

The Impact of Big Data and Artificial Intelligence (AI) Technology Implementation on the Financial Report Audit Process at CV. Harmony

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ABSTRACT

This study discusses the implementation of Big Data and Artificial Intelligence (AI) technology in the financial statement audit process, with a case study at CV. Harmony. This study aims to understand how both technologies can improve auditor efficiency, detect and prevent financial conditions, and influence transformation in financial management. This study examines the theoretical and practical benefits of using Big Data and AI, as well as the relevance of previous research that shows the effectiveness of technology in auditing and financial reporting. Author, Sampling using purposive sampling method, namely selecting respondents who are considered the most relevant and have competence in the use of Big Data and AI technology in the audit process at CV. Harmony. The results of this study partially show that the application of Big Data and Artificial Intelligence (AI) technology significantly increases the efficiency of the audit process, assists in detecting conditions, and improves the quality of financial reports at CV. Harmony. In particular, this technology facilitates faster and more accurate data analysis, as well as improves risk assessment and presents more transparent and reliable financial reports.

Keywords: Big Data, Artificial Intelligence, Audit Process, and Financial Reports

INTRODUCTION

In the era of increasingly rapid digitalization, the use of Big Data and Artificial Intelligence (AI) technology has become inevitable, especially in the field of financial management. Big Data is a term given to a collection of data that is very large and complex, making it impossible to process using conventional database management devices or other data processing applications, Artificial Intelligence or artificial intelligence is a technology that allows computers to perform tasks better than humans. Artificial Intelligence is used to overcome the limitations and shortcomings of traditional methods that have an impact on financial services.

Entering the era of society 5.0, the integration of cutting-edge technologies such as AI and Big Data into the social order has emerged to improve the quality of human life and create harmony between technological progress and social welfare (Alimohammadlou & Khoshsepehr, 2023). According to Flyverbon (in Sewpersadh, 2023) digital transformation opens up new

opportunities for companies to optimize their operations by utilizing automation in creating market differentiation and service excellence.

In today's digital era, the financial management process has been connected to computer programs, in terms of collecting, processing data and information to decision making. One of the innovations in accounting is the development of an accounting information system which is a system designed to collect, process, and present financial information to interested parties. As a form of adaptation and to help businesses and users in managing financial operations, financial technology (fintech) was created by utilizing innovation and digital technology to improve, expand, and automate financial services (Kayani, 2025).

LITERATURE REVIEW

Use of Big Data in Auditing

Previous studies have shown that the application of Big Data technology in auditing can improve the effectiveness of the audit process by improving risk assessment and detection of deviations. Big Data allows auditors to perform more in-depth data analysis, which contributes to better financial reporting quality. Financial reports show a high level of reporting quality, with accurate and transparent disclosures, and minimal deviations from industry norms (Nugrahanti et al., 2023).

The Role of Artificial Intelligence.

Information Technology and AI can be used in risk analysis and control testing. The role of Artificial Intelligence (AI) in helping auditors simplify the work in the audit process such as search processes, inclusion and exclusion criteria, and data collection (Fadilla et al., 2025) . AI contributes to detecting financial fraud through sophisticated analysis techniques. Research shows that technologies such as Artificial Neural Networks (ANN) and Machine Learning can improve audit efficiency and accuracy, although they still require contextual judgment from human auditors.

The Need for Technology in Finance

The presence of Big Data and AI technology is considered important to answer the needs of companies in the financial sector, especially in reducing fraudulent acts and increasing the efficiency of the audit process. Many companies are starting to abandon traditional methods of recording financial transactions. According to Elsa et al. (2025) AI can help analyze suspicious transaction patterns more quickly and accurately, while Big Data Analytics provides the ability to process and evaluate large amounts of data more efficiently.

Positive and Negative Impacts

Although this technology offers many benefits, there are also challenges and weaknesses that need to be considered, such as the need for judgment from auditors and potential security risks that arise along with increasingly advanced automation. In addition, the use of digital-based systems also faces challenges in terms of data security and limited technological infrastructure in several government agencies. Therefore, more intensive efforts are needed to improve auditor digital literacy and strengthen information security systems in the audit process (Wahono et al., 2023). This literature review provides a strong theoretical basis for this research and demonstrates the relevance and urgency of using Big Data and AI in modern audit practice.

METHODOLOGY

The methodology of this study uses a qualitative descriptive approach. This study aims to explore the phenomenon of the use of Big Data and Artificial Intelligence in the audit process at CV. Harmony. The sample in this study consisted of employees at CV. Harmony, especially those involved in the audit process, such as directors, auditors and finance. The researcher conducted structured interviews with relevant respondents to obtain in-depth information regarding the use of Big Data and Artificial Intelligence technology in financial statement audits.

Data collection is carried out through two main techniques:

- a. Interview: The researcher conducted direct interviews with respondents using a prepared interview guide. This interview aims to obtain in-depth information about the respondents' experiences and views regarding the use of technology in audits.
- b. Observation: Researchers also conducted direct observations at the location to understand the context and practices at CV. Harmony.

The data collected consists of primary data sources, namely direct information from respondents, and secondary data sources, such as documents and questionnaires that support the research.

Analyzing Data

The data analysis of this study was conducted descriptively with a qualitative approach, namely describing the responses of informants through in-depth interviews. The data obtained were analyzed by describing the perceptions, experiences, and views of respondents regarding the application of Big Data and AI technology in the audit process at CV. Harmony. The results of the analysis show that this technology has a positive impact on efficiency, fraud detection, and the quality of financial reports.

RESULTS AND DISCUSSION

The results of this study indicate that the application of Big Data and Artificial Intelligence (AI) technology has a positive impact on the financial report audit process at CV. Harmony.

Some of the key findings include:

- a. Increased Efficiency: The use of Big Data and AI in the audit process increases efficiency, allowing auditors to perform faster and more accurate data analysis.
- b. Fraud Detection: This technology helps in better detection of fraud, thereby improving the quality of audits and reliability of financial reports.
- c. Improved Risk Assessment: By using this technology, auditors can perform better risk assessments, which contributes to more informed decision making in the audit process.
- d. Financial Reporting Quality: The audit results showed that the financial reports produced were more accurate and transparent, with better disclosure and minimal deviations from industry norms.
- e. Overall, this study confirms the importance of adopting Big Data and AI technologies in audit practices to improve the effectiveness and efficiency of audit processes in companies.

Table 1. Respondent Characteristics by Position

Position	Number of people
Director	1
Auditor	1
Finance	1
Total	3

Source: Processed Primary Data, 2024

Based on the data obtained from Table 1 shows a picture of the frequency distribution related to the position of respondents using Big Data Technology and Artificial Intelligence in the audit process, the largest number of respondents is the Auditor party as many as 2 people. This result identifies that the use of Big Data and Artificial Intelligence technology is more focused on the Auditing division, because the audit process involves the Audit party in the financial report audit process.

DISCUSSION

The discussion obtained from this study is discussing how the application of Big Data and Artificial Intelligence (AI) technology significantly improves the efficiency, accuracy, and quality of the financial report audit process at CV. Harmony. This technology makes it easier for auditors to collect, integrate, and analyze data quickly and accurately, so that they are able to detect potential fraud and assess risks better. In addition, the use of Big Data and AI also contributes to the transparency of financial reports and the reduction of fraudulent acts, which is in line with the principles of objectivity and independence of auditors. This discussion also needs to highlight the challenges and obstacles in implementing this technology, such as the need for adequate training and infrastructure, as well as the importance of maintaining data integrity and information security. Thus, the application of this technology not only improves audit effectiveness, but also supports the development of more modern and reliable audit practices.

CONCLUSION

The implementation of Big Data and Artificial Intelligence (AI) technology significantly improves the efficiency, accuracy, and quality of the financial report audit process at CV. Harmony. This technology facilitates auditors in collecting, analyzing, and detecting fraud, and supports transparency and objectivity in audits. However, challenges such as training and infrastructure needs still need to be considered to optimize the implementation of this technology. Companies and auditors can further optimize the use of Big Data and Artificial Intelligence technology in the audit process to improve the efficiency, accuracy, and quality of financial reports. In addition, adequate training and infrastructure development are needed so that the implementation of this technology runs effectively and safely. Some recommendations that can be taken from this study include: employee training and development, technology integration in the audit process, improvement of technology infrastructure, evaluation and adjustment of the audit process, and compliance with ethical standards. This recommendation aims to assist CV. Harmony in maximizing the benefits of Big Data and AI technology in their audit practices. The limitations of this study include the focus on the application of Big Data and Artificial Intelligence (AI) technology in the audit process at CV. Harmony, and using qualitative research methods with a descriptive and inductive approach. This study does not discuss technical aspects in depth related to technology

development, and does not cover all companies or other industries outside CV. Harmony. This research was only conducted at CV. Harmony, so the results and findings may not be generalizable to other companies in different sectors or in different locations.

REFERENCES

- Alimohammadlou, M., & Khoshsepehr, Z. (2023). The role of Society 5.0 in achieving sustainable development: a spherical fuzzy set approach. *Environmental Science and Pollution Research*, 30 (16), 47630–47654. <https://doi.org/10.1007/s11356-023-25543-2>
- Fadilla, A., Army, E., Dwi, Y., Rustam, P., & Pontoh, GT (2025). The Role of Artificial Intelligence in Improving Audit Quality: A Systematic Literature Review. 5.
- Kayani, UN (2025). Exploring prospects of blockchain and fintech: using SLR approach. *Journal of Science and Technology Policy Management*, 16 (1), 5–41. <https://doi.org/10.1108/JSTPM-01-2023-0005>
- Natali, Elsa., Rely, Gilbert., Nila Sari, P. (2025). *Matter*. 772. 2 (3), 772–782.
- Prasetyo Nugrahanti, T., Sudarmanto, E., Bakri, AA, Susanto, E., & Male, SR (2023). The Effect of Big Data Technology Implementation, Auditor Independence, and Financial Reporting Quality on the Effectiveness of the Audit Process. *Sanskara Accounting and Finance*, 2(1), 47–54. <https://doi.org/10.58812/sak.v2i01.249>.
- Sewpersadh, N.S. (2023). Disruptive business value models in the digital era. *Journal of Innovation and Entrepreneurship*, 12 (1), 1–27. <https://doi.org/10.1186/s13731-022-00252-1>.
- Wahono, PS, Safuan, S., & Alhabshy, MA (2023). Use of E-Audit Applications in the Police Inspectorate Management Information System. *Global Education Scientific Journal*, 4 (2), 1122–1130. <https://doi.org/10.55681/jige.v4i2.869>.