Internal Auditor Training Quality as a Determining Factor of Deviation Detection Rate

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Abstract

This study explores the relationship between the quality of internal auditor training and the effectiveness of irregularity detection within audit processes. As organizational operations grow increasingly complex, the risk of fraud and non-compliance rises, underscoring the critical role of internal auditors as the frontline in safeguarding financial integrity. Employing a qualitative, library-based research approach, this study reviews academic literature, institutional reports, and professional publications to examine how training influences auditors' capacity to detect fraud and errors. Findings indicate that high-quality training featuring relevant content, practical methods, and integration of modern technologies such as data analytics and forensic auditing significantly enhances auditors' technical, analytical, and ethical competencies. Technology-based and case-driven training methods improve detection accuracy and audit coverage, especially in handling large datasets and complex fraud schemes. However, challenges such as limited organizational resources, resistance to new approaches, and varying levels of digital literacy among auditors may hinder training effectiveness. Therefore, auditor training should be seen as a strategic and continuous investment, aligned with organizational needs and evolving risk landscapes. This research provides a conceptual foundation and policy implications for strengthening internal control systems through more targeted and adaptive auditor training programs.

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1. Introduction

Internal auditing is a critical instrument in achieving good organizational governance. In both corporate and governmental contexts, internal audits play a vital role in maintaining the integrity of financial systems, ensuring compliance with policies and procedures, and detecting potential irregularities that could harm the organization. Internal auditors are expected to serve as the frontline in internal oversight processes while acting as an early warning system against various forms of irregularities and fraud. However, amid the increasing complexity of organizational activities, the risk of irregularities and fraud continues to rise. A 2022 report from the Association of Certified Fraud Examiners (ACFE) stated that global losses due to fraud reached USD 4.7 trillion annually, with approximately 42% of fraud cases first detected through internal audit activities. This underscores the critical role of internal audits in detecting irregularities and supporting effective internal control systems (Chiarini et al., 2021).

In the Indonesian context, cases of irregularities that are detected late remain common. According to the 2023 report from the Supreme Audit Agency (BPK), more than 14,000 findings of non-compliance in the financial management of local governments were identified, resulting in losses amounting to IDR 18.3 trillion. Many of these cases could have been minimized if early detection by internal auditors had been effective. Unfortunately, auditors' ability to detect irregularities is often hindered by limited knowledge, lack of technical skills, and inadequate preparedness for new fraud schemes.

One of the most influential factors in the effectiveness of internal auditors is the quality of training they receive. Internal auditor training is not merely an administrative formality but a process of strengthening professional capacity, encompassing an understanding of regulations, up-to-date audit methods, data analysis capabilities, and investigative skills. High-quality training must be designed comprehensively, relevant to real-world challenges, and adaptive to technological advancements and increasingly complex fraud schemes (DeSimone & Rich, 2020). Unfortunately, in practice, many training programs for internal auditors remain normative and overly general. Training materials often fail to address the technical and analytical needs aligned with modern fraud dynamics. Training is conducted routinely without in-depth evaluation of its effectiveness in improving auditors' detection capabilities (Khan et al., 2020). As a result, irregularities within organizations often go unnoticed or are only detected after causing significant financial or reputational damage.

This issue is compounded by the fact that most prior research has focused more on auditors' experience, independence, or personal integrity in relation to audit effectiveness. For example, a study by Grima et al. (2023) highlighted the influence of auditor independence on audit quality, while research by Abdulai et al. (2021) emphasized the relationship between auditors' work experience and their ability to detect fraud. Meanwhile, studies specifically addressing training quality as a direct determinant of auditors' detection capabilities remain very limited. Research by Siahaan et al. (2024) attempted to examine the relationship between auditor training and audit performance but did not elaborate in detail on how training aspects relate

to the primary indicator of effectiveness, namely the ability to detect irregularities. Similarly, a study by Wahyuni (2023) emphasized the importance of auditor capacity development but did not elaborate on the types and quality of training effective in the context of complex irregularity dynamics.

Therefore, there is a need for research that explicitly examines the impact of internal auditor training quality on the level of irregularity detection. This research is crucial to address the literature gap that has so far paid insufficient attention to training as a primary variable in the success of internal audits. Additionally, the study aims to identify aspects of auditor training such as teaching methods, duration, intensity, specific materials, and training evaluation that most contribute to improving auditors' detection capabilities in practice. By understanding how training quality affects the effectiveness of irregularity detection, organizations can design more targeted training strategies with tangible impacts on internal audit performance. It is hoped that the findings of this research will serve as a foundation for policymakers and institutional leaders to evaluate and enhance internal auditor training systems as an integral part of strengthening internal control systems and risk management.

2. Methods

This study employs a qualitative approach using the library research method. This approach was chosen because the research focuses on an in-depth analysis of the relationship between two variables: the quality of internal auditor training as the

independent variable and the level of irregularity detection as the dependent variable, through a review of various scientific literature and relevant documents.

The data used in this study are secondary data, obtained indirectly through the collection and analysis of previously published sources. Data sources include academic books, national and international scientific journals, scholarly articles, previous research reports, audit institution documents, and official publications from relevant institutions such as the Supreme Audit Agency (BPK), the Financial and Development Supervisory Agency (BPKP), and the Association of Certified Fraud Examiners (ACFE). The literature search was conducted systematically by selecting documents relevant to the research topic and variables. The selection criteria for literature were based on topic relevance, recency (published within the last 5–10 years), and the validity and credibility of the sources. The analyzed literature was then examined to identify patterns, theoretical concepts, and empirical findings that could explain the influence of internal auditor training quality on the level of irregularity detection.

The independent variable in this study is the quality of internal auditor training, encompassing aspects such as training content, delivery methods, duration and frequency of training, and its relevance to audit practices and evolving fraud schemes. The dependent variable is the level of irregularity detection, which reflects the extent to which internal auditors can identify and report indications of irregularities in organizational activities. Data analysis was conducted using a descriptive-qualitative approach, interpreting findings from various literature sources to construct a conceptual and argumentative synthesis regarding the

relationship between the two variables. This study does not aim to quantitatively measure the influence of the variables but rather focuses on providing an in-depth understanding, theoretical explanations, and a framework for thinking that can serve as a basis for further research or practical policy considerations.

3. Results

3.1. Internal Auditor Training Quality and Its Relevance to Deviation Detection

The influence of internal auditor training quality on the level of fraud detection is a critical issue in the auditing world, given the role of internal auditors as the frontline in safeguarding an organization's financial and operational integrity. The quality of training provided to internal auditors directly impacts their ability to identify fraud, material errors, or procedural violations that could harm the organization. In this context, training serves not only as a means of developing technical competencies but also as a foundation for building professional attitudes, skepticism, and analytical skills needed to address increasingly complex audit challenges. Based on expert opinions and recent research findings, the following is a broader discussion on the relationship between the quality of internal auditor training and the level of fraud detection, considering various relevant dimensions (Pulliam et al., 2022).

The quality of internal auditor training can be defined as the effectiveness of development programs that encompass various aspects, such as the relevance of materials, teaching methods, instructor qualifications, and the application of

technology and practical approaches. High-quality training is typically designed to provide auditors with in-depth knowledge of accounting standards, audit techniques, applicable regulations, and skills to analyze financial and operational data (Abdulai et al., 2021). Additionally, training must instill ethical values, independence, and professional skepticism, which are core pillars in performing audit duties. In practice, effective training goes beyond theory to include real-world case simulations, fraud case studies, and the use of modern audit technologies such as data analytics and artificial intelligence. This equips auditors to better handle complex and dynamic audit situations in the field (Nonnenmacher & Gómez, 2021).

The relationship between training quality and the level of fraud detection is closely intertwined. Auditors who have undergone high-quality training tend to have better capabilities in recognizing signs of irregularities, whether intentional fraud or unintentional errors (Chiarini et al., 2021). One of the primary benefits of training is the auditors' ability to identify high-risk areas within an organization. For example, through training that includes risk analysis, auditors can understand sectors or business processes vulnerable to manipulation, such as inventory management, accounts receivable transactions, or procurement. With this understanding, auditors can design more focused and effective audit procedures to detect potential irregularities (Khan et al., 2020).

According to Bonrath and Eulerich (2024), training that includes investigative audit techniques enables auditors to adopt a more proactive approach to detecting fraud. Techniques such as data analysis, forensic accounting, and in-depth interviews become essential tools for auditors to uncover anomalies that may not be apparent

during routine examinations. For instance, training in the use of data analytics software allows auditors to examine thousands of transactions in a short time, identifying suspicious patterns such as duplicate transactions or irregular payments. This approach is highly relevant in the digital era, where the volume and complexity of data generated by organizations continue to grow.

3.2. Theoretical Perspectives, Empirical Findings, and Strategic Implications

Expert opinions emphasize the critical role of training in enhancing audit quality and fraud detection capabilities. Christ et al. (2021) highlight that audit quality heavily depends on auditors' technical competence and experience. According to them, structured and continuous training is key to ensuring auditors possess adequate knowledge to tackle audit challenges. Similar views are expressed by Grima et al. (2023) and Ilori et al. (2024), who stress that training incorporating investigative techniques and audit risk understanding is essential for strengthening auditors' professionalism. They argue that well-trained auditors are not only capable of detecting material errors but can also identify signs of fraud often concealed within seemingly normal financial reports.

Empirical research also supports a positive correlation between training quality and fraud detection levels. A study by Nonnenmacher et al. (2021) demonstrates that targeted training helps auditors build a robust knowledge framework, enhancing their ability to identify discrepancies in financial statements. Another study by DeSimone & Rich (2020) found that technology-based training, such as the use of big data analytics and artificial intelligence, significantly improves

the efficiency and scope of risk analysis. With these technologies, auditors can detect irregularities with greater accuracy compared to traditional manual methods. Additionally, Ibrani (2020) confirms that audit experience gained through practical training plays a crucial role in improving overall audit quality, including the ability to recognize risks and errors.

However, high-quality training depends not only on the content taught but also on the approach used. Training curricula must be relevant to the latest developments in accounting standards, audit technologies, and fraud trends. For instance, training should cover topics such as changes in International Financial Reporting Standards (IFRS), data analysis techniques, and recent fraud cases relevant to specific industries. Practical approaches, such as case simulations and technology-based exercises, are also vital. Simulations enable auditors to confront realistic fraud scenarios, allowing them to develop skills to recognize complex patterns of irregularities. Moreover, training must be conducted periodically to ensure auditors stay updated with the latest knowledge and skills.

The integration of technology in training is a key factor in enhancing fraud detection capabilities. In the digital era, auditors need to master tools like big data analytics, robotic process automation (RPA), and artificial intelligence to efficiently analyze large datasets. Training that incorporates these technologies enables auditors to understand their functionality and apply them in audit tasks. For example, data analytics can be used to detect unusual transactions, such as payments made outside normal working hours or transfers to unregistered accounts. Thus, technology-based training not only improves efficiency but also expands the scope of audits, allowing

auditors to identify irregularities that might be overlooked by traditional methods (Siahaan et al., 2024).

Despite the benefits of high-quality training, several challenges must be addressed to maximize its impact. One major challenge is resource limitations, particularly for small or medium-sized organizations. Technology-based training often requires significant investment in software, hardware, and qualified instructors (Bonrath & Eulerich, 2024). Organizations with limited budgets may struggle to provide adequate training, which can hinder auditors' ability to detect irregularities effectively. Additionally, not all auditors possess sufficient digital literacy to leverage modern audit technologies. Therefore, training must include foundational modules on digital skills to ensure all auditors can keep pace with technological advancements.

Another challenge is resistance to change among auditors. Some auditors, particularly those accustomed to traditional methods, may be reluctant to adopt new techniques taught in training (Islam et al., 2023). This resistance can reduce training effectiveness and impede auditors' ability to detect irregularities. To address this, organizations must foster a supportive learning culture that encourages auditors to continuously develop their skills. Training should also be tailored to participants' needs and experience levels, ensuring the material feels relevant and applicable to their daily work.

The practical implications of the relationship between training quality and fraud detection levels are significant. Organizations should view training as a strategic investment rather than a mere operational cost. By providing high-quality training, organizations can enhance their internal auditors' ability to detect fraud and

errors, ultimately protecting assets and reputation. Collaboration with public accounting firms, professional organizations like the Institute of Public Accountants of Indonesia (IAPI), or professional training providers can help organizations develop relevant and up-to-date training curricula. Furthermore, training must emphasize the importance of independence and professional ethics, as external pressures from management or other parties can undermine auditors' objectivity in detecting irregularities (Christ et al., 2021).

In a global context, the importance of internal auditor training is growing amid increasing business complexity. Globalization, digitalization, and regulatory changes have created new challenges for auditors, such as technology-based fraud and cross-border compliance violations. Training that addresses these issues enables auditors to remain relevant and effective in their roles. For example, training on compliance with the General Data Protection Regulation (GDPR) or anti-money laundering standards can help auditors identify violations with significant organizational impact. Overall, the quality of internal auditor training has a profound impact on fraud detection levels. Relevant, practical, and technology-based training not only enhances auditors' technical and analytical competencies but also strengthens their professional attributes, such as skepticism and independence. Despite challenges like resource constraints and resistance to change, investing in high-quality training yields long-term benefits, including stronger internal controls, more reliable financial reporting, and a safeguarded reputation. Thus, internal auditor training should be a strategic priority for any organization aiming to ensure operational integrity and sustainability.

4. Conclusion

The quality of internal auditor training has been shown to have a significant impact on the level of detection of irregularities in the audit process. Internal auditors who receive comprehensive, relevant, and adaptive training to technological developments and fraud trends tend to have better competence in identifying anomalies, material errors, and potential fraud in organizational activities. Training not only equips auditors with technical knowledge, but also strengthens the ethical, professional, and skepticism aspects that are the foundation of an effective audit process.

Various empirical findings and expert opinions support that technology-based training such as the use of big data analytics, forensic audits, and case simulations can improve audit efficiency, accuracy, and coverage, especially in dealing with data complexity and risk dynamics in the digital era. In addition, training that is designed with a practical approach and tailored to the needs of the organization has been shown to be more effective in increasing auditor sensitivity to indications of irregularities. However, the effectiveness of training is inseparable from existing challenges, such as limited resources, resistance to change, and disparities in digital competence between auditors. Therefore, organizations need to make internal auditor training a sustainable strategic investment, supported by infrastructure, technology, and organizational culture that are conducive to learning and innovation.

References

Abdulai, I., Salakpi, A., & Nassè, T. B. (2021). Internal audit and quality of financial reporting in the public sector: the case of University for Development Studies. *Finance & Accounting Research Journal*, *3*(1), 1-23.

Bonrath, A., & Eulerich, M. (2024). Internal auditing's role in preventing and detecting fraud: An empirical analysis. *International Journal of Auditing*, *28*(4), 615-631.

Chiarini, A., Castellani, P., Rossato, C., & Cobelli, N. (2021). Quality management internal auditing in small and medium-sized companies: an exploratory study on factors for significantly improving quality performance. *Total quality management & business excellence*, *32*(15-16), 1829-1849.

Christ, M. H., Eulerich, M., Krane, R., & Wood, D. A. (2021). New frontiers for internal audit research. *Accounting Perspectives*, *20*(4), 449-475.

DeSimone, S., & Rich, K. (2020). Determinants and consequences of internal audit functions within colleges and universities. *Managerial Auditing Journal*, *35*(8), 1143-1166.

Grima, S., Baldacchino, P. J., Grima, S., Kizilkaya, M., Tabone, N., & Ellul, L. (2023). Designing a characteristics effectiveness model for internal audit. *Journal of Risk and Financial Management*, *16*(2), 56.

Ibrani, E. Y., Faisal, F., Sukasari, N., & Handayani, Y. D. (2020). Determinants and consequences of internal auditor quality on regional government performance: an empirical investigation in indonesia. *Calitatea*, *21*(176), 87-92.

Ilori, O., Nwosu, N. T., & Naiho, H. N. N. (2024). Advanced data analytics in internal audits: A conceptual framework for comprehensive risk assessment and fraud detection. *Finance & Accounting Research Journal*, *6*(6), 931-952.

Islam, M., Slof, J., & Albitar, K. (2023). The mediation effect of audit committee quality and internal audit function quality on the firm size–financial reporting quality nexus. *Journal of Applied Accounting Research*, *24*(5), 839-858.

Khan, N., Rafay, A., & Shakeel, A. (2020). Attributes of internal audit and prevention, detection and assessment of fraud in Pakistan.

Nonnenmacher, J., & Gómez, J. M. (2021). Unsupervised anomaly detection for internal auditing: Literature review and research agenda. *International Journal of Digital Accounting Research*, *21*.

Nonnenmacher, J., Kruse, F., Schumann, G., & Marx Gómez, J. (2021). Using autoencoders for data-driven analysis in internal auditing.

Pulliam, D. B., Liburd, H. L. B., & Sanderson, K. A. (2022). The effects of the internal control opinion and use of audit data analytics on perceptions of audit quality, assurance, and auditor negligence. *Auditing: A Journal of Practice & Theory*, *41*(1), 25-48.

Siahaan, M., Suharman, H., Fitrijanti, T., & Umar, H. (2024). When internal organizational factors improve detecting corruption in state-owned companies. *Journal of Financial Crime*, *31*(2), 376-407.