

**Artificial Intelligence in Accounting and Financial Decision-Making:
Applications, Risks and Governance**

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Abstract

Artificial intelligence (AI) is increasingly relevant to accounting, auditing, budgeting, forecasting and financial analysis. This conceptual review considers how machine learning, automation and generative AI may support routine processing and decision support while creating new risks related to data quality, explainability, privacy, bias and professional accountability. The paper draws on established technology-adoption literature and professional governance principles. It argues that AI should augment rather than replace professional judgement, particularly where decisions have material financial or legal consequences. Organisations should establish clear controls, human review, access restrictions, audit trails and staff training before deploying AI in finance functions. The paper is a secondary-source conceptual review and does not report original field data.

Keywords: Artificial intelligence; accounting; financial analysis; automation; audit; governance

1. Introduction

Accounting and finance functions depend on accurate information, timely reporting and sound judgement. AI-based systems can classify documents, identify unusual transactions, extract information from invoices, assist with reconciliations and support forecasting. Generative AI can also help draft explanations of financial trends, although its output must be checked against reliable records. These uses may improve speed and consistency, but they do not eliminate the need for professional responsibility.

The central management question is not simply whether AI can perform a task. It is whether the system is appropriate for the task, whether its output can be verified and whether the organisation can control the risks created by automation.

2. Review of Literature

Davis (1989) explains technology acceptance through perceived usefulness and perceived ease of use. Venkatesh et al. (2003) add social influence and facilitating conditions, concepts relevant to employee adoption of AI tools. In finance departments, perceived usefulness may include faster processing and improved

anomaly detection, while facilitating conditions include clean data, integration with existing systems, training and technical support.

AI capability varies by application. Rules-based automation is suited to repetitive, well-defined processes; machine-learning models can identify patterns in large datasets; and generative AI can produce summaries or draft text. These systems have different limitations. A model that performs well on historical data may fail when business conditions change, and a plausible-sounding generated explanation may contain unsupported claims. Accordingly, output validation and governance are as important as technical capability.

3. Objectives of the Study

This paper aims to: (i) identify key AI applications in accounting and financial decision-making; (ii) discuss potential organisational benefits; (iii) analyse operational, ethical and governance risks; and (iv) propose practical controls for responsible adoption.

4. Research Methodology

A descriptive conceptual review approach is used. The paper synthesises established technology-adoption research and general principles of internal control, professional judgement and responsible data use. It does not analyse company-level financial statements or collect primary data. The discussion therefore offers a framework for managers and researchers rather than measured claims about productivity or cost savings.

5. Applications and Analysis

5.1 Transaction processing: AI-enabled document extraction can help read invoices and receipts, while automation can route transactions for approval. These tools may reduce manual data entry. Controls remain necessary for duplicate invoices, unusual tax treatment, missing documentation and incorrect supplier details.

5.2 Fraud and anomaly detection: Pattern-recognition systems can flag transactions that differ from established behaviour. Such alerts are leads for investigation, not proof of wrongdoing. False positives can burden staff, while false negatives may allow errors or fraud to remain undetected. Thresholds should be reviewed periodically and investigated outcomes documented.

5.3 Forecasting and budgeting: Models can analyse historical sales, costs and cash flows to support planning. Their usefulness depends on data quality and assumptions about future conditions. Managers should compare model outputs with business knowledge, scenario analysis and external changes rather than accepting a single forecast as certain.

5.4 Reporting and communication: Generative AI can help prepare first drafts of management commentary, explain accounting concepts or summarise long documents. It should not be trusted to invent citations, figures or accounting treatments. Any generated report must be reconciled with source records and reviewed by an accountable professional.

5.5 Risks and governance: Important risks include confidential-data leakage, unauthorised access, biased outputs, weak explainability, model drift and excessive reliance on automated recommendations. Organisations should classify use cases by risk, limit access to sensitive data, retain logs, test performance and define who approves or rejects outputs. Human oversight should be meaningful, not merely a signature after the fact.

6. Major Findings

The review identifies a balanced set of conclusions. AI is most immediately useful for repetitive, data-intensive and reviewable tasks. Its benefits depend on reliable data, workflow redesign and employee capability. High-impact financial decisions require traceability and human accountability. Generative AI introduces a distinct verification challenge because fluent language can conceal inaccurate content. Finally, governance should be designed before deployment rather than added after an incident.

7. Recommendations

Organisations should begin with a limited pilot and a clearly defined business problem. They should establish baseline measures such as processing time, error rate and cost before claiming improvement. A responsible AI policy should specify approved tools, prohibited data, review requirements, record retention and escalation routes. Finance staff should receive training in data protection, prompt design, verification and model limitations. Internal audit should periodically assess access controls, logs, exception handling and performance. Researchers can conduct comparative case studies to evaluate whether AI improves accuracy and efficiency across different sizes and sectors of businesses.

8. Conclusion

AI can strengthen accounting and financial decision-making when it is introduced with clear objectives, reliable data and proportionate controls. It can assist professionals by processing information and highlighting patterns, but cannot independently assume legal or ethical responsibility. The most sustainable approach combines automation with professional scepticism, transparent governance and human review. Empirical research is needed to establish which applications provide measurable benefits in specific organisational settings.

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