiting from AI integration include invoice processing, anomaly detection, financial forecasting and tax compliance.

Originality/value – This study contributes to the existing body of knowledge by providing a comprehensive and up-to-date analysis of AI in accounting, bridging the gap between research and practice.

Keywords Artificial intelligence, Accounting, Automation, Digital transformation, Machine learning, Financial technology, Process optimization, GenAI, LLM

Paper type Research article

Introduction

The rapid development of artificial intelligence has led to significant changes in various industries in recent years (Bangemann & Hmyzo, 2023). Companies are primarily hoping to increase efficiency through the use of AI (Bitkom, 2023). The prerequisite for this is the widespread integration of artificial intelligence into company processes. According to estimates for Germany, AI could increase productivity by up to 18% by 2040 if implemented effectively (McKinsey, 2023). To illustrate, while an average accountant processes around 15,000 invoices per year, AI-supported systems could achieve the same volume in a single day (Muzzu & Hmyzo, 2023).

Against the backdrop of this huge potential, the aim of this paper is to explore the integration of AI in accounting. More specifically, the following research questions were formulated:

RQ1. What are the prerequisites for adopting AI solutions in accounting?

RQ2. Which accounting processes are suitable for the use of AI?

To address these research questions, we conducted a multivocal literature review (Garousi, Felderer, & Mäntylä, 2019), systematically analysing both academic and practitioner-oriented sources to gain a comprehensive understanding of AI adoption in accounting.



While several literature reviews have examined AI in accounting (e.g. Fisher, Garnsey, & Hughes, 2016; Losbichler & Lehner, 2021; Hasan, 2022; Lehner, Ittonen, Silvola, Ström, & Wührleitner, 2022; Dong, Stratopoulos, & Wang, 2024; Kureljusic & Karger, 2024; Smith & Lamprecht, 2024; Zhao & Wang, 2024), they are often limited in scope, focusing on specific AI technologies or application areas. Moreover, given the rapid technological advancements, some of these studies are already outdated. A comprehensive perspective that systematically considers various AI technologies across different accounting domains is still lacking. This paper aims to address this gap by providing an updated and holistic analysis of AI adoption in accounting.

The paper is structured as follows. First, we provide background information on AI in accounting. Second, the research design is outlined, explaining the multivocal literature review approach. Then, we present the findings, beginning with the prerequisites for AI adoption, followed by an analysis of suitable accounting processes. The discussion section contextualizes these findings, highlighting implications and critically evaluating the body of literature. Finally, the conclusion summarizes key insights, acknowledges limitations, and outlines directions for future research.

Background

Accounting is subject to strong pressure to change (Takyar, 2023; Cao, Jiang, Lei, & Zhou, 2024). This market pressure, triggered by technical innovations, causes change and adaptation in accounting (Bakarich & O'Brien, 2021; Mihai & Duțescu, 2022). Baiod and Hussain (2024) indicate that few studies have explored the adoption of emerging digital technologies such as cloud computing, blockchain, RPA as well as AI in accounting. They conducted a survey among Canadian accounting professionals to investigate the adoption of these emerging technologies. The results show that AI is used by 21% of the surveyed companies while cloud computing is already used by 78% and big data and data analytics by 44%. Big data and data analytics are expected by 45% of participants to have a significant impact on the accounting profession while only 31% see that for AI (Baiod & Hussain, 2024). A survey by Assidi, Omran, Rana, and Borgi (2025) in Tunisia found that the adoption of AI seems to significantly empower accounting professionals, increasing the quality of information disclosure, reduce errors and increase the task performance. In a similar vein, Alghazzawi (2024) found that a high level of AI adoption positively impacts the efficiency of accounting processes. Others emphasise the importance of technological readiness of accounting professionals and recommend including technological competences within the education of accounting professionals to support the adoption of AI in practice (Bui, Phan, & Nguyen, 2025; Damerji & Salimi, 2021).

Often, it is difficult to draw a clear distinction between the different AI technologies. In some cases, the technologies build on each other, or an application is made up of several technologies. However, in general it can be said that in accounting these four types of technologies are used (see, for example, Dong *et al.*, 2024; Yi, Cao, Chen, & Li, 2023; Mihai & Duțescu, 2022; Kommunuri, 2022; Lehner *et al.*, 2022; Cao *et al.*, 2024; Kureljusic & Karger, 2024):

- (1) Intelligent Process Automation (IPA) combines Robotic Process Automation (RPA), a rule-based technology to automate business processes (Koch & Fedtke, 2020), with AI techniques (Schaudt & Schlegel, 2023).
- (2) Machine Learning (ML) is a collective term for various methods that utilise learning processes to recognise existing relationships in data and use them to make predictions (Murphy, 2012; Buxmann & Schmidt, 2021).
- (3) Deep Learning (DL) is a further development of machine learning based on artificial neural networks (ANN). As the name suggests, these are based on the structure of the

human brain of the human brain and attempts to technically replicate its procedures (Buxmann & Schmidt, 2021).

- (4) GenAI uses techniques of DL, especially ANN, to understand input and create new content such as texts, images, code and music (Wecke, 2024).

All of the technologies mentioned have strengths and weaknesses and are therefore more or less suitable for specific use cases.

Research design

This study is based on a multivocal literature review (MLR) conducted on the overall topic of AI in accounting. The pool of literature identified through this MLR was used to analyse the theme of this paper – prerequisites and suitable processes – as well as for a separately published analysis on opportunities and challenges of using AI in accounting.

A literature search is an established method for systematically reviewing all relevant sources and is therefore a central component of scientific work (Garousi *et al.*, 2019). An MLR consists of a systematic literature review (SLR) and a grey literature (GL) search. It involves a systematic, explicit and reproducible review and analysis of thematically relevant sources. These include academic and practice-orientated articles. The term GL is a collective term for sources that have not been academically reviewed, such as blogs, videos, white papers and websites (Garousi *et al.*, 2019). The inclusion of additional non-academic sources makes it possible to consider a broader range of perspectives and findings that may be overlooked in traditional systematic literature reviews. As the use of AI in accounting is a very application-oriented field, the opportunity to incorporate GL should be utilised in order to map practical findings from a rapidly changing subject area. In this way, current developments, findings and research topics can be comprehensively taken into account.

The study followed a multi-stage procedure. An unspecific search initially provided an overview of the research topic, allowing key terms to be identified. The following search string was derived from these (see Table 1):

The white literature search was carried out in the Web of Science (WoS) database. This is one of the leading scientific databases and is characterised by its broad coverage of reviewed articles from various publishers and organisations, including IEEE and Springer (Clarivate, 2024). Due to the good cross-publisher coverage in WoS and in line with Webster and Watson’s (2002) recommendation that “the most important articles are likely to be found in the leading journals”, the inclusion of further databases was deemed unnecessary. The database query was structured in such a way that a possible link between the keywords specified in the search string had to appear in the title, abstract or keywords in order to trigger a hit.

The final query of the search string resulted in 502 hits. In a second step, the articles found were filtered by language (English) and category (Business Finance, Management, Computer Science Artificial Intelligence, Computer Science Information Systems, Business, Computer Science Interdisciplinary Applications). This left 284 articles. After screening the titles, 93 papers remained. Reading the abstracts resulted in a final 27 titles for full-text analysis, of which 25 were relevant. A backward search (Webster & Watson, 2002) resulted in additional

Table 1. Search string

Search string
((TI=(“Accounting”) OR TS=(“Accounting and Controlling” OR “Accounting and Finance” OR “Accounting and Auditing”))) AND (TS=(“AI” OR “artificial intelligence” OR “machine learning” OR “deep learning” OR “ChatGPT” OR “GenAI” or “LLM”)))

three papers. The final sample of the systematic literature analysis thus comprised 28 articles (25 + 3).

The WoS search was supplemented by a Google search to review GL. Entering the search terms resulted in around 240,000,000 hits. As it is impossible to review all articles, the stop criterion of effort limitation recommended by [Garousi et al. \(2019\)](#). This meant that only a predefined number of articles were viewed. Sponsored articles and other adverts were not taken into account. Using a web crawler, the search string was entered into the Google search and then the first 100 hits were automatically recorded in a table. After screening the titles and excluding duplicates with the SLR, 52 articles remained for full-text analysis. While 44 GL sources were deemed relevant, some of them were very similar which led to thematic overlaps and data saturation ([Garousi et al., 2019](#)). For this reason, not all articles from the grey literature were actually referenced in this paper.

Results

Prerequisites of using AI in accounting

The use of AI in accounting is not a plug and play solution. The following section will therefore clarify the question of which requirements should be met in order to use AI effectively in accounting and what recommendations the literature makes in this regard.

A key aspect of successfully implementing AI solutions is the provision of the *necessary infrastructure* ([Mihai & Duțescu, 2022](#); [Onyshchenko, Shevchuk, Shara, Koval, & Demchuk, 2022](#); [Al Wael, Abdallah, Ghura, & Buallay, 2024](#); [Treadway, 2024](#)). AI solutions must be integrated into the existing accounting system architecture to optimise their use. This includes, in particular, the connection to ERP systems and other central administration tools ([Kommunuri, 2022](#); [Cook, 2024](#)).

Another fundamental prerequisite for the use of AI is the *availability of high-quality data* ([Kureljusic & Karger, 2024](#); [Takyar, 2023](#)). AI systems are based on large amounts of data that must be precise, consistent and up-to-date in order to deliver meaningful results ([Leitner-Hanetseder, Lehner, Eisl, & Forstenlechner, 2021](#); [Pierotti, Monreale, & Santis, 2024](#)). Incomplete or incorrect data leads to incorrect conclusions and decisions ([Pierotti et al., 2024](#)). Companies must therefore ensure that AI solutions have a connection to the required data sources ([Zhao & Wang, 2024](#); [Pierotti et al., 2024](#)).

As AI systems in accounting also work with sensitive financial and personnel data, *data protection* is another very relevant issue. Companies should implement suitable security measures such as encryption, access controls and regular security checks to prevent unauthorised access and data misuse ([Pierotti et al., 2024](#)). In addition, it makes sense to establish clear guidelines for handling data in order to comply with data protection regulations ([Lehner et al., 2022](#); [Zhang, Zhu, Dai, Wu, & Chen, 2023](#)).

The use of AI also changes the requirements for accounting professionals ([Emetaram & Uchime, 2021](#)). Employees need *additional skills* in dealing with new systems and tools ([Emetaram & Uchime, 2021](#)). The acceleration or takeover of tasks using AI solutions also opens up new opportunities to transfer employees to activities with higher added value. This also requires further training programmes, which companies should make available to their employees in order to qualify them accordingly ([Stancu & Duțescu, 2021](#)).

Before a large-scale introduction, companies should *test the use of AI in smaller pilot projects*. This allows challenges to be identified before widespread deployment takes place. Iterative approaches also promote continuous improvement and reduce the risk of undesirable developments ([Leitner-Hanetseder et al., 2021](#); [Takyar, 2023](#)). In general, when introducing AI solutions, companies should ensure that a uniform organisational strategy is pursued in order to avoid isolated solutions or connectivity problems ([Takyar, 2023](#); [Mihai & Duțescu, 2022](#)). In addition, collaboration with IT and data specialists may be advisable to ensure the implementation and operation of the systems if in-house knowledge is insufficient ([Leitner-Hanetseder et al., 2021](#)).

The use of AI solutions should not be an end in itself, as they are associated with considerable *investments* (Takyar, 2023). The costs include licence fees, consultancy and integration costs as well as investments in employee training (Zhao & Wang, 2024). At the same time, AI opens up new opportunities, such as efficiency gains. It is therefore advisable to weigh up the costs and benefits of using AI in order to ensure long-term profitability. A cost-benefit analysis is one way of doing this (Leitner-Hanetseder *et al.*, 2021). Companies should strategically examine on a case-by-case basis in which areas AI brings the greatest benefits and how investment costs can be amortised in the long term. As it can be difficult to assess the impact of a new technology, the application in test groups and iterative approaches are a suitable procedure (Leitner-Hanetseder *et al.*, 2021).

Suitable accounting processes for AI incorporation

The use of AI in accounting opens up numerous opportunities to increase efficiency, reduce the error rate and gain deeper insights into financial data (Fanarredha, 2024; Sahota, 2024). Processes that are repetitive, data-intensive or rule-based are particularly suitable for the use of AI. At the same time, these are often time-consuming and error-prone for human users and can therefore benefit from the inclusion of AI (Kokina & Blanchette, 2019; Chen, Huang, & Wu, 2023; Takyar, 2023). In addition, more complex and analytical activities are also increasingly benefiting from the capabilities of modern AI systems (Yi *et al.*, 2023). Some fields of application and processes that are suitable for use are presented below.

Accounting comprises numerous recurring tasks that are well-structured and rule-based, such as processing documents, posting business transactions and reconciling accounts (Kokina & Blanchette, 2019). AI-supported systems can automatically read, classify and post receipts, which significantly reduces manual effort (Cook, 2024). In particular, the combination of technologies such as OCR and Robotic Process Automation (RPA) can speed up workflows by efficiently analysing and posting invoices and other documents (Leitner-Hanetseder *et al.*, 2021; Kommunuri, 2022; Indrayani, Sukoharsono, Djamhuri, & Roekhudin, 2024). This automation makes it possible to increase the speed of accounting processes and minimise errors caused by human error (Хомяк, Петченко, Ярмолюк, Вітер, & Дмитренко, 2022; Colson, 2023). The reconciliation of transactions is another area in which AI can be used effectively. AI systems can automatically link payment information with the corresponding invoices, identify open items and trigger dunning processes. In addition, anomalies such as duplicate invoices, outliers or incorrect amounts can be detected, which increases accuracy in invoice processing (Bakarich & O'Brien, 2021; Leitner-Hanetseder *et al.*, 2021; Agile Leaders Training Center, 2023).

Processing and analysing large volumes of data is another strength of AI. ML and DL algorithms can recognise patterns, trends and anomalies in financial data, create forecasts and reports and point out potential risks or opportunities (Kommunuri, 2022; Värzaru, 2022). AI systems can also efficiently manage the creation and administration of documents in databases (Kommunuri, 2022; Li & Vasarhelyi, 2024).

The provision and simulation of key figures by AI improves decision-making and supports company management in the proactive management of finances (Leitner-Hanetseder *et al.*, 2021; Upwork, 2023). Areas that benefit from this include liquidity or corporate planning (Fanarredha, 2024). AI-supported models can analyse historical data, incorporate external variables and make precise predictions (Kommunuri, 2022; Kureljusic & Karger, 2024). Such systems enable companies to simulate various scenarios and better understand the impact of decisions. This improves strategic planning and risk evaluation (Leitner-Hanetseder *et al.*, 2021; Värzaru, 2022).

Taxation is another complex but clearly structured area that is suitable for the use of AI (Bakarich & O'Brien, 2021). AI systems can analyse tax regulations, calculate tax obligations and identify possible optimisation potential (Takyar, 2023; Dong *et al.*, 2024; Zhao & Wang, 2024). The same applies to the use of AI for fraud detection. AI models can identify anomalies and suspicious patterns in transaction data that may indicate fraudulent activity. Such systems

continuously learn from historical data and thus improve their efficiency (Babatunde Adeyeri, 2024; Zhao & Wang, 2024).

The same approach can also be used to speed up the auditing of monthly and annual financial statements. These often time-critical processes require a high level of manual checking. AI systems can automate these checks by consolidating data, recognising inconsistencies and making suggestions for rectifying discrepancies (Pierotti *et al.*, 2024). This significantly speeds up the finalisation process while ensuring that the results comply with legal requirements (Cao *et al.*, 2024).

Although accounting relies heavily on figures, the use of LLM can also offer opportunities. Such models can summarise video conferences, annual reports or regulatory changes quickly and clearly, thereby contributing to greater efficiency (Dong *et al.*, 2024; Zhao & Wang, 2024).

Discussion

The analysis revealed that humans and machines are rarely in direct competition, but rather complement each other perfectly (Leitner-Hanetseder *et al.*, 2021; Colson, 2023; Pierotti *et al.*, 2024). AI technology is often used for activities that are monotonous and tiring for humans. The inclusion of AI can therefore help human users to concentrate better on value-adding activities (Hasan, 2022; Indrayani *et al.*, 2024). Previous technologies such as RPA were only suitable to automate tasks that are rule-based with clear if-then decisions, only process highly structured data (Riedl & Beetz, 2019), and in general have low cognitive requirements that do not include subjective judgement, creativity or interpretation skills (Aguirre & Rodriguez, 2017). In contrast, AI-based systems are capable of processing unstructured data, detecting anomalies, and learning from experience. These capabilities allow AI tools to handle a higher degree of uncertainty and complexity. At the same time, AI should not be viewed as a substitute for existing technologies. Rather, it tends to act as a complementary layer, enhancing decision-making and automation when used in conjunction with established systems (Schaudt & Schlegel, 2023). However, it should be noted that the use of AI technology in accounting can be both a stepping stone and a stumbling block. While parts of the literature view AI positively, others express concerns. AI systems make it possible to automate repetitive tasks, process large volumes of data and thus achieve efficiency gains (Kokina & Blanchette, 2019; Cao *et al.*, 2024; Zhao & Wang, 2024). These efficiency gains result from time and cost savings as well as a reduction in human error (Hasan, 2022; Dong *et al.*, 2024; Indrayani *et al.*, 2024). Through the use of machine and deep learning, systems are continuously learning and improving their accuracy. This enables more precise forecasts and more informed decision-making (Bose, Kumar Dey, & Bhattacharjee, 2022; Pierotti *et al.*, 2024). On the other hand, there are risks associated with the use of AI in accounting. Central concerns include ethical and regulatory issues, such as data protection, transparency, and the fairness of algorithmic decisions, which may exhibit bias and thus undermine trust in automated outcomes (Pierotti *et al.*, 2024; Yi *et al.*, 2023; Zhang *et al.*, 2023; Lehner *et al.*, 2022). This is particularly critical in accounting, where decisions can carry serious financial and legal consequences. Moreover, issues of data quality and transparency pose further obstacles. AI systems often function as “black boxes,” making it difficult to trace or explain how certain outcomes are reached (Lehner *et al.*, 2022; Schweitzer, 2024; Pierotti *et al.*, 2024). The effectiveness of such systems is also highly dependent on the quality of the training data (Zhao & Wang, 2024). That means that AI adoption requires a well-thought-out approach and consideration of technical, legal and ethical aspects. It is therefore necessary to examine on a case-by-case basis whether AI solutions are currently more beneficial or detrimental.

In terms of the body of literature, the analysis showed that scientific publications often focus on partial aspects of AI applications and provide methodologically sound analyses. The high proportion of practice-oriented articles in the grey literature also shows that companies want a deeper integration of AI solutions and have already recognised many scenarios as possibilities (Cook, 2024; Sahota, 2024; Takamizawa, 2025). Compared to the academic

literature, however, the GL contributions often remained vague in their statements. Within the scope of this work, it was not possible to explicitly examine individual promises from GL, which is why these should be viewed with a certain degree of caution. At the same time, however, GL should not be excluded, as it takes current developments into account more quickly than the white literature and covers practical applications more frequently. The highly dynamic nature of the research field is also reflected in the fact that many current developments were initially discussed in the grey literature before being taken up in scientific publications. For example, [Dong et al. \(2024\)](#) based their study on the use of ChatGPT published in 2024 on the status of GPT-4, which was published in 2023. Although this study is only about a year old, the capabilities of ChatGPT are already significantly more extensive than at the time of the study ([OpenAI, 2025](#)), which once again emphasises the relevance of GL.

A key gap in the existing literature with regard to our research questions is the lack of robust empirical evidence on actual AI adoption for particular accounting processes in practice. While many contributions describe promising use cases or pilot implementations, there is limited systematic research that quantifies the actual benefits of AI solutions in real-world settings. Similarly, empirical data on the prevalence of AI adoption across firms, industries, and accounting domains remains scarce. Most existing literature focuses on illustrative cases or conceptual arguments rather than generalizable insights about how, where, and to what extent AI is actually being used in accounting practice.

Conclusion

Summary and contribution to knowledge

Through a combination of systematic literature research and the inclusion of grey literature, this study was able to draw a comprehensive picture of the current state of research on artificial intelligence in accounting. Compared to previous studies on the topic of AI in accounting, this work stands out in particular due to its broad thematic coverage. For example, [Dong et al. \(2024\)](#) only examined the use of chat GPT, while [Kokina and Blanchette \(2019\)](#) only analysed the possibilities of RPA solutions in accounting. While many previous studies have primarily examined specific technologies or use cases, this study aims to provide a comprehensive perspective on possible applications of the various AI technologies.

Implications

The findings of this study have important implications for accounting professionals, business leaders, and policymakers. First, organizations planning to implement AI in accounting should invest in the necessary technological infrastructure and data management capabilities to ensure seamless AI integration. Second, companies should prioritize employee training and change management strategies to address skill gaps and enhance AI adoption. Third, regulatory bodies need to establish clear guidelines and compliance frameworks to mitigate ethical and legal risks associated with adopting AI in accounting.

Furthermore, AI presents an opportunity to enhance the strategic role of accountants by automating repetitive tasks and allowing professionals to focus on higher-value activities such as financial analysis, risk management, and advisory services. Companies that proactively adopt AI while addressing its implementation challenges are likely to gain a competitive advantage in the evolving digital landscape.

Limitations and future research opportunities

Despite our systematic approach, some methodological limitations must be taken into account in the work. Firstly, the results of this systematic literature review are dependent on the search strings used, which may limit the comprehensiveness of the included studies. Secondly, the selection of the literature considered is subject to a certain degree of subjectivity, particularly in the relevance assessment of the literature considered. Thirdly, the study only provides a

snapshot. Due to the high publication dynamics, some newer approaches may not have been included, as scientific publications in particular often appear with a delay. Finally, there is the possibility that scenarios were presented too positively in the non-peer reviewed GL, given commercial interests of certain authors, which could lead to an overly optimistic presentation.

Despite the progress made, there are still unanswered questions. Future research should aim to address the current lack of empirical evidence regarding AI adoption in accounting. In particular, there is a need for quantitative studies that quantify the actual benefits of AI implementations as well as research that explores adoption patterns across industries, firm sizes, and accounting domains. One area that should be examined more closely is the methodical integration of AI applications into work processes. Future work could examine how specific AI technologies align with different process types and how their implementation can be embedded in organizational workflows. Contributing to a suitable governance framework and appropriate training concepts are further topics that require closer attention from research and practice.

Furthermore, our study takes a non-technical, process-oriented view on AI and thus does not systematically distinguish between different AI subtypes in the analysis. While we introduce a basic typology in the background section, we treat AI as a higher-level construct throughout the empirical part to focus on overarching organizational and process-related prerequisites. Future research could build on our findings by examining how specific AI technologies (e.g. machine learning, GenAI) align with distinct accounting processes and vary in their implementation requirements.

References

- Agile Leaders Training Center (2023). Artificial intelligence in accounting: A game changer in the digital age, artificial intelligence (AI) has turned out to be a revolutionary force across a plethora of industries. The realm of accounting is no different. Available from: <https://www.linkedin.com/pulse/applications-artificial-intelligence-accounting> (accessed 24 February 2025).
- Aguirre, S., & Rodriguez, A. (2017). Automation of a business process using robotic process automation (RPA): A case study. In J. C. Figueroa-García, E. R. López-Santana, J. L. Villa-Ramírez, & R. Ferro-Escobar (Eds.), *Applied Computer Sciences in Engineering*, 2017. Cham: Springer International Publishing (pp. 65–71).
- Al Wael, H., Abdallah, W., Ghura, H., & Buallay, A. (2024). Factors influencing artificial intelligence adoption in the accounting profession: The case of public sector in Kuwait. *Competitiveness Review: An International Business Journal*, 34(1), 3–27.
- Alhazzawi, R. (2024). AI adoption and organizational readiness: Boosting accounting efficiency in Jordan. *Journal of Financial Reporting and Accounting*. doi:10.1108/JFRA-08-2024-0570.
- Assidi, S., Omran, M., Rana, T., & Borgi, H. (2025). The role of AI adoption in transforming the accounting profession: A diffusion of innovations theory approach. *Journal of Accounting and Organizational Change*. doi:10.1108/JAOC-04-2024-0124.
- Babatunde Adeyeri, T. (2024). Automating accounting processes: How AI is streamlining financial reporting. *Journal of Artificial Intelligence Research*, 4(1), 72–90.
- Baiod, W., & Hussain, M. M. (2024). The impact and adoption of emerging technologies on accounting: Perceptions of Canadian companies. *International Journal of Accounting and Information Management*, 32(4), 557–592.
- Bakarich, K. M., & O'Brien, P. E. (2021). The robots are coming ... but aren't here yet: The use of artificial intelligence technologies in the public accounting profession. *Journal of Emerging Technologies in Accounting*, 18(1), 27–43.
- Bangemann, E., & Hmyzo, E. (2023). Wie KI das Rechnungswesen revolutioniert. Available from: https://www.ey.com/de_de/assurance/wie-ki-das-rechnungswesen-revolutioniert (accessed 29 July 2024).

- Bitkom (2023). Deutsche Wirtschaft drückt bei Künstlicher Intelligenz aufs Tempo. Available from: <https://www.bitkom.org/Presse/Presseinformation/Deutsche-Wirtschaft-drueckt-bei-Kuenstlicher-Intelligenz-aufs-Tempo>
- Bose, S., Kumar Dey, S., & Bhattacharjee, S. (2022). Big data, data analytics and artificial intelligence in accounting: An overview.
- Bui, H. Q., Phan, Q. T. B., & Nguyen, H. T. (2025). AI adoption: A new perspective from accounting students in Vietnam. *Journal of Asian Business and Economic Studies*, 32(1), 40–51.
- Buxmann, P., & Schmidt, H. (2021). *Grundlagen der Künstlichen Intelligenz und des Maschinellen Lernens*. Berlin, Heidelberg: Springer Gabler. doi: [10.1007/978-3-662-61794-6_1](https://doi.org/10.1007/978-3-662-61794-6_1).
- Cao, S. S., Jiang, W., Lei, L., & Zhou, Q. (2024). Applied AI for finance and accounting: Alternative data and opportunities. *Pacific-Basin Finance Journal*, 84, 102307.
- Chen, Y., Huang, X., & Wu, Z. (2023). From natural language to accounting entries using a natural language processing method. *Accounting and Finance*, 63(4), 3781–3795.
- Clarivate (2024). Web of science coverage details. Available from: <https://clarivate.libguides.com/librarianresources/coverage> (accessed 5 November 2024).
- Colson, A. (2023). Staying up to speed with artificial intelligence in accounting. Available from: <https://tax.thomsonreuters.com/blog/staying-up-to-speed-with-artificial-intelligence-in-accounting/> (accessed 13 January 2025).
- Cook, B. (2024). 2025 guide to AI in accounting trends, use cases and tools. Available from: <https://tipalti.com/blog/ai-accounting/> (accessed 9 January 2025).
- Damerji, H., & Salimi, A. (2021). Mediating effect of use perceptions on technology readiness and adoption of artificial intelligence in accounting. *Accounting Education*, 30(2), 107–130.
- Dong, M. M., Stratopoulos, T. C., & Wang, V. X. (2024). A scoping review of ChatGPT research in accounting and finance. *International Journal of Accounting Information Systems*, 55, 100715.
- Emetaram, E., & Uchime, H. N. (2021). Impact of artificial intelligence (AI) on accountancy profession. *Journal of Accounting and Financial Management*, 7, 15–25.
- Fanarredha, S. (2024). Accounting and AI: The impact of artificial intelligence and machine learning | Airbase by Paylocity. Available from: <https://www.airbase.com/blog/accounting-ai> (accessed 9 January 2025).
- Fisher, I. E., Garnsey, M. R., & Hughes, M. E. (2016). Natural language processing in accounting, auditing and finance: A synthesis of the literature with a roadmap for future research. *Intelligent Systems in Accounting, Finance and Management*, 23(3), 157–214.
- Garousi, V., Felderer, M., & Mäntylä, M. (2019). Guidelines for including grey literature and conducting multivocal literature reviews in software engineering. *Information and Software Technology*, 106, 101–121.
- Hasan, A. R. (2022). Artificial intelligence (AI) in accounting and auditing: A literature review. *Open Journal of Business and Management*, 10(01), 440–465.
- Indrayani, Sukoharsono, E. G., Djamhuri, A., & Roekhudin (2024). Mapping research landscape of emerging technology in the accounting field: A bibliometric analysis. *Cogent Business and Management*, 11(1), 1–26.
- Koch, C., & Fedtke, S. (2020). *Robotic Process Automation: Ein Leitfaden für Führungskräfte zur erfolgreichen Einführung und Betrieb von Software-Robots im Unternehmen*, 1. Aufl. 2020. Berlin, Heidelberg: Springer Vieweg.
- Kokina, J., & Blanchette, S. (2019). Early evidence of digital labor in accounting: Innovation with robotic process automation. *International Journal of Accounting Information Systems*, 35, 100431.
- Kommunuri, J. (2022). Artificial intelligence and the changing landscape of accounting: A viewpoint. *Pacific Accounting Review*, 34(4), 585–594.
- Kureljusic, M., & Karger, E. (2024). Forecasting in financial accounting with artificial intelligence – a systematic literature review and future research agenda. *Journal of Applied Accounting Research*, 25(1), 81–104.

- Lehner, O. M., Ittonen, K., Silvola, H., Ström, E., & Wührleitner, A. (2022). Artificial intelligence based decision-making in accounting and auditing: Ethical challenges and normative thinking. *Accounting, Auditing and Accountability Journal*, 35(9), 109–135.
- Leitner-Hanetseder, S., Lehner, O. M., Eisl, C., & Forstenlechner, C. (2021). A profession in transition: Actors, tasks and roles in AI-based accounting. *Journal of Applied Accounting Research*, 22(3), 539–556.
- Li, H., & Vasarhelyi, M. A. (2024). Applying large language models in accounting: A comparative analysis of different methodologies and off-the-shelf examples. *Journal of Emerging Technologies in Accounting*, 21(2), 133–152.
- Losbichler, H., & Lehner, O. M. (2021). Limits of artificial intelligence in controlling and the ways forward: A call for future accounting research. *Journal of Applied Accounting Research*, 22(2), 365–382.
- McKinsey (2023). Fachkräftemangel: GenAI kann akuten Bedarf bei hochqualifizierten Jobs lindern. Available from: <https://www.mckinsey.de/news/presse/wie-genai-die-arbeitswelt-in-deutschland-veraendert> (accessed 7 October 2024).
- Mihai, M. S., & Duțescu, A. (2022). Artificial Intelligence solutions for Romanian accounting companies. *Proceedings of the International Conference on Business Excellence* (Vol. 16, pp. 859–869).
- Murphy, K. (2012). Machine learning – a probabilistic perspective. Available from: <https://api.semanticscholar.org/CorpusID:17793133>
- Muzzu, A., & Hmyzo, E. (2023). Wenn die Maschine besser und schneller bucht. Available from: https://www.ey.com/de_de/insights/assurance/wenn-die-maschine-besser-und-schneller-bucht (accessed 16 October 2024).
- Onyshchenko, O., Shevchuk, K., Shara, Y., Koval, N., & Demchuk, O. (2022). Industry 4.0 and accounting: Directions, challenges, opportunities. *Independent Journal of Management and Production*, 13(3), s161–s195.
- OpenAI (2025). ChatGPT — release notes. Available from: <https://help.openai.com/en/articles/6825453-chatgpt-release-notes>
- Pierotti, M., Monreale, A., & Santis, F. (2024). *Artificial intelligence in accounting and auditing*. Cham: Springer Nature Switzerland.
- Riedl, Y., & Beetz, K. R. (2019). Robotic process automation: Developing a multi-criteria evaluation model for the selection of automatable business processes. *AMCIS 2019 Proceedings*.
- Sahota, N. (2024). The dawn of a new era: AI's revolutionary role in accounting. *Forbes*, 22 April. Available from: <https://www.forbes.com/sites/neilsahota/2024/04/22/the-dawn-of-a-new-era-ais-revolutionary-role-in-accounting/> (accessed 9 January 2025).
- Schaudt, L., & Schlegel, D. (2023). Combining robotic process automation with artificial intelligence: Applications, terminology, benefits, and challenges. In M. H. Bilgin, H. Danis, E. Demir, L. Wincenciak, & S. T. Er (Eds.), *Eurasian Business and Economics Perspectives*, 2023 (pp. 83–99). Cham: Springer Nature Switzerland.
- Schweitzer, B. (2024). Artificial intelligence (AI) ethics in accounting. *Journal of Accounting, Ethics and Public Policy*, 25(1), 67–103.
- Smith, L., & Lamprecht, C. (2024). Identifying the limitations associated with machine learning techniques in performing accounting tasks. *Journal of Financial Reporting and Accounting*, 22(2), 227–253.
- Stancu, M. S., & Duțescu, A. (2021). The impact of the Artificial Intelligence on the accounting profession, a literature's assessment. *Proceedings of the International Conference on Business Excellence* (Vol. 15, pp. 749–758).
- Takamizawa, L. (2025). Harnessing innovation: Exploring the responsible use of AI in finance and accounting. Available from: <https://www.ifac.org/knowledge-gateway/discussion/harnessing-innovation-exploring-responsible-use-ai-finance-and-accounting> (accessed 13 January 2025).
- Takyar, A. (2023). AI in accounting and auditing. *Leewayhertz*, 7 December. Available from: <https://www.leewayhertz.com/ai-in-accounting-and-auditing/> (accessed 9 January 2025).

- Treadway, C. (2024). How artificial intelligence is revolutionizing the CPA practice. CPA Practice Advisor, 15 April. Available from: <https://www.cpapracticeadvisor.com/2024/04/15/how-ai-is-revolutionizing-the-cpa-practice/103905/> (accessed 9 January 2025).
- Upwork (2023). Exploring the role of AI in accounting. Available from: <https://www.upwork.com/resources/ai-in-accounting> (accessed 10 January 2025).
- Vărzaru, A. A. (2022). Assessing the impact of AI solutions' ethical issues on performance in managerial accounting. *Electronics*, 11(14), 2221.
- Webster, J., & Watson, R. T. (2002). Analyzing the past to prepare for the future: Writing a literature review. *MIS Quarterly*, 26, xiii–xxiii.
- Wecke, B. (2024). *Wachstum durch den Einsatz von Generativer KI: Funktionsweise und Anwendungsgebiete im Marketing, essentials*. Wiesbaden, Heidelberg: Springer Gabler.
- Хомяк, Н., Петченко, М., Ярмолюк, О., Вітер, С., & Дмитренко, О (2022). Проблеми організації та ведення фінансового обліку в умовах імплементації новітніх методів та інструментів. *Financial and Credit Activity Problems of Theory and Practice*, 6(47), 88–98.
- Yi, Z., Cao, X., Chen, Z., & Li, S. (2023). Artificial intelligence in accounting and finance: Challenges and opportunities. *IEEE Access*, 11, 129100–129123.
- Zhang, C., Zhu, W., Dai, J., Wu, Y., & Chen, X. (2023). Ethical impact of artificial intelligence in managerial accounting. *International Journal of Accounting Information Systems*, 49, 100619.
- Zhao, J., & Wang, X. (2024). Unleashing efficiency and insights: Exploring the potential applications and challenges of ChatGPT in accounting. *Journal of Corporate Accounting and Finance*, 35(1), 269–276.

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