



Analysis of the Technology Acceptance of Artificial Intelligence at Public Accounting Firms

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Abstract. The adoption of artificial intelligence (AI) has transformed various sectors by enhancing operational efficiency and enabling innovative strategies. However, its application in accounting and auditing remains underexplored, particularly in public accounting firms in Indonesia. This study investigates the adoption of AI in Indonesian public accounting firms, focusing on the implementation, benefits, and barriers associated with its use in auditing. A qualitative research design was employed, involving structured interviews with partners from four public accounting firms. Findings reveal variability in AI adoption, with some firms yet to integrate AI into their audit processes due to limited understanding and resources. Others have partially adopted AI for specific tasks, indicating a cautious but progressive approach toward technological integration. The study identifies several barriers to AI adoption, including a lack of skilled personnel, resistance to change, and infrastructural challenges. These findings underscore the need for tailored strategies to enhance AI adoption, such as targeted training programs and technological infrastructure development. This research contributes to the existing literature by providing a comprehensive analysis of the impact of AI on auditing practices in Indonesia and highlights the need for further studies to explore frameworks that can facilitate effective AI integration. The insights from this study are expected to support both theoretical advancements and practical applications in the field of auditing.

Keywords: Artificial Intelligence, Auditing, Technology Acceptance

1 Introduction

Artificial intelligence (AI) has advanced across various sectors due to its ability to enhance operational efficiency and drive innovation. Organizations adopt AI technology to automate routine tasks and use it for strategic approaches in decision-making. The transformation brought by AI is evident in several sectors, such as finance, healthcare, and public administration. Despite the increased adoption of AI across various sectors, its application in accounting and auditing remains limited. AI technology in these fields is generally used to enhance efficiency, accuracy, and decision-making capabilities, thereby reshaping traditional workflows and allowing

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professionals to focus on higher-value tasks. Automation is often employed to reduce repetitive tasks such as data entry, reconciliation, and transaction processing. This automation not only reduces the time spent on these tasks but also minimizes human errors (Ajayi-Nifise et al., 2023; Hashem & Alqatamin, 2021). In auditing, AI transforms the audit process by utilizing advanced algorithms to analyze large data sets, identify anomalies, and assess risks, leading to a more efficient and effective audit process (Al-Sayyed et al., 2021; Fedyk et al., 2022). However, the lack of empirical studies exploring the effectiveness and ethical implications of AI in auditing represents a research gap in the current literature (Vasarhelyi et al., 2023).

The application of AI in public accounting firms, particularly in Indonesia, presents both opportunities and challenges. AI is adopted to enhance audit quality by automating routine tasks and allowing auditors to focus on more complex, judgment-based activities (Kuncoro et al., 2023; Zhang et al., 2020). This capability is crucial in the Indonesian context, where there is a growing demand for high-quality audits due to regulatory pressure and the need for transparency (Chandra & Wondabio, 2022). However, challenges such as a lack of skilled personnel, resistance to change, and ethical concerns pose significant barriers to the successful implementation of AI (Suryani, 2018; Sutapa et al., 2023). Addressing these challenges requires research and strategies, including continuous education and training programs to equip staff with the necessary skills to effectively use AI systems. Nonetheless, research that comprehensively examines AI in audit practices remains underexplored, resulting in a research gap regarding its full potential and implications.

The existing literature indicates a research gap in understanding the comprehensive impact of AI integration in auditing, particularly in public accounting firms in Indonesia. There is a lack of empirical studies and implications that AI can enhance audit quality and efficiency, including ethical considerations and the challenges auditors face in adapting to AI technology (Austin et al., 2021; Kend & Nguyen, 2020). To address this gap, this research proposes an in-depth analysis of the role of AI in auditing in Indonesian public accounting firms, focusing on the benefits and barriers to its adoption. This study aims to fill the gap by providing a comprehensive analysis of the impact of AI on audit practices in Indonesian public accounting firms. The findings of this study are expected to offer valuable insights into the benefits and challenges of AI adoption, contributing to both theoretical and practical advancements in the field.

2 Methodology

This study adopts a qualitative research design to explore the adoption of artificial intelligence (AI) in public accounting firms in Indonesia. A qualitative approach was chosen to gain a deep understanding of the phenomenon of AI adoption, including its benefits and challenges. This approach aligns with the research objective of providing a comprehensive analysis of AI adoption in auditing, where empirical data and insights into human experiences and perspectives are crucial (Creswell & Creswell, 2017). The population in this study includes professionals from public accounting

firms in Indonesia. The study uses a sample of respondents from four partners of public accounting firms in Indonesia. Data will be collected using structured interviews, allowing participants to freely share their experiences and perspectives while providing a framework to ensure all relevant topics are covered. The interview guide will be developed based on existing literature and research questions, focusing on the adoption, benefits, and challenges of AI in auditing. The steps in the research procedure are data preparation, data collection, and data analysis.

3 Result and Discussion

3.1 Result

This research involved four partners in public accounting firms located in Bali. The first informant has been 5 years of audit experience as a partner. The firm has a total of 8 auditors. Based on the discussion, the public audit firm has not yet utilized AI in the audit process and adheres to the auditing standards applicable in Indonesia. The firm is still exploring whether AI can assist in audit work and has not decided whether to use AI in the near future. The factors preventing the adoption of AI are a lack of understanding of how AI can support the work and the limited resources available. When considering the use of AI in the audit process, the firm will take into account cost factors and time efficiency.

The second informant has been 13 years of audit experience and 1 year as a partner. The firm has a total of 14 auditors. Based on the discussion, the public accounting firm has not used AI in the audit process and does not plan to do so, as they are already using computer-assisted auditing with the Audit Tools Linked Archived System (ATLAS) application. However, the firm plans to use AI starting next year. The reasons for not adopting AI include a lack of references on AI use and the need to consider whether AI is suitable for the current conditions in the field.

The third informant has been 12 years of audit experience and 8 years as a partner. The firm has a total of 7 auditors. According to the discussion, the public accounting firm has used AI, but not fully implemented in the audit process. AI is used to assist in the preparation of work contracts and analytical procedures. The firm plans to fully implement AI within the next 5 years. The reason for not fully implementing AI is the limited human resources. Factors considered for adopting AI include the readiness of facilities and infrastructure and the need to enhance human resources through training.

The fourth informant has been 12 years of audit experience and 6 years as a partner. The firm has a total of 5 auditors. Based on the discussion, the public accounting firm has not fully used AI in the audit process, but it has been used to help obtain industry data for analytical processes. However, AI has not been used for substantive audit procedures. The firm plans to implement AI as soon as possible. The reasons for not fully utilizing AI include the lack of staff understanding of AI and clients who still use basic technology. Factors considered for implementing AI

include technological developments and the advancement of AI in the audit profession.

3.2 Discussion

The study results from Bali's four partner public accounting firms serve as a foundation for the discussion of AI's integration into audit procedures. The responses from the informants provided insight into how AI is being used in a public accounting company, the challenges they face, and the things that would motivate them to use AI in audit processes.

Variability in AI Adoption and Utilization. The results show that respondents from public accounting firms varied in their adoption and use of AI. AI has not yet been incorporated into the auditing procedures of the first and second public accounting firms. The main causes of this are limited resources and a lack of knowledge about how AI may be incorporated into their workflows. These factors, which include knowledge gaps and the availability of resources, pose major obstacles to the adoption of new technologies. In a similar vein, the second public accounting companies have not felt required to switch to artificial intelligence (AI) immediately, despite employing computer-assisted audit techniques like the Audit Tools Linked Archived System (ATLAS). The public accounting firm's thoughts on future AI adoption show a cautious attitude toward technology integration, highlighting the need to determine whether AI is appropriate for current audit conditions and make sure integration is in line with the company's particular objectives.

The third and fourth firms have partially adopted AI, demonstrating a more progressive stance on the deployment of new technologies. The third company has started utilizing AI for certain jobs, like creating employment contracts and carrying out analytical processes. This application demonstrates how the business has been progressively incorporating AI. The fourth company has shown how AI may be applied to particular activities by using it to collect industry data for analytical procedures. But neither company uses AI for in-depth auditing processes. This methodical deployment implies that AI can be used piecemeal to help overcome issues with technology and human resources.

Barriers and Considerations for AI Adoption. The findings of this study show that the adoption of AI in auditing in public accounting firms in Indonesia is beginning to emerge, but its implementation is still limited. According to qualitative information obtained from four partners in public accounting firms, the audit process has not fully incorporated artificial intelligence. Particularly concerned with cost and efficiency, a lack of knowledge about how AI might improve audit work, and resource limitations are all impeding the implementation of AI. Additionally, public accounting firms that have not yet adopted AI are still using computer-assisted audit techniques like the Audit Tools Linked Archived System (ATLAS), suggesting that existing technology solutions may be sufficient for some of today's audit functions.

Theoretical Implications. The findings have important implications for theories of innovation and technology adoption in professional services. According to Austin et al. (2021) and Kend & Nguyen (2020), there is a possibility that artificial intelligence (AI) could revolutionize auditing methods by increasing efficiency and accuracy. However, the implementation of AI depends on factors such as organizational readiness, skill availability, and perceived value. This is consistent with ideas like the Technology Acceptance Model (TAM), which holds that perceived utility and simplicity of use are important factors in determining the acceptance of technology.

The study contributes to theoretical discussions by challenging the notion that technology developments, such as AI, are generally adopted in professional environments just for their efficiency benefits (Hashem & Alqatamin, 2021; Vasarhelyi et al., 2023). It highlights the importance of a comprehensive comprehension of contextual issues, including regulation, company culture, and the readiness of human resources. These findings indicate that modifications to current theories may be required to address the differing levels of adoption readiness, and the barriers unique to specific contexts, like Indonesian public accounting firms.

Practical Applications. From a practical standpoint, the research findings can be translated into strategies for enhancing AI adoption in auditing. The study emphasizes the importance of creating comprehensive training programs to prepare staff with the requisite abilities for AI implementation. The identified challenges, including insufficient knowledge, inadequate infrastructure, and reluctance due to cost concerns, highlight the necessity for a slow strategy in AI integration, allowing firms to initially adopt low-cost, high-impact AI tools prior to advancing to more intricate applications (Kuncoro et al., 2023).

Furthermore, the practical consequences involve addressing the gap in AI reference materials and best practices, which can assist firms in evaluating the suitability of AI for their operations. Indonesian firms, driven by regulatory pressures and the necessity for transparency, could utilize AI to improve the quality and precision of audits, particularly in domains at risk of human mistake, such as data reconciliation and anomaly detection (Chandra & Wondabio, 2022).

Integration of Theoretical and Practical Perspectives. The theoretical implications provide a foundation for understanding the effective integration of AI into audit procedures. The successful adoption of AI depends on the integration of the theoretical framework of technology adoption with real field insights, emphasizing the importance of corporate culture, skill development, and readiness. Conversely, practical applications can enhance theoretical achievements by offering insights into the aspects that most significantly affect the adoption process. This dynamic connection improves both theory and practice, ensuring that AI integration in auditing is both theoretically resilient and practically feasible, particularly for emerging countries such as Indonesia, where specific obstacles may emerge.

Implications for Future Research and Practice. These findings suggest several implications for future research and practical applications in the auditing field. Future research could focus on developing frameworks that address specific barriers identified, such as resource limitations and training needs. Practically, these findings highlight the necessity for tailored AI integration strategies that consider the audit firm's specific conditions, including technological readiness and human resource capabilities. Moreover, there is a distinct necessity for educational activities to address knowledge gaps and train audit professionals for advanced AI positions. A future study is anticipated to use quantitative methods with an expanded sample size. These findings enhance the comprehension of AI adoption in auditing and establish a basis for further investigation into the efficient integration of AI technology within the field of auditing.

4 Conclusion

This study investigates the adoption of artificial intelligence (AI) in the audit processes of four public accounting firms in Bali. This research confirms that, despite variety in AI adoption levels among the examined audit firms, there is a growing recognition of AI's capacity to improve audit efficiency and effectiveness. Initially, it was anticipated that AI would substantially enhance audit quality. This aligns with the observations that certain audit firms recently started the utilization of AI for particular functions, including the preparation of work contracts and the execution of analytical procedures. This conclusion highlights the opportunity to enhance the research findings by developing a more comprehensive AI adoption strategy, which encompasses improving human resource capabilities through training and establishing sufficient technology infrastructure. This research presents opportunities for subsequent studies to establish frameworks and practical guidelines that may assist public accounting firms in overcoming the obstacles to AI adoption, including inadequate understanding, resources, and infrastructure. The possibilities for future research also involve further exploration of how AI can be fully integrated into substantive audit procedures, as well as identifying specific benefits and challenges faced by public accounting firms in the context of adopting this advanced technology. This study enhances the comprehension of AI application in auditing and establishes a basis for future innovation and advancement in auditing practices.

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References

- Ajayi-Nifise, A. O., Odeyemi, O., Mhlongo, N. Z., Ibeh, C. V., Elufioye, O. A., & Awonuga, K. F. (2024). The future of accounting: Predictions on automation and AI integration. *World Journal of Advanced Research and Reviews*, 21(2), 399-407.
- Al-Sayyed, S. M., Al-Aroud, S. F., & Zayed, L. M. (2021). The effect of artificial intelligence technologies on audit evidence. *Accounting*, 7(2), 281–288. <https://doi.org/10.5267/j.ac.2020.12.003>.
- Austin, A. A., Carpenter, T. D., Christ, M. H., & Nielson, C. S. (2021). The data analytics journey: Interactions among auditors, managers, regulation, and technology. *Contemporary Accounting Research*, 38(3), 1888–1924.
- Chandra, S., & Wondabio, L. S. (2022). Developing audit manual design for audit of small and medium-sized entities and applying data sharing in cloud to increase audit efficiency. *In ICE-BEES 2021: Proceedings of the 4th International Conference on Economics, Business and Economic Education Science, ICE-BEES 2021, 27-28 July 2021, Semarang, Indonesia* (p. 42). European Alliance for Innovation.
- Creswell, J. W., & Creswell, J. D. (2017). *Research design: qualitative, quantitative, and mixed methods approaches*. Sage publications.
- Fedyk, A., Hodson, J., Khimich, N., & Fedyk, T. (2022). Is artificial intelligence improving the audit process? *Review of Accounting Studies*, 27(3), 938–985. <https://doi.org/10.1007/s11142-022-09697-x>.
- Hashem, F., & Alqatamin, R. (2021). Role of artificial intelligence in enhancing efficiency of accounting information system and non-financial performance of the manufacturing companies. *International Business Research*, 14(12), 65. <https://doi.org/10.5539/ibr.v14n12p65>.
- Kend, M., & Nguyen, L. A. (2020). Big data analytics and other emerging technologies: The impact on the Australian audit and assurance profession. *Australian Accounting Review*, 30(4), 269–282.
- Kuncoro, E. A., Lindrianasari, & Fatmasari, A. (2023). Artificial intelligence and the role of external auditor in Indonesia. *E3S Web of Conferences*, 426. <https://doi.org/10.1051/e3sconf/202342602122>.
- Suryani, A. W. (2018). The supply shortage of accounting graduates in indonesia: the public accounting firms perspective. *KnE Social Sciences*, 3(3), 374. <https://doi.org/10.18502/kss.v3i3.1896>.
- Sutapa, H., Palupiningtyas, D., & Munizu, M. (2023). Analysis of the influence of financial rewards, motivation, job market on career intention as a public accountant. *JEMSI (Jurnal Ekonomi, Manajemen, dan Akuntansi)*, 9(5), 2236-2242.
- Vasarhelyi, M. A., Moffitt, K. C., Stewart, T., & Sunderland, D. (2023). Large language models: An emerging technology in accounting. *Journal of Emerging Technologies in Accounting*, 20(2), 1–10.
- Zhang, Y., Xiong, F., Xie, Y., Fan, X., & Gu, H. (2020). The impact of artificial intelligence and blockchain on the accounting profession. *IEEE Access*, 8, 110461–110477. <https://doi.org/10.1109/ACCESS.2020.3000505>.

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