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GENERATIVE AI IN ACCOUNTING: APPLICATIONS, LIMITATIONS, AND RESEARCH IMPLICATIONS

The research summarizes the results of a systematic literature review PRISMA 2020 on the use of Generative Artificial Intelligence (AI), particularly ChatGPT, in accounting practice and research. The analysis encompasses studies published between 2023 and 2025 to evaluate the impact of large language models (LLMs) on efficiency, accuracy, and decision-making in accounting. The review identifies key opportunities for automation and innovation but also highlights the persistent need for ethical oversight, contextual expertise, and empirical validation.

The accounting profession is experiencing a paradigm shift due to the integration of Generative AI technologies such as GPT-3.5 and GPT-4. These models enable automation of repetitive tasks, natural language reporting, and data analysis, thus reshaping the profession toward digital transformation. However, this technological advancement introduces new challenges, including data security risks, reduced human oversight, and ethical concerns. The study investigates how ChatGPT performs in both simple and complex accounting contexts and discusses the theoretical and practical implications for accounting science.

The study follows the PRISMA 2020 framework for systematic literature review. The search covered Scopus, Wiley, and Elsevier databases for peer-reviewed English-language studies from 2023-2025. Inclusion criteria focused on works addressing Generative AI applications in accounting. After screening, four major papers were selected for detailed analysis [3, 1, 2, 4]. Data extraction emphasized methodology, scope, findings, and limitations.

Evidence suggests that ChatGPT enhances efficiency in routine accounting operations, such as data entry, report generation, and invoice management, by automating structured tasks. It also supports auditing, financial reporting, and education by providing instant feedback and analytical summaries. However, all reviewed studies reveal that the model struggles with complex, higher-order accounting activities requiring contextual interpretation, ethical judgment, and regulatory compliance. Tharapos et al. [3] show that ChatGPT performs well only in lower-order cognitive tasks, while Agbon [1] warns against overreliance on “technological solutionism.”

Zhao and Wang [4] and Dong et al. [2] emphasize that although LLMs improve productivity, they often generate “hallucinations,” outdated or biased outputs, and lack real-time adaptability. Furthermore, the literature is dominated by theoretical and educational perspectives rather than empirical, field-based research. Ethical and governance aspects remain insufficiently examined, particularly in relation to data privacy and professional accountability.

Current research is constrained by its conceptual nature and narrow geographic scope, focusing mainly on Western, English-speaking contexts. Studies often rely on simulated or academic environments rather than real-world accounting systems. Moreover, the rapid evolution of AI technologies risks making existing findings quickly obsolete.

Further research should prioritize: 1) empirical studies within accounting firms to assess real-world AI integration; 2) development of domain-specific AI models tailored to accounting standards; 3) longitudinal analysis of how AI affects accountants’ skills and roles; 4) establishment of ethical, privacy, and governance frameworks; 5) comparative studies across diverse regulatory and cultural contexts.

Generative AI holds substantial potential to transform accounting from a routine, transaction-based profession into a strategically analytical one. Nevertheless, the technology cannot yet replace human expertise in judgment-intensive tasks. A balanced approach that integrates AI-driven efficiency with human ethical oversight and contextual reasoning remains essential. Continued research, professional adaptation, and regulatory guidance will determine whether Generative AI becomes a reliable partner or a disruptive challenge in accounting practice.

References

1. Agbon, G. (2024). *A Foucauldian perspective on generative AI and accounting discourse*. *Journal of Management and Accounting Studies*, 12(3), 145-158.
2. Dong, S., Li, H., & Chen, Y. (2024). *Large Language Models in Accounting and Finance: A Scoping Review*. *Accounting and Finance Review*, 8(2), 201-220.
3. Tharapos, M., Lau, K. H., Peszynski, K., Nguyen, L. A., Magdziarz, S., Morton, E., & Duan, S. (2025). *Generative AI in Accounting Education: Evaluating ChatGPT’s Role in Assessment and Skill Development*. *Accounting & Finance*, 65(1), 1-25.
4. Zhao, J., & Wang, X. (2024). *Unleashing efficiency and insights: Exploring the potential applications and challenges of ChatGPT in accounting*. *Journal of Corporate Accounting & Finance*, 35(1), 269-276.