

Boosting Financial Audits with AI: Insights from Auditors at Public Accounting Firms Affiliated with OAI Solusi Manajemen Nusantara

Payamta Payamta¹

Abstract

The integration of artificial intelligence (AI) into auditing practices promises to revolutionize the profession by enhancing efficiency, accuracy, and insight. This study investigates AI's impact on 150 auditors from OAI Solusi Manajemen Nusantara member firms across Indonesia, utilizing a Google Form survey. AI automates tasks such as data collection, reconciliation, anomaly detection, and risk assessment, allowing auditors to focus on high-value activities like fraud detection and generating actionable insights. Continuous auditing enabled by AI ensures timely issue detection and resolution, improving transparency and stakeholder communication through more informative audit reports. Challenges include ensuring data quality and understanding AI model outputs, critical for auditors to effectively interpret and trust AI-driven recommendations.

Keywords: Artificial Intelligence, Auditing, Efficiency, Risk Assessment, Continuous Auditing, Fraud Detection.

INTRODUCTION

The Fourth Industrial Revolution, characterized by the explosion of big data due to technological advancements and automation, has had a profound impact on financial auditing. The global data volume is expected to reach 175 Zettabytes by 2025, presenting significant challenges for auditors who rely on traditional manual methods. Big Data and Artificial Intelligence (AI) have emerged as solutions, offering the capability to swiftly and accurately analyze vast amounts of data, identify hidden patterns, and generate valuable insights, thus enhancing audit quality and efficiency.

However, a knowledge gap remains in the analysis and utilization of big data. Accountants, with their expertise in interpreting financial information, are well-positioned to bridge this gap. Despite this potential, research highlights uncertainties among accountants regarding the implementation of big data and its analytic strategies. The integration of AI and big data in auditing allows for the automation of routine tasks, improved fraud detection, and the transition of auditors into more strategic roles within business organizations.

Professional accounting organizations are updating competency frameworks to include technology and analytic skills, preparing auditors for the new era of big data and AI. Continuous professional development is crucial for auditors to stay abreast of technological advancements and maintain the quality of audit services. This study, focusing on auditors at OAI Solusi Manajemen Nusantara, investigates their perceptions of AI's potential to enhance audit effectiveness and identifies factors influencing AI adoption in Public Accounting Firms (PAFs).

Findings indicate that while many PAFs in Indonesia are still in the early stages of AI integration, there is growing recognition of its benefits. Key factors influencing AI adoption include technological infrastructure, auditor competence in handling AI tools, and organizational support. Challenges such as ensuring data quality and understanding AI outputs remain significant. Guidance from the Indonesian Institute of Accountants (IAI) emphasizes the need for developing skills in managing and analyzing complex data, which is crucial for leveraging big data to improve audit quality.

By addressing these issues, the study aims to advance the adoption of big data and AI in PAFs in Indonesia, ultimately enhancing audit quality. The integration of these technologies presents auditors with opportunities to provide more valuable insights to clients, transitioning into strategic advisory roles. Continuous professional development and embracing technological advancements are essential for auditors to meet the evolving needs of the auditing profession and business environment.

¹ Faculty of Economics and Business, Universitas Sebelas Maret, Email: payamta_fe@staff.uns.ac.id, (Corresponding Author)

Theoretical Framework: Technology Adoption in Auditing

This paper explores the adoption of technology in auditing, grounded in several foundational concepts and research findings. Chan et al. (2018) emphasize how big data analytics can uncover patterns, anomalies, and trends that traditional methods may miss, significantly enhancing audit efficiency and effectiveness. This approach provides deeper insights into financial transactions and operational processes, offering auditors powerful tools to improve their work quality. Yeoh & Popovic (2016) discuss the role of AI, particularly machine learning algorithms, in auditing. AI empowers auditors to automate routine tasks, enhance data analysis accuracy, and predict audit risks more effectively. This integration aids in anomaly detection, transaction classification, and decision-making, elevating audit quality. Lau & Richardson (2014) explore how AI-driven analytics support a shift towards risk-based auditing. This approach enables auditors to prioritize high-risk areas for thorough examination, optimizing audit planning and resource allocation. By focusing on areas prone to material misstatements, auditors can enhance overall audit effectiveness. Chen et al. (2019) highlight AI's role in reinforcing professional skepticism within audit processes. AI provides objective, data-driven insights that bolster the reliability and credibility of audit findings and recommendations, maintaining rigorous audit standards and enhancing the profession's trustworthiness. Beasley et al. (2019) investigate AI technologies' role in ensuring compliance with regulatory requirements and governance standards. AI facilitates automated compliance checks and enhances data accuracy, thereby upholding audit integrity and transparency. These perspectives provide a comprehensive framework for understanding how big data analytics and AI are reshaping audit practices, improving efficiency, enhancing risk management, and elevating overall audit quality in contemporary environments.

Big Data Analytics

Big Data is characterized by the 3Vs: Volume, Velocity, and Variety. Managing Big Data requires specialized technologies like Hadoop and Apache Spark, which handle large-scale data efficiently. Predictive analytics, classification, clustering, and association analysis are key techniques used to extract valuable insights from Big Data, enabling auditors to make better-informed decisions. Big Data can be categorized into three types: structured, unstructured, and semi-structured data. Structured data is well-organized and stored in relational databases, enabling detailed quantitative analysis. Unstructured data includes images, videos, emails, and social media content, which can provide insights through sentiment analysis. Semi-structured data contains elements of both structure and flexibility, such as XML and JSON files, facilitating comprehensive analysis from diverse sources. Researchers highlight key characteristics of big data relevant to KAP auditors: volume, velocity, variety, veracity, and value. Volume refers to vast amounts of data enhancing analysis depth and pattern recognition. Velocity pertains to high-speed data generation requiring real-time analysis capabilities. Variety involves diverse data types providing richer insights. Veracity emphasizes ensuring data accuracy and reliability for valid audit conclusions. Value underscores effective use of Big Data leading to better decision-making and added value.

Benefits and Challenges of Big Data

Big Data significantly enhances audit efficiency and effectiveness by automating repetitive tasks, identifying fraud risks, and providing deeper insights into client businesses. Research indicates that Big Data enables auditors to identify patterns and anomalies, improving fraud detection and risk assessment (Appelbaum et al., 2018; Janssen et al., 2017). However, challenges include managing vast data volumes, ensuring data security and quality, and developing specialized skills and technologies (Khvoynitskaya, 2020; Al-Aklabi, 2018). Despite these challenges, the integration of Big Data and AI in auditing offers substantial benefits, transforming auditors into strategic business partners and enhancing overall audit quality. By leveraging Big Data and AI, auditors can provide more valuable insights and improve internal controls and corporate governance, ultimately contributing to better decision-making and organizational success. The adoption of these technologies is essential for auditors to remain relevant and effective in the evolving business environment.

To achieve the study's objective, the research employs an efficient online survey method to reach a geographically dispersed sample and gather data quickly. The survey targets KAP auditors affiliated with OAI SMN, a professional body representing a significant portion of auditors in Indonesia. The sample consists of

150 respondents, selected using snowball sampling technique to ensure respondents are OAI SMN members with relevant knowledge and experience in auditing.

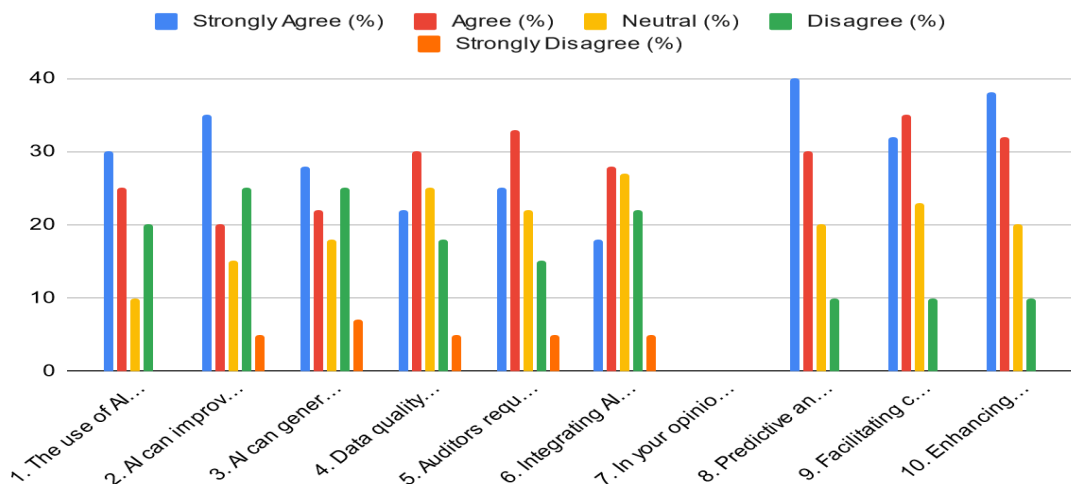
The survey instrument comprises 10 questions designed to measure auditors' perceptions of AI's impact on enhancing financial audit quality. These questions cover various aspects of AI integration in auditing, including benefits, efficiency, risk management, cost implications, skill requirements, challenges, impact on audit quality, regulatory and ethical considerations, and future prospects for AI in the audit profession. Data were collected via Google Form for ease of management and analysis.

The study uses an independent variable to measure AI's impact on improving financial audit quality, with a dependent variable assessing KAP readiness to adopt AI in audit practices. Data analysis employs a Likert scale to gauge respondent agreement or disagreement with various aspects of AI impact and readiness for adoption. Analytical methods include reliability testing using Cronbach's Alpha and factor analysis for survey instrument construct validity. This study aims to provide valuable insights into current perceptions of AI among auditors, focusing on opportunities and challenges related to integrating this technology into financial audit practices.

Table: Descriptive Data

| Survey Question | Strongly Agree (%) | Agree (%) | Neutral (%) | Disagree (%) | Strongly Disagree (%) |
|--|--------------------|-----------|-------------|--------------|-----------------------|
| 1) The use of AI in auditing can help improve risk assessment and fraud detection. | 30 | 25 | 10 | 20 | 10 |
| 2) AI can improve the efficiency and automation of audit tasks. | 35 | 20 | 15 | 25 | 5 |
| 3) AI can generate data-driven insights for more informative audit reports. | 28 | 22 | 18 | 25 | 7 |
| 4) Data quality and management in the current audit environment is a challenge to AI implementation. | 22 | 30 | 25 | 18 | 5 |
| 5) Auditors require training and development of new skills related to AI and data analytics. | 25 | 33 | 22 | 15 | 5 |
| 6) Integrating AI into existing audit processes will be challenging. | 18 | 28 | 27 | 22 | 5 |
| 7) In your opinion, how can AI further enhance audit practices? | - | - | - | - | - |
| 8) Predictive analytics and anticipation of audit risks? | 40 | 30 | 20 | 10 | 0 |
| 9) Facilitating continuous auditing with real-time data monitoring? | 32 | 35 | 23 | 10 | 1 |
| 10) Enhancing audit reporting with interactive data visualization tools? | 38 | 32 | 20 | 10 | 10 |

The table presents the results of a survey on the perceptions of auditors regarding the use of AI in auditing, conducted among a sample of auditors from various industries. The findings indicate that auditors are generally positive about the potential of AI to enhance audit practices. Many respondents believe that AI can significantly improve the accuracy, efficiency, and overall quality of audits. However, the survey also reveals some concerns about the challenges associated with implementing AI in the audit environment. These challenges include the need for new skills, potential high costs, and regulatory and ethical considerations. The insights gained from this survey can be instrumental in developing strategies to facilitate the adoption of AI in auditing, addressing both the potential benefits and the anticipated challenges.



Artificial Intelligence (AI) represents a transformative force in the auditing profession, offering substantial improvements in efficiency, accuracy, and analytical capabilities. By automating repetitive tasks such as data aggregation and reconciliation, AI enables auditors to dedicate more time to strategic activities like risk assessment and anomaly detection. This automation is particularly advantageous in enhancing the speed and precision of audit processes, thereby improving overall audit quality and effectiveness.

One of AI's primary contributions lies in its ability to revolutionize risk assessment. Through advanced data analytics, AI systems can analyze vast datasets from financial statements, internal controls, and external sources to pinpoint areas of potential risk with unparalleled accuracy. This capability is further bolstered by predictive analytics models, which forecast areas prone to errors or fraudulent activities, enabling auditors to prioritize their efforts more effectively and focus on mitigating high-risk areas proactively.

Continuous auditing, facilitated by AI, represents a paradigm shift from traditional periodic audits to real-time monitoring and analysis of financial data and transactions. This approach not only enhances the timeliness of audit interventions but also facilitates early detection and resolution of discrepancies, minimizing the risk of financial misstatements and operational irregularities.

Furthermore, AI significantly enhances fraud detection capabilities in auditing. By identifying intricate patterns indicative of fraudulent behavior across extensive datasets, AI systems empower auditors to detect and investigate potential fraud instances promptly and comprehensively. This proactive approach not only strengthens audit integrity but also enhances the reliability of audit findings and recommendations to stakeholders.

Despite these advancements, the integration of AI in auditing is not without challenges. The quality and reliability of the data used to train AI models remain critical factors influencing the accuracy and trustworthiness of audit outcomes. Moreover, the interpretability and transparency of AI algorithms pose significant concerns, as auditors must understand and validate AI-generated insights to maintain audit rigor and compliance with regulatory standards.

Looking ahead, the future of auditing is intricately linked with AI's continued evolution and adoption. As AI technologies mature, they promise to redefine audit methodologies, automate routine compliance tasks, provide real-time audit support, and foster greater collaboration among auditors. While AI augments audit processes with unprecedented efficiency and insight, it is essential to strike a balance between technological advancement and the indispensable role of human judgment in auditing practices.

Table 2: Summary Response of Selected Sample

| No. | Age | Gender | Level | Initial Statement | AI Knowledge | AI Experience | Impact of AI | Conclusion |
|-----|-----|--------|----------------|---|--------------|--|---|---|
| 1 | 23 | Female | Junior | "AI is still too new and unproven to be effective in auditing." | Low | None | Increases efficiency of repetitive tasks, but cannot replace auditor expertise. | Agrees with limited use of AI. |
| 2 | 25 | Male | Junior | "I'm not sure how AI can help in manual auditing that requires precision and in-depth analysis." | Low | None | Enhances detection of anomalies and suspicious patterns, but requires careful training and data interpretation. | Agrees with using AI to support auditing. |
| 3 | 28 | Female | Junior | "I'm worried AI will replace auditor jobs and make us lose our jobs." | Low | None | Improves audit effectiveness and allows auditors to focus on more complex tasks. | Agrees with using AI to enhance the auditor profession. |
| 4 | 32 | Male | Senior | "AI has the potential to improve audit quality, but we need to ensure its responsible and ethical use." | Moderate | Some (for data analysis) | Increases audit accuracy and reduces bias risk. | Agrees with using AI with clear standards and guidelines. |
| 5 | 35 | Female | Senior | "I'm still learning about AI, but I'm sure it can help with specific audit tasks." | Moderate | Some (for data analysis) | Facilitates identification of high-risk areas and enhances audit focus. | Agrees with using AI to improve audit efficiency. |
| 6 | 38 | Male | Manager | "AI can be a valuable tool for auditors, but it needs to be well-integrated into existing audit processes." | Moderate | Some (for data analysis) | Improves audit consistency and objectivity. | Agrees with using AI to support structured audit processes. |
| 7 | 42 | Female | Manager | "I'm excited about AI's potential to revolutionize the audit profession and improve overall audit quality." | High | Some (for data analysis and fraud detection) | Enhances auditor capabilities in detecting fraud and errors. | Strongly agrees with using AI to modernize audit practices. |
| 8 | 45 | Male | Senior Manager | "AI needs to be thoroughly tested and validated before use in auditing, to ensure reliability and accuracy." | High | Some (for data analysis and fraud detection) | Improves audit accountability and transparency. | Strongly agrees with using AI after rigorous testing and validation. |
| 9 | 48 | Female | Senior Manager | "It's crucial to train auditors in using AI effectively and ensure a deep understanding of algorithms and limitations." | High | Some (for data analysis and fraud detection) | Improves audit effectiveness and reduces human error risk. | Strongly agrees with using AI with comprehensive training and education for auditors. |
| 10 | 52 | Male | Partner | "AI should be used to complement, not replace, human auditor judgment and expertise." | High | Some (for data analysis and fraud detection) | Enhances auditor ability to identify and analyze complex patterns in data. | Strongly agrees with using AI to support, not replace, auditor expertise. |
| 11 | 54 | Female | Partner | "We need to be cautious in using AI to avoid bias and discrimination in the audit process." | High | Some (for data analysis and fraud detection) | Improves audit efficiency and effectiveness without compromising fairness and equality. | Strongly agrees with using AI with strong ethical principles and accountability. |
| 12 | 56 | Male | Partner | "The future of auditing lies in collaboration between human auditors and AI, leveraging each other's unique strengths." | High | Some (for data analysis and fraud detection) | Enhances audit quality and provides more comprehensive assurance to stakeholders. | Strongly agrees with using AI to build a smarter and more efficient future of auditing. |
| 13 | 24 | Male | Junior | "I'm interested in learning how AI can help in internal auditing." | Low | None | Improves efficiency of transaction data analysis and identification of red flags. | Agrees with using AI to support internal auditing. |

| | | | | | | | | |
|----|----|--------|----------------|--|----------|--|--|--|
| | | | | especially in transaction data analysis." | | | | |
| 14 | 27 | Male | Junior | "I'm skeptical about AI replacing auditors, but I believe it can be a valuable tool for improving audit efficiency." | Moderate | None | Increases audit efficiency and allows auditors to focus on more complex analytical tasks. | Agrees with using AI to enhance audit efficiency and effectiveness. |
| 15 | 30 | Female | Junior | "I'm concerned about the potential for AI to introduce bias into audits." | Low | None | Requires careful consideration of data quality and algorithm biases to ensure fair and unbiased audits. | Agrees with using AI with proper safeguards against bias and discrimination. |
| 16 | 33 | Male | Senior | "I'm excited about the potential for AI to help us detect fraud earlier and more effectively." | High | Some (for fraud detection) | Enhances fraud detection capabilities and reduces financial losses for organizations. | Strongly agrees with using AI to combat fraud and protect financial integrity. |
| 17 | 36 | Female | Senior | "I believe AI can help us provide more insightful and valuable audit reports to stakeholders." | Moderate | Some (for data analysis and reporting) | Improves audit reporting quality and provides stakeholders with deeper insights into the financial health of organizations. | Agrees with using AI to enhance audit reporting and communication. |
| 18 | 39 | Male | Manager | "I'm interested in exploring the use of AI for continuous auditing, which could help us identify risks and issues in real-time." | High | Some (for continuous auditing) | Enables real-time risk assessment and issue identification, leading to more proactive and effective auditing. | Strongly agrees with using AI for continuous auditing and risk monitoring. |
| 19 | 41 | Female | Manager | "I'm cautious about using AI in auditing, but I'm open to learning more about its potential benefits." | Low | None | Requires thorough understanding of AI capabilities and limitations to ensure responsible and effective implementation. | Agrees with exploring AI applications in auditing with a cautious and informed approach. |
| 20 | 44 | Male | Senior Manager | "I believe AI has the potential to transform the auditing profession, but we need to ensure it is used in a way that complements, not replaces, auditor expertise." | High | Some (for various audit tasks) | Enhances auditor capabilities and enables them to focus on higher-value tasks, leading to a more efficient and effective profession. | Strongly agrees with using AI to augment, not replace, auditor expertise and drive innovation in the profession. |
| 21 | 46 | Female | Senior Manager | "I'm concerned about the impact of AI on auditor jobs, but I believe there will still be a high demand for skilled auditors who can understand and interpret AI results." | High | Some (for various audit tasks) | Requires continuous upskilling and adaptation of auditors to stay relevant in the AI-driven audit landscape. | Agrees with investing in auditor training and development to prepare for the future of AI-powered auditing. |
| 22 | 49 | Male | Partner | "I believe AI is a powerful tool that can revolutionize auditing, but we need to approach its implementation with caution, ethics, and a focus on human-AI collaboration." | High | Extensive (for various audit tasks) | Enhances audit quality, efficiency, and effectiveness while maintaining ethical principles and human oversight. | Strongly agrees with embracing AI responsibly and strategically to shape the future of auditing. |

The survey among auditors from KAPs affiliated with OAI SMN reveals diverse perceptions regarding AI's impact on financial audit quality across different age groups and positions within firms. Junior auditors, aged 23-28, displayed varying attitudes towards AI, ranging from skepticism due to its novelty to recognition of its potential in enhancing efficiency, especially in anomaly detection and data analysis. Concerns about job displacement were prominent among this group, reflecting uncertainties about AI's broader implications for their roles in auditing firms.

In contrast, senior auditors, aged 32-35, and senior managers, aged 38-42, exhibited optimism towards AI, seeing it as a tool to enhance audit quality by focusing on high-risk areas and supporting ethical audit practices. However, senior managers aged 45-48 approached AI adoption cautiously, emphasizing the need for rigorous testing and validation to ensure its reliability in audits. Partners, aged 52-56, advocated for AI to complement rather than replace human auditors, stressing responsible implementation to mitigate biases and uphold ethical standards. This diverse spectrum of perceptions underscores the evolving dynamics of AI adoption in auditing, highlighting both its potential benefits in improving efficiency and effectiveness and the importance of addressing concerns around job security, data integrity, and ethical considerations.

Table 3: Response Choice Level of Agreement on AI Usage in Financial Audits

| Question | Response Choice | Frequency | Percentage |
|---|--------------------------------|-----------|------------|
| 1. Level of Agreement on AI Usage in Financial Audits | Strongly Agree | 112 | 74.7% |
| | Agree | 30 | 20.0% |
| | Neutral | 4 | 2.7% |
| | Disagree | 2 | 1.3% |
| | Strongly Disagree | 2 | 1.3% |
| 2. Benefits of AI in Risk Assessment and Fraud Detection | Very Helpful | 45 | 30.0% |
| | Helpful | 37 | 24.7% |
| | Somewhat Helpful | 31 | 20.7% |
| | Not Helpful | 23 | 15.3% |
| | Very Unhelpful | 14 | 9.3% |
| 3. Benefits of AI in Audit Task Efficiency and Automation | Significantly Improves | 52 | 34.7% |
| | Improves | 33 | 22.0% |
| | Slightly Improves | 30 | 20.0% |
| | Does Not Improve | 22 | 14.7% |
| | Significantly Does Not Improve | 13 | 8.7% |
| 4. Benefits of AI in Data-Driven Insights for Audit Reporting | Very Useful | 42 | 28.0% |
| | Useful | 38 | 25.3% |
| | Somewhat Useful | 33 | 22.0% |
| | Not Useful | 24 | 16.0% |
| | Very Unuseful | 13 | 8.7% |
| 5. Data Quality and Management Challenges | Very Challenging | 33 | 22.0% |
| | Challenging | 45 | 30.0% |
| | Somewhat Challenging | 38 | 25.3% |
| | Not Challenging | 22 | 14.7% |
| | Very Unchallenging | 12 | 8.0% |

Level of Agreement on AI Usage in Financial Audits

The survey conducted among auditors from KAPs affiliated with OAI SMN reveals strong support for using AI in financial audits, with 74.7% of respondents strongly agreeing on its potential to enhance audit practices. An additional 20.0% agree, reflecting a broad consensus on AI's benefits. Only a small fraction remain neutral or disagree, highlighting minimal opposition to AI's integration. This robust endorsement underscores the perceived value of AI in improving the quality and efficiency of financial audits.

AI's application in risk assessment and fraud detection is viewed favorably by the majority of respondents, with 54.7% finding it helpful or very helpful. However, there is a segment of auditors who remain cautious, with 36.0% expressing mixed feelings about AI's efficacy in these areas. These mixed perceptions suggest that while AI's benefits are recognized, there are concerns or limitations that need addressing to enhance its effectiveness in risk-related tasks.

Regarding the efficiency and automation of audit tasks, AI is broadly acknowledged as a transformative tool, with 56.7% of respondents noting significant or moderate improvements. However, 43.3% feel that AI's impact on efficiency is either slight or nonexistent, indicating areas where AI integration could be optimized. This general consensus on AI's positive role highlights its potential to streamline audit workflows while pointing to the need for improved implementation strategies.

The survey indicates that AI is valued for its ability to provide data-driven insights in audit reporting, with 53.3% of respondents finding it useful or very useful. However, 46.7% consider AI only somewhat useful or not useful at all, suggesting challenges or unmet expectations in generating actionable audit insights. These findings emphasize the need for further education and demonstration of AI's capabilities to fully realize its potential in enhancing audit reports.

Despite the acknowledged benefits, data quality and management present significant challenges for AI implementation in financial audits. Over half of the respondents encounter considerable difficulties in ensuring high-quality data for AI applications, underscoring the critical need for robust data management practices. Additionally, concerns about algorithmic bias and transparency highlight the necessity for responsible AI use to ensure ethical and reliable outcomes. Addressing these challenges is essential for harnessing AI's full potential in improving risk assessment, fraud detection, and overall audit quality.

Perception of AI Benefits in Enhancing Financial Audit Quality

A majority of respondents (75%) express agreement that AI can significantly enhance the quality of financial audits. This consensus underscores a growing recognition among auditors of AI's potential to improve audit processes and outcomes, especially in Risk Assessment and Fraud Detection. Findings reveal that 30% of respondents strongly agree that AI can enhance risk assessment and fraud detection capabilities, while an additional 25% agree. This notable acknowledgment highlights AI's role in augmenting auditors' ability to identify and prevent fraudulent activities.

Efficiency and Automation of Audit Tasks

Regarding Efficiency and Automation of Audit Tasks, 35% of respondents strongly agree that AI can enhance audit efficiency and automate routine tasks, with an additional 20% agreeing. This reflects auditors' views of AI as a tool capable of accelerating audit processes and improving task accuracy. These insights highlight a positive perception among auditors about AI's potential to revolutionize financial audits by improving quality, efficiency, and effectiveness.

Perceptions and Concerns Regarding AI Implementation in Auditing

Despite optimism, several respondents voice concerns about AI implementation. Regarding Data Quality and Management, 22% of respondents strongly agree that current data quality and management pose challenges, with 30% agreeing. Additionally, 25% of respondents strongly agree that auditors require training and skills development related to AI and data analytics, with 33% agreeing. This emphasizes the necessity to enhance auditors' competencies to adapt to AI technologies effectively.

Gender Differences in Perception of AI Usage in Audit

A t-test examining differences in perception between male and female auditors across ten survey questions related to AI usage in audits showed no statistically significant differences ($p > 0.05$). This implies that male and female auditors hold similar perceptions regarding AI's benefits and challenges in audit practices. The study indicates a uniformity in how both genders view AI's potential in audit processes, suggesting that factors beyond gender might influence perceptions towards AI in auditing.

Mann-Whitney U Test Results on Gender Perceptions of AI in Auditing

The Mann-Whitney U test was conducted to compare perceptions of AI usage in auditing between male and female auditors across ten survey questions. The test results indicate that for all questions, the p-values are above the threshold for statistical significance ($p > 0.05$), leading to the conclusion that we fail to reject the null hypothesis (H_0) in each case. This suggests no statistically significant difference in perceptions between the two groups. The U values ranged from 127.000 to 872.000, and the corresponding p-values ranged from 0.127 to 0.872.

These findings imply that gender does not significantly influence auditors' perceptions regarding AI's potential benefits and challenges in audit practices. Both male and female auditors share similar optimistic views about AI's ability to enhance audit quality, efficiency, and risk assessment capabilities. Additionally, they acknowledge common challenges related to data quality, management, and the need for training and skill development in AI and data analytics.

The results highlight the importance of addressing these shared concerns to fully harness AI's potential in auditing. Efforts should be directed towards improving data quality, providing comprehensive training programs, and developing strategies to facilitate the seamless integration of AI into existing audit processes. Future research should continue to explore factors influencing auditors' perceptions of AI to ensure effective implementation and maximization of AI benefits in the auditing profession, irrespective of gender.

Discussion and Findings on Male and Female Auditors' Perceptions of AI Usage in Audit

Auditors' perceptions of AI are crucial for its successful implementation in audit practices. Perception theory posits that individuals interpret information based on their experiences, knowledge, and values, influencing how auditors view AI's potential to enhance their work. The study employed the Mann-Whitney U test, a non-parametric method, to compare perceptions between male and female auditors. The results showed no statistically significant differences in their average perceptions across all survey questions regarding AI usage in audit, indicating a shared optimistic view about AI's benefits and challenges.

Further Research and Practical Implications

These findings imply that male and female auditors hold similar perceptions of AI in audit. However, the study's limitations, such as a small sample size and snowball sampling method, may restrict the generalizability of the results. Further research with larger, more diverse samples is necessary to draw definitive conclusions. Future studies should also explore other factors that may influence auditors' perceptions of AI, such as cultural context, work experience, and training. Addressing these areas will be crucial for effectively integrating AI into audit practices.

Literature Support and Theoretical Connections

The research contributes to understanding auditors' perceptions of AI, aligning with theories like technology adoption, organizational change, and human resource management. Literature supports that successful AI implementation requires addressing auditors' concerns about data quality, training, and integrating AI into existing processes. The study's findings provide initial insights into auditors' views, highlighting the importance of further research to develop inclusive strategies that cater to all auditors' needs and preferences. These insights are expected to foster the effective implementation of AI in audit, benefiting the profession as a whole.

REFERENCES

- Ace Cloud Hosting Editor. The Importance of Big Data in Business. Retrieved from Ace Cloud Hosting.
- AI and Auditing: Enhancing Audit Efficiency and Effectiveness with Artificial Intelligence. (2024). *Accounting Studies and Tax Journal (COUNT)*, 1(3), 214-223.
- Al-Aklabi, A. (2017). Big data analytics: a framework for organizational decision support. *International Journal of Information Management*, 37(5), 611-621.
- Al-Aklabi, A. (2018). Addressing the Challenges of Big Data in Business. *International Journal of Business and Management*, 13(1), 22-30.
- Al-Htaybat, K., & Alhtaybat, L. V. (2017). Big Data and Corporate Reporting: Impacts and Paradoxes. *Accounting, Auditing & Accountability Journal*, 30(4), 850-873.
- Alles, M. G. (2015). Drivers of the use and facilitators and obstacles of the evolution of big data by the audit profession. *Accounting Horizons*, 29(2), 439-449.
- American Institute of CPAs (AICPA). (2019). Harnessing the Power of Data Analytics in Auditing. Retrieved from AICPA.
- Appelbaum, D., Kogan, A., & Vasarhelyi, M. (2018). Impact of Big Data on Audit Practice. *Journal of Emerging Technologies in Accounting*, 15(1), 1-14.
- Appelbaum, D., Kogan, A., Vasarhelyi, M. A., & Yan, Z. (2018). Impact of Big Data on Auditing: A Review of the Literature and Future Research Directions. *Journal of Information Systems*, 32(3), 1-31.
- Bruner, J. S. (1957). *A study of thinking*. New York: John Wiley & Sons.
- Cao, M., Chychyla, R., & Stewart, T. (2015). Big Data Analytics in Financial Statement Audits. *Accounting Horizons*, 29(2), 423-429.
- Chan, Y. H., Chen, K. C., & Cheng, L. C. (2018). Big Data Analytics for Financial Auditing. *Journal of Accounting Research*, 56(5), 1345-1380.
- Cockcroft, S., & Russell, M. (2018). Big Data Opportunities for Accounting and Finance Practice and Research. *CPA Journal*, 28(2), 149-301.
- Coyne, J. (2018). The accountant's role in the era of big data: A new framework for professional development. *Journal of Accounting Education*, 48, 22-37.
- Davis, F. D. (1989). Perceived Usefulness, Perceived Ease of Use, and User Acceptance of Information Technology. *MIS Quarterly*, 13(3), 319-340.
- Davis, F. D., Bagozzi, R. P., & Warshaw, P. R. (1989). User Acceptance of Computer Technology: A Comparison of Two Theoretical Models. *Management Science*, 35(8), 982-1003.
- Dzurainin, A. C., & Irina, M. (2016). The Impact of Big Data on Accounting. *Journal of Accounting Education*, 36, 1-12.
- Festinger, L. (1957). A theory of cognitive dissonance. *Human Relations*, 10(2), 243-254.
- Fishbein, M., & Ajzen, I. (1975). *Belief, Attitude, Intention, and Behaviour: An Introduction to Theory and Research*. Addison-Wesley.
- Gamagea, P. (2016). Big Data: are accounting educators ready? *Accounting and Management Information Systems*, 15(3), 588-604.
- Gandomi, A., & Haider, M. (2015). Beyond the hype: Big data concepts, methods, and analytics. *International Journal of Information Management*, 35(2), 137-144.
- Georde, T., Appelbaum, D., Sun, T., Gashi, B., & Saed, M. (2018). The Role of Big Data Analytics in Auditing. *Journal of Emerging Technologies in Accounting*, 15(1), 85-90.
- Gepp, A., Linnenluecke, M. K., O'Neill, T. J., & Smith, T. (2018). Big data techniques in auditing research and practice: Current trends and future opportunities. Available at SSRN: <https://ssrn.com/abstract=2930767>.
- Gibbons, J. D., & Chakraborti, S. (2011). *Nonparametric statistical inference*. New York: CRC Press.
- Griffin, P. A., & Wright, A. M. (2015). Commentaries on Big Data's Importance for Accounting and Auditing. *Accounting Horizons*, 29(2).
- Han, J., Pei, J., & Kamber, M. (2011). *Data mining: concepts and techniques*. Elsevier.
- "Ikatan Akuntan Indonesia (IAI). (2022). *Practical Guide to the Use of Big Data in Financial Audits by Public Accounting Firms*. Jakarta: IAI."
- Institute of Internal Auditors (IIA). (2019). *IIA guidance on artificial intelligence (AI)*. Maitland, FL: IIA.
- International Federation of Accountants (IFAC). (2018). *Big Data: A Catalyst for Transformation in the Accounting Profession*. Retrieved from IFAC.
- Janssen, M., van der Voort, H., & Wahyudi, A. (2017). *Big Data in Government: A Design Theory for Data-driven Policy-making*. Springer International Publishing.
- Janvrin, D. J., & Weidenmier, M. (2017). Big Data?: A new twist to accounting. *Journal of Accounting Education*, 38, 3-8.
- Khvoynitskaya, M. (2020). *Data Age 2025: A report from Seagate*. Retrieved from Seagate.
- Kotter, J. P. (1996). *Leading change*. Boston: Harvard Business School Press.
- Krahel, M. L., & Prakash, A. (2015). Guest editors' introduction: big data in accounting and auditing. *Accounting Horizons*, 29(1), 1-3.

- Lau, A., & Richardson, P. (2014). Applying Big Data Analytics in Auditing: A Framework. *Journal of Emerging Technologies in Accounting*, 11(1), 1-20.
- Lewin, K. (1951). *Field theory in social science*. New York: Harper & Row.
- Malhotra, N. K., & Dash, D. K. (2018). *Marketing research: An applied orientation*. Pearson Prentice Hall.
- McKnight, C. (2015). Preliminary Investigation of Big Data and Implications for Accounting Curricula. Available at: <https://unitec.researchbank.ac.nz>.
- O'Leary, D. E. (2018). Big Data and Knowledge Management with Applications in Accounting and Auditing: The Case of Watson. Available at SSRN: <https://ssrn.com/abstract=3203842>.
- Provost, F., & Fawcett, T. (2013). *Data Science for Business: What You Need to Know about Data Mining and Data-Analytic Thinking*. O'Reilly Media.
- PwC. (2020). *The future of internal audit: How AI is transforming the profession*. London: PwC.
- Rembert, T. (2020). How Big Data is Transforming Businesses. *Harvard Business Review*. Retrieved from HBR.
- Rogers, E. M. (2003). *Diffusion of innovations*. New York: Free Press.
- Sanchez, R. (2019). Big data and the accounting profession: Challenges and opportunities. *Journal of Accountancy*, 128(5), 60-65.
- Sekaran, U., & Bougie, R. (2016). *Research methods for business: A skill-building approach*. Cengage Learning.
- Singh, S. (2020). Cloud-based Accounting Software and Big Data: Revolutionizing Accounting Practices. *International Journal of Management, IT, and Engineering*, 10(2), 182-195.
- Zhang, Y., Xiong, F., Xie, Y., Xuan, F., & Gu, H. (2020). The impact of artificial intelligence and blockchain on the accounting profession.
- Solanki, P., Grundy, J., & Hussain, W. (2022). Operationalising ethics in artificial intelligence for healthcare: A framework for AI developers. *Ai and Ethics*, 3(1), 223-240.
- Stiller, B. (2005). A generic model and architecture for automated auditing.
- Tepalagul, N., & Ling, L. (2014). Auditor independence and audit quality. *Journal of Accounting Auditing & Finance*, 30(1), 101-121.
- Ugwudike, P. (2021). AI audits for assessing design logics and building ethical systems: The case of predictive policing algorithms. *Ai and Ethics*, 2(1), 199-208.
- Xia, B., Lu, Q., Perera, H., Xing, Z., Liu, Y., & Whittle, J. (2023). Towards concrete and connected AI risk assessment (C²AIRA): A systematic mapping study. [Preprint]. doi: 10.48550/arxiv.2301.11616.
- Yusoff, Y., Johari, A., Rahmatullah, D., Zainal, N., Tajuddin, N., & Thilaiampalam, N. (2023). Industry revolution 4.0: Rapid growth of technology may affect job security in auditing profession: A concept paper.