ARTIFICIAL INTELLIGENCE

Artificial Intelligence in Accounting: Applications, Benefits, Challenges and Future Prospects

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Published November 2026

Abstract

The swift advancement of Artificial Intelligence (AI) is revolutionizing conventional accounting practices by facilitating enhanced automation, precision, efficiency, and data-informed decision-making. AI tools are progressively utilized in various fields such as bookkeeping, financial reporting, auditing, fraud detection, tax management, financial analysis, and forecasting. It is crucial for accounting professionals, organizations, educators, and students to comprehend these applications as the accounting field continues to evolve with technological progress. Even though previous research has looked at the potential of AI in accounting, more knowledge is still needed about how AI is being used in various accounting activities, the advantages it offers, and the obstacles to its adoption. More research is needed on issues pertaining to data protection, cybersecurity, implementation costs, ethical concerns, transparency, and the evolving skills needed for accounting professionals. This study's primary goal is to investigate the use of artificial intelligence in accounting and to evaluate its main advantages, difficulties, and potential. Based on secondary data gathered from scholarly publications, professional reports, research papers, and other pertinent sources, the study uses a descriptive research methodology. The results show that AI may enhance financial decision-making, decrease tedious human labour, increase fraud detection, and speed and improve accounting procedures. However, the right technology infrastructure, qualified personnel, moral principles, and efficient data governance are necessary for successful deployment. According to the study, AI should be seen as a supplement to accounting professionals rather than a replacement for them. To prepare professionals for the future of accounting, accounting companies and educational institutions should concentrate on building technical, analytical, and ethical abilities relevant to AI.

Keywords: Artificial Intelligence; accounting; automation; financial analysis; auditing; technology

1 Introduction

The accounting profession has traditionally involved the methodical recording, classification, summarization and analysis of financial transactions. Over the years, accounting practices have undergone significant changes due to developments in information technology. Cloud accounting, data analytics, automation, enterprise resource planning systems, and computerized accounting systems eventually replaced manual bookkeeping. The rise of Artificial Intelligence (AI) constitutes another key stage in this technological change.

Artificial Intelligence denotes the capability of computer systems to execute tasks that typically demand human intelligence, including learning, recognizing patterns, making predictions, classifying information, processing language, and providing decision support. In the field of accounting, AI can analyze extensive datasets of financial information, detect patterns, automate repetitive tasks, and produce insights to aid in decision-making.

The significance of AI in accounting stems from the considerable volume of both structured and unstructured data managed by accounting teams. Tasks in accounting, like transaction processing, invoice validation, reconciliation, financial reporting, auditing, and forecasting, consist of repetitive procedures and extensive datasets. AI technologies can help in processing this information more quickly and can aid professionals in recognizing patterns and exceptions.

Studies on AI-driven forecasting in financial accounting indicate that AI has been utilized in areas like financial analysis, predicting bankruptcy, and detecting fraud or errors. Kureljusic and Karger (2023), via a systematic literature review of 47 research papers, recognized these as significant application domains for AI-based forecasting in financial accounting.

Automation is one of the key uses of AI in accounting. Automated systems are becoming more and more capable of supporting routine tasks like invoice processing, transaction classification, data extraction, reconciliation, and document processing.

AI is becoming more and more important for auditing as well. Traditionally, auditors use techniques including sampling, analytical review, and substantive testing to look at financial data. AI can help auditors analyze big transaction populations and spot odd trends that could need more research. According to recent studies on the use of AI in auditing, audit environments now employ very basic AI applications like optical character recognition and document data extraction, while more sophisticated applications are still being developed. Transparency, bias, privacy, and dependability are among the issues raised by the same study.

Financial forecasting is another crucial subject. Conventional forecasting strategies may rely on statistical methodologies and historical trends. AI-based techniques are capable of analyzing vast amounts of data and finding intricate connections that could aid in financial forecasting.

The potential application of AI in accounting has increased with the advent of generative AI. Large Language Models (LLMs) and generative AI systems are capable of processing and producing human-like writing, as well as helping with tasks like information retrieval, summarization, classification, and document analysis. In their assessment of studies on ChatGPT and LLMs in accounting and finance, Dong et al. (2024) found applications in the field, research use, and implications for accounting and finance organizations and professionals.

AI also has an impact on management accounting. Budgeting, forecasting, performance analysis, cost analysis, and decision-making can all be aided by AI. After reviewing 91 papers on digitalization and artificial intelligence in management accounting, Abbas (2026) came to the conclusion that AI-related technologies have the potential to change organizational structures, accounting data, and management accountants' responsibilities and competencies. Concerns about ethics, security, privacy, and confidentiality were also found during the review.

While AI has many potential advantages, there are obstacles to its adoption. Accounting data often includes private financial and personal information. Therefore, while implementing AI systems, organizations need to take confidentiality, cybersecurity, and data privacy into account. Implementation costs, a shortage of qualified workers, integration with current accounting systems, algorithmic bias, explainability, and dependability of AI-generated outputs are further difficulties.

Another significant concern is the evolving role of accounting experts. Accountants may concentrate more on analysis, interpretation, strategic decision-making, advisory services, and professional judgment if AI systems handle repetitive processing tasks. This does not imply that accountants will vanish; rather, when technology replaces certain regular tasks, their duties may shift.

As a result, the current study takes an integrated approach to studying AI in accounting. The report examines the main uses, advantages, difficulties, and potential applications of AI in accounting rather than focusing on a specific technology or accounting function.

2 Objectives of the study

1. To examine the main uses of AI in accounting.
2. To evaluate artificial intelligence's advantages for accounting procedures.
3. To determine the main challenges to the use of AI in accounting.
4. To investigate how AI is affecting accounting professionals' roles and skill requirements.
5. To analyse the future prospects of Artificial Intelligence in accounting.
6. To suggest measures for effective and responsible adoption of AI in accounting.

3 Review of literature

The existing literature on Artificial Intelligence in accounting covers several areas, including accounting automation, auditing, financial forecasting, management accounting and generative AI.

A comprehensive evaluation of the literature on AI-based forecasting in financial accounting was carried out by Kureljusic and Karger (2023). After searching Web of Science and Scopus, the researchers came up with a final sample of 47 studies. The review found that financial analysis, fraud/error detection, and bankruptcy prediction are important application areas. The study also emphasized the necessity for greater sociotechnical and generalizable research on AI-based forecasting. This study shows that AI can help with predicted financial tasks in addition to ordinary accounting automation.

A scoping review of ChatGPT and associated Large Language Models in accounting and finance was carried out by Dong et al. (2024). Applications of ChatGPT and LLMs, their use as research tools, and implications for accounting and finance professionals and organizations were the three main themes merged from their review. The study is important because generative AI has offered features like text generation, summarization, and classification that go beyond typical automation.

The contribution of technologies like artificial intelligence (AI), cloud computing, big data, and related digital technologies to accounting automation has been studied in research on rising ICT in accounting procedures. According to the literature, technology integration is changing accounting procedures more and more. This lends credence to the idea that AI should not be viewed as a standalone technology but rather as a component of a broader digital transformation of accounting.

Wang and Stratopoulos (2025) investigated the expanding connection between accounting research and artificial intelligence. In light of the quick advancements in generative AI and large language models, their work offers a foundation for comprehending AI-related accounting research. According to the study, as AI's capabilities grow, new questions about professional responsibilities and research methodologies are raised, as well as prospects for research in many accounting domains.

Robotic Process Automation and Artificial Intelligence in Accounting and Auditing was the subject of a recent comprehensive assessment of the literature. The study took into account these technologies' advantages, difficulties, motivators, and degrees of endorsement. According to the research, automation can increase productivity and decrease repetitive tasks, but organizational preparedness, technology, skills, and governance all have an impact on adoption.

Abbas (2026) reviewed 91 publications on digitalization, artificial intelligence (AI), machine learning, deep learning, explainable AI, generative AI, and LLMs in management accounting. According to the study, these technologies have the power to change organizational structures and accounting data. Concerns like security, privacy, secrecy, and ethics were also brought to light. According to the study, automation may also alter the responsibilities and competencies of management accountants by necessitating retraining and upskilling.

Applications of AI in auditing, including data extraction, anomaly detection, audit analytics, and continuous monitoring are identified by research on AI in auditing. While more sophisticated AI applications were still in the early stages of development, simpler AI apps were already being utilized more frequently, according to a 2025 field study on AI usage in auditing. Transparency, AI bias, data privacy, robustness, and dependability were noted as major obstacles.

4 Research gap

The review of literature shows that considerable research has been conducted on Artificial Intelligence and accounting. However, much of the existing research focuses on specific accounting functions or specific technologies.

- Some studies concentrate on AI-based financial forecasting.
- Some focus on AI and auditing.
- Some examine management accounting.
- Some examine ChatGPT and generative AI.
- Others focus on automation and robotic process automation.

Although these studies provide valuable insights, there is a need for an integrated discussion of AI across different accounting functions.

AI technology is also evolving quickly. Generative AI and LLM-based applications are increasingly being used in conjunction with traditional AI applications like machine learning and RPA. As a result, in addition to prospects for automation, accounting professionals now have to meet additional standards for professional judgment, technology proficiency, data governance, and ethical responsibility.

Therefore, the present study attempts to bring together the major dimensions of AI in accounting by examining applications → benefits → challenges → changing skills → future prospects.

5 Research methodology

5.1 Research design

The present study follows a descriptive research design. Since the purpose of the study is to understand and synthesise existing knowledge concerning AI in accounting, the study is based entirely on secondary data. No questionnaire, interview, primary survey or experiment has been conducted

5.2 Method of analysis

The collected literature was analysed using a descriptive and thematic approach.

The information was classified into five major themes:

- Applications of AI in accounting
- Benefits of AI
- Challenges of AI
- Changing role of accounting professionals
- Future prospects of AI

The findings from different sources were compared and synthesised to develop an integrated understanding of the subject.

5.3 Limitations of the study

- It is based entirely on secondary data.
- The study does not measure AI adoption in a particular organisation or population.
- The findings depend on the availability and quality of existing literature.
- AI technology is developing rapidly, and new applications may emerge.
- Different studies use different methodologies, making direct comparison difficult.

6 Applications of artificial intelligence in accounting

- **Bookkeeping and Invoice Processing:** AI can help with data input, transaction classification, expense classification, accounts payable, accounts receivable, and processing invoices. By extracting data such supplier information, invoice numbers, amounts, and taxes, it can increase processing efficiency and decrease tedious manual labor.
- **Bank Reconciliation:** AI is able to match transactions, compare accounting records and bank statements, and spot inconsistencies or missing goods. Accountants can now concentrate on exceptions that need to be reviewed by a human.
- **Financial Reporting:** Data collection, transaction analysis, variance analysis, financial statement analysis, and report writing can all be aided by AI. However, since professional judgment, organizational norms, and accounting standards are still crucial, accountants must examine and authenticate AI-generated data.
- **Auditing and Fraud Detection:** Large-scale transaction analysis, anomaly detection, risk assessment, audit planning, and ongoing monitoring are all supported by AI. Additionally, it may spot odd trends based on the quantity, time, frequency, and other aspects of transactions. Research shows that while more sophisticated AI applications are still being developed, basic ones like data extraction and document processing are already more well-established. However, AI alarms do not prove fraud; instead, human investigation and expert opinion are needed.
- **Tax Management:** Processing tax documents, data extraction, classification, reconciliation, compliance monitoring, and tax research are all areas where AI may help. AI-generated data should be validated using reliable sources because tax laws and regulations are constantly changing.
- **Financial Analysis and Forecasting:** AI is capable of analyzing both past and present data to spot patterns and assist with financial analysis, revenue forecasting, cash flow forecasting, financial hardship prediction, and bankruptcy prediction. AI applications in financial analysis,

fraud/error detection, and bankruptcy prediction were found in a systematic review by Kureljusic and Karger (2023).

- **Management Accounting:** Budgeting, cost analysis, variance analysis, performance evaluation, forecasting, and scenario analysis can all be aided by AI. Managers can use it to find spending trends and gather data for planning and decision-making.
- **Generative AI:** Large language models and generative AI can help accountants with research support, document summarization, report writing, information extraction and classification, and textual document analysis. Dong et al. (2024) examined the consequences of ChatGPT and LLMs for professionals and organizations, as well as their applications in accounting and finance.

7 Benefits of artificial intelligence in accounting

- Increased Efficiency
- Reduction in Repetitive Work
- Improved Data Analysis
- Enhanced Fraud Detection
- Improved Decision Support
- Continuous Monitoring

8 Challenges of artificial intelligence in accounting

- Data Privacy and Confidentiality
- Cybersecurity Risks
- High Implementation Cost
- Lack of Skilled Professionals
- Lack of Explainability
- Ethical Issues
- Reliability of AI Outputs
- Integration with Existing Systems

9 Changing role of accounting professionals

The introduction of AI is changing the nature of accounting work. The traditional role follows the sequence data entry → bookkeeping → reconciliation → reporting → manual analysis, whereas the AI-enabled role follows the sequence AI-assisted processing → data validation → analysis → interpretation → decision support → advisory.

This does not imply that accountants lose significance. Alternatively, their participation may become more focused on tasks that call for human interaction and expert judgment. According to recent research, AI is changing accounting positions rather than merely eliminating the need for accountants.

10 Future prospects of AI in accounting

- Real-Time Accounting

- Continuous Auditing
- Predictive Accounting
- AI-Assisted Tax Compliance
- Intelligent Accounting Assistants
- Explainable AI
- Human–AI Collaboration

Instead of merely considering AI as a replacement, the importance of this human-AI interaction is being emphasized more and more in recent research.

11 Findings of the study

- AI is used in bookkeeping, financial reporting, auditing, fraud detection, taxation, financial analysis, forecasting, and management accounting, among other areas of accounting.
- One of the main advantages of AI and related automation technologies is that they can eliminate tedious manual tasks, freeing up accounting professionals to concentrate on higher-value tasks.
- Large transaction populations can be analyzed by AI to find odd trends that need more research.
- Financial forecasting, financial analysis, and decision assistance can all benefit from machine learning and predictive analytics.
- Important obstacles include data privacy, cybersecurity, confidentiality, ethical issues, explainability, implementation costs, and unreliable results.
- The emergence of ChatGPT and other large language models has expanded AI applications beyond traditional automation towards document analysis, summarisation, research and communication.
- Accounting professionals increasingly require a combination of accounting knowledge, technology awareness, data analytical ability and professional judgment.
- AI-generated outputs should be reviewed and validated where professional, financial, regulatory or ethical judgment is required.
- Technology infrastructure, organizational preparedness, professional responsibilities, and the particular accounting function in question all influence the adoption of AI.
- Research interest in AI, machine learning, RPA, generative AI, LLMs, and explainable AI is growing, according to recent literature.

12 Suggestions and implications

- Basic AI, data analytics, and digital accounting abilities should be included in accounting education and professional training.
- Businesses should set up explicit guidelines for using AI technologies to handle private and financial data.
- When professional judgment, accountability, and ethical responsibility are necessary, AI should be utilized as a decision-support tool.
- Continuous training should be provided to accounting professionals so that they can understand and effectively use emerging technologies.
- Organisations should implement appropriate cybersecurity controls before integrating AI into accounting systems.

- **Organisations should assess AI tools based on:** Accuracy, Security, Reliability, Cost, Explainability, Compatibility, Data protection.
- Accounting professionals should collaborate with IT specialists, data analysts and AI experts to implement suitable AI solutions.
- Professional organisations and organisations should establish guidelines concerning responsible AI use, confidentiality, accountability and transparency.

13 Conclusion

Artificial Intelligence is emerging as an important technology in the transformation of accounting. The present study, based on secondary data, examined its major applications, benefits, challenges and future prospects.

The analysis indicates that AI has considerable potential across bookkeeping, transaction processing, financial reporting, auditing, fraud detection, taxation, financial analysis, forecasting and management accounting. AI can process large volumes of information, automate repetitive activities, identify patterns and provide analytical insights. These capabilities can improve the efficiency and timeliness of accounting activities. At the same time, AI adoption involves important challenges. Data privacy, cybersecurity, confidentiality, implementation costs, explainability, ethical concerns and the reliability of AI-generated outputs require careful attention. AI adoption should therefore not be viewed simply as a technological investment. It also requires organisational preparedness, appropriate governance and professional competence. Consequently, organisations should focus not only on adopting AI technologies but also on developing appropriate infrastructure, data governance, cybersecurity, ethical frameworks and employee capabilities. Overall, Artificial Intelligence represents an important opportunity for the accounting profession. Its effective use will depend not merely on technological capability but on how responsibly organisations and accounting professionals integrate AI with human expertise.

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