Artificial Intelligence (AI) in Financial Audit Services as Peril or Prize: Case Study in one of the Big Four Accounting Firm in Surabaya

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ABSTRACT
The study explores the revolutionary impact of Artificial Intelligence (AI) technology in the financial audit process, focusing on the collaboration between auditors and AI. Using a qualitative approach and interpretive paradigm, the research incorporates interviews with auditors from Big Four accounting firms and document analysis of relevant literature. Findings reveal that AI technologies, such as Machine Learning and Robotic Process Automation applied in customized AI-based program for audit, enhance audit efficiency and accuracy by automating repetitive tasks. However, the presence of AI also poses challenges, including the ability to adapt and stay aware of technological developments, to ensure that AI should be prize instead of peril. The study provides insights into the future scenario of financial audits and the skills auditors must prepare to remain relevant. Implications include contributions to academic literature, education curriculum development, and adaptation strategies for professionals and organizations in the audit industry.

Keywords: *Artificial Intelligence, (Financial) Audit, Efficiency, Paradigm Shift.*

1. INTRODUCTION

In the recent era, digital technology, particularly Artificial Intelligence (AI), has become a key driver of changes in work patterns and even lifestyles, especially in business and professional sectors. Although Dennis (2024) notes that there are a lot of reasons for scepticism regarding the use of AI, as the top three being: lack of understanding and infrastructure; too expensive in broad sense; and the technology is not useful effectively. A survey by McKinsey (2023) shows that human-AI collaboration has become a critical need in the modern workplace. This trend aligns with the increasing global adoption of AI across various industry sectors.

The accounting field is also no exception, with the use of AI rising significantly, particularly in financial audit processes. A study by Kokina & Blanchette (2019) reveals that AI has been widely integrated with human auditors, contributing to improve audit quality. Several public accounting firms, especially the Big Four, have already adopted AI in their auditing process. For instance, Deloitte uses GRAPA and BEAT; PwC employs GL.ai and Halo; EY utilizes EY.ai and GLAD; and KPMG integrates K-Analyzer and Clara into their workflows (Pramudya, 2023).

The use of AI in auditing is growing rapidly in the recent years, especially among top-tier public accounting firms, as shown by the increasing number of "AI employees", which are workers who leverage AI in their daily tasks. However, the *Future of Jobs Report 2023* by the World Economic Forum (WEF) indicates that accounting and auditing professions are at risk of workforce reduction due to automation rather than job creation. The "Net Growth or Decline" indicator places these jobs in the "Jobs Displaced" category, suggesting that job roles in this field are more likely to be replaced rather than expanded. This poses a significant threat to accountants or auditors with more marginal or mechanistic skill sets in accounting services, which are easier to be automated.

On the other hand, accounting services that require analytical thinking, synthesis, creativity, and innovation - especially to include roles such as AI and machine learning experts are the most promising, providing significant potential for job creation. These developments are likely to increase further in the accounting profession in the future. This trend essentially encourages various stakeholders - such as teachers, regulators, and professionals to intelligently respond to these changes by preparing relevant policies and competencies. Hasan (2022) emphasizes that the financial audit profession and industry will undergo a huge change in future, which requires a paradigm change in the education and training of auditors. A study by Hanetseder *et al.* (2021) also indicates that the appearance of AI will change the roles and skills in auditing in the next decade. In addition, Efferin and Harindahyani (2024) estimates that human involvement in future technical audit processes will continue to decline. The purpose of this study is to find out the

future scenarios of the financial audit profession, in which paradigm changes, necessary skills, and how humans and AIs can continue to collaborate within a rapid digital audit industry. Depending on the preceding background, the main research question prepared in this study is: "How can AI-based technology be seen not as a peril for the financial audit profession, but rather be utilized to increase its relevance and the strategic impacts?"

2. METHODS

This study uses a qualitative interpretive approach and interpretive paradigm to evaluate the use of AI technology in the financial audit process. The primary focus is on the collaboration between humans and AI technology in transforming paradigms and the core competencies required in auditing. Specifically, the research explores how the application of Artificial Intelligence (AI)-based technology can be used as a prize rather than become a looming peril to the future of auditing profession.

Data collection methods include interviews, direct observation, and document analysis through literature review. An in-depth interview was conducted with experienced auditor from a Big Four public accounting firm with the initial “P”, using a semi-structured approach to elicit honest, in-depth, yet flexible responses.

Non-participant observation was also carried out during the interview to record subject’s expressions and reactions concerning the use of AI technology. Document analysis was conducted through literature review, which includes selected international and national journals and reputable books related to financial auditing.

In order to minimize the bias that able to happen, data triangulation was employed by comparing insights from interviews, observations, and literature studies. The study also ensured consistency by repeating certain questions and cross validating the results across multiple sources to gain a better understanding.

3. RESULTS AND DISCUSSIONS

3.1. Utilization of AI-Based Technologies at Public Accounting Firm “P” Surabaya

The application of cutting-edge technologies based on Artificial Intelligence (AI) is increasingly embraced by professionals, including prominent public accountants in Big Four firms, have adopted AI to support auditing process. The adoption of AI technology has shifted audit paradigms and processes, particularly in terms of human roles and the methods used in financial audits, especially regarding core competencies required of auditors in the AI era. Information for this study was gathered through an interview with an auditor from Public Accounting Firm “P”, who has more than 3 years of experience and holds a senior auditor position in the firm, also from the direct non-participative observation and analysis of documents as well.

Several AI-based technologies used in the financial audit process include PwC Aura, PwC Confirmation, PwC Connect, ChatPwC, Smart Audit Platform (SMAP), and Intelligent Document Assistant (IDA). Based on the literature review, PwC also implements various technologies such as Robotic Process Automation (RPA) to assist in tax audits, and GL.ai, which uses machine learning to detect anomalies in the general ledger. PwC has also developed Cash.ai to automate cash audits and Halo, which is used to analyze accounting journals by collecting clients’ financial record data from the system. These technologies greatly improve efficiency and accuracy in the financial audit process.

PwC Aura is the primary tool that is used throughout the financial statement audit from planning to completion. Aura functions to assess risk, identify account controls, and establish testing procedures such as substantive testing. Meanwhile, PwC Confirmation is used to send confirmation letters electronically, replacing the conventional confirmation system that relied on email or physical mail. This tool increases time efficiency and more environmentally friendly by reducing paper use.

PwC Connect is a platform that facilitates communication between auditors and clients. Clients can upload necessary data directly through PwC Connect, making data tracking easier as well as preventing confusion from receiving data from multiple clients. ChatPwC is an AI-powered application that enables auditors as well as PwC employees to ask various questions related to internal PwC operations. Based on the PwC knowledge database, this application provides information on tool usage guidelines, employee profiles, and other internal resources.

The Smart Audit Platform (SMAP) is designed to streamline the financial reporting adjustment process and automate substantive testing. SMAP assists in verifying integrity of financial reports through a series of automated checks and detailed tests, such as for Fixed Asset Additions and Operating Expenses. The AI technologies embedded in SMAP includes algorithms that can recognize tables in financial documents and recalculate statements accurately.

Finally, the Intelligence Document Assistant (IDA) is a tool within SMAP that utilizes AI to assist auditors in data extraction from documents. This tool enables auditors to focus more on critical review tasks and reduces time spent on routine tasks such as vouching. IDA can automatically extract information from documents with similar formats, therefore accelerating the audit process and improving work efficiency.

3.2. Analysis on AI Utilization in Financial Audit

This study found that AI technology significantly help ease auditors' workloads by taking over certain tasks; however, the role of AI remains limited. While AI provides convenience, the final decision regarding audit actions still rests with the auditor. Currently, AI can only automate analyses under general conditions and is not yet capable of handling more specific or unique situations. For example, the Intelligence Document Assistant (IDA) still has its limitations, it can only recognize documents with clear and uniform formats. This becomes a challenge, as client documents can come in a variety of formats. As a result, auditors still need to sort and classify documents before inputting them to the AI system. In essence, while AI can lighten the workload, human involvement is still required in the audit process.

Moreover, the potential over-reliance of auditors on AI technology is also a growing concern. The more user-friendly AI becomes, the more likely auditors are to depend on it for decision-making, which could eventually diminish human role in the auditing profession. As AI continues to advance and develop, it is not impossible that the demand for human auditors may decline over time.

The use of AI-based technology in the financial audit process brings significant benefits in reducing workloads. For example, the use of Intelligence Document Assistant (IDA) can accelerate the vouching process for transactions. Meanwhile the Smart Audit Platform (SMAP) automatically verifies financial statements through its call over feature, reducing time auditors spend on manual calculations. In general, AI technology help streamline and increase efficiency of audit process, optimize the use of time and resources, and help auditors to be more productive.

However, the adoption of AI-based technology is not immediately seamless. Many auditors initially face challenges adapting to the new tools. To address these challenges, Public Accounting Firm "P" provides e-learning channels and in-person training to help auditors adjust and familiarize themselves with the systems. Once auditors are familiar with the systems, auditors reported experiencing significant benefits from AI, such as time efficiency that leads to increase in productivity.

The findings of this study also align with Hasan's statement (2022) that AI cannot replace auditors in tasks that require human creativity and judgement, such as calculating provisions for post-employment benefits liabilities. Moffitt *et al.* (2018) similarly noted that technologies like Robotic Automation Process (RPA) are designed to save time for human labor instead of replacing it, thus allowing more time to be allocated for tasks that require creativity, complex decision-making, and emotional intelligence.

The findings indicate that while AI is indeed changing the patterns and methods of auditors' work, it neither replace nor take over the role of the auditor. Huang & Vasarhelyi (2019) stated that AI technologies like RPA frees auditors from repetitive and algorithmic tasks that do not require professional judgement, enabling them to focus more on areas that demands human expertise. Although AI technology has not yet fully replaced auditors, its advancement will undoubtedly continue to simplify audit workflows and methodologies in the future. Technologies such as the Smart Audit Platform (SMAP) and Intelligence Document Assistant (IDA) saves time for auditors by completing routine tasks. For example, even though AI can accelerate several audit stages, human auditors must still perform tasks that require professional judgement, such as determining audit procedures for unique cases. This highlights the fact that although many tasks can be automated by AI, auditors still have an important role in the auditing process, ensuring audit quality through professional scepticism and wise judgement.

Furthermore, this study also shows that various branches of AI, such as neural networks, expert systems, and fuzzy logic can be applied in different stages of the audit process, from risk analysis and internal control assessment to forming audit opinions. Some AI technologies, such as PwC's IDA, are only effective when the documents being analyzed have a standardized format. This requires further integration with other technologies, such as machine learning, to organize the format and structure of the data effectively.

On the other hand, continuous learning and adaptation are critical for current and future auditors to remain relevant in this digital age. While auditors do not need to become experts in specific technologies, they must develop the ability to learn and adapt quickly to utilize AI-based technologies that can be optimized in auditing. For instance, platforms like ChatPwC that are developed by PwC assist auditors in accessing information or completing technical tasks that previously consumed a lot of time and were prone to human errors.

4. CONCLUSION

This study found that the financial audit process, which was previously lengthy, complex, and labor-intensive has been significantly simplified and streamlined with the emergence of AI-based technology. More than that, AI technology is now widely used by top-tier public accounting firms, including one of the Big Four public accounting firms, referred to as "P" that operates in Surabaya. As audit complexity increases, accountants and auditors must utilize AI technologies to maintain effectiveness while improving efficiency.

However, though AI eases auditor's workload, it does not imply that the auditor's role is replaceable. In essence, AI functions best for tasks that do not require professional judgement and relies on algorithmic patterns. From the auditor's perspective, the impact of AI is significant as it improves time and energy efficiency, thus reducing the need for personnel with only standard competencies. Therefore, when AI technology is well understood and applied properly and responsibly, it can serve as an asset to the financial audit process, making it not only effective, but also time- and energy-efficient.

On the other hand, if AI is not used wisely, it could not only replace marginal auditors, but it may also lead to unjustified validation of audit outcomes that solely rely on AI, without proper oversight and accountability. The study has the strategic implications to prepare the auditor with higher level of professional wisdom and judgement that AI cannot cover and the better technological skills for AI optimization. The further implications include contributions to academic literature, education curriculum development, and adaptation strategies for professionals and organizations in the audit industry.

The limitation of this study lies in the subjectivity of AI utilization, which varies depending on the knowledge and experience of each user, especially in financial audit, where audit objects are rarely homogenous. Additionally, due to the variation and diversity of AI technologies and their specific function in various audit processes, this study could not provide a highly detailed discussion on the application of each tool. Hence, future research should aim to involve a broader range of AI users in the audit process to serve as a more objective reference. Likewise, more specific research into the application of AI technologies in future studies will enhance understanding and enable more effective and efficient use of AI in financial audits.

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