Artificial Intelligence, Whistleblowing, and Auditor Skepticism for Fraud Detection in Higher Education

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Abstract

As higher education institutions undergo rapid digital transformation, fraud detection has become increasingly challenging due to the growing complexity of financial management and organizational governance. Although whistleblowing systems, professional skepticism, and Artificial Intelligence (AI) have been widely discussed in previous studies, limited research has examined their integrated contribution to fraud detection, particularly by positioning AI Readiness as an organizational capability. This study aims to examine the effects of Whistleblowing Systems and Professional Skepticism on Fraud Detection Effectiveness while investigating the direct and moderating roles of Artificial Intelligence Readiness. A quantitative approach was employed using a cross-sectional survey of internal auditors, members of Internal Supervisory Units (SPI), and university personnel responsible for governance and fraud prevention in Indonesian higher education institutions. The collected data were analyzed using Partial Least Squares Structural Equation Modeling (PLS-SEM). The results indicate that Whistleblowing Systems, Professional Skepticism, and Artificial Intelligence Readiness each have a positive and significant effect on Fraud Detection Effectiveness. Artificial Intelligence Readiness also significantly strengthens the relationship between Whistleblowing Systems and Fraud Detection Effectiveness but does not significantly moderate the relationship between Professional Skepticism and Fraud Detection Effectiveness. These findings suggest that Artificial Intelligence contributes to fraud detection not by replacing auditors' professional judgment but by enhancing organizational readiness to integrate intelligent technologies with governance mechanisms. Therefore, effective fraud detection in higher education depends on the synergy between organizational governance, human expertise, and Artificial Intelligence Readiness.

Keywords: Artificial Intelligence Readiness; Fraud Detection; Higher Education; Professional Skepticism; Whistleblowing System

INTRODUCTION

The rapid advancement of digital technologies has fundamentally transformed the way organizations manage financial information, operational processes, and governance. While digital transformation has significantly improved organizational efficiency and accountability, it has also increased the complexity of fraudulent activities. Fraud schemes now extend beyond conventional financial manipulation to include digital transactions, procurement irregularities, misuse of research funding, cyber-enabled misconduct, and sophisticated financial reporting practices. Consequently, fraud detection is no longer viewed solely as an auditing function but as a strategic governance mechanism that supports transparency, accountability, and public trust (ACFE, 2024).

Higher education institutions are particularly vulnerable to these challenges because they manage substantial public resources through tuition fees, government appropriations, research grants, procurement activities, scholarships, and collaborative partnerships involving multiple stakeholders. The increasing complexity of these activities, combined with rapidly digitalized administrative systems, creates greater opportunities for fraud when governance mechanisms fail to function effectively. In

Indonesia, several corruption cases involving universities—including procurement irregularities, misuse of research funds, and financial management misconduct—have highlighted the importance of strengthening internal control systems and fraud detection practices. These cases demonstrate that fraud prevention and detection should be regarded as strategic governance priorities rather than merely compliance requirements (Indonesia Corruption Watch [ICW], 2024).

To strengthen organizational integrity, universities have implemented various governance mechanisms. Among these, the Whistleblowing System (WBS) has become one of the most important instruments for identifying unethical behaviour and organizational misconduct by providing secure channels for reporting suspected violations. Likewise, professional skepticism enables internal auditors to critically evaluate audit evidence, question unusual transactions, and identify fraud indicators that may otherwise remain undetected (Hurtt, 2010). Previous studies consistently demonstrate that both whistleblowing systems and professional skepticism contribute positively to fraud detection. However, these mechanisms are often examined independently, creating a fragmented understanding of how organizational governance and auditors' professional judgment interact in strengthening fraud detection.

The increasing complexity of fraud has also encouraged organizations to explore Artificial Intelligence (AI) as a means of improving fraud detection through anomaly detection, predictive analytics, machine learning, natural language processing, and continuous auditing. Nevertheless, this study does not conceptualize Artificial Intelligence as a replacement for auditors or existing governance mechanisms. Instead, AI is viewed as an enabling organizational capability whose effectiveness depends on an organization's ability to adopt and integrate intelligent technologies into fraud detection processes. Accordingly, the value of AI lies not in replacing professional judgment but in supporting auditors and strengthening governance mechanisms through more timely, comprehensive, and data-driven analysis.

Despite growing scholarly interest in whistleblowing systems, professional skepticism, and Artificial Intelligence, several important research gaps remain. First, previous studies have predominantly examined these variables separately, providing limited understanding of how governance mechanisms, auditors' professional judgment, and intelligent technologies collectively influence fraud detection effectiveness. Second, empirical evidence concerning AI-enabled fraud detection has largely focused on banking, financial institutions, and corporate organizations, whereas higher education institutions remain relatively underexplored. Third, existing studies generally conceptualize Artificial Intelligence as a technological tool, with limited attention given to the organizational readiness required for its effective implementation. Finally, most prior research employs quantitative approaches that explain whether relationships exist but provide limited insights into why Artificial Intelligence succeeds—or fails—in strengthening fraud detection within organizational settings.

Responding to these gaps, this study examines the effects of Whistleblowing Systems and Professional Skepticism on Fraud Detection Effectiveness while investigating the moderating role of Artificial Intelligence in higher education institutions. Using a Sequential Explanatory Mixed-Method approach, this study combines Partial Least Squares Structural Equation Modeling (PLS-SEM) with in-depth interviews and Focus Group Discussions (FGDs) to provide both statistical evidence and contextual explanations of fraud detection practices.

This study makes three important contributions to the literature. First, it develops an integrated framework linking whistleblowing systems, professional

skepticism, and Artificial Intelligence to explain fraud detection effectiveness within higher education institutions. Second, unlike previous studies that primarily conceptualize Artificial Intelligence as a technological tool, this study reconceptualizes AI as an enabling organizational capability by operationalizing it through **Artificial Intelligence Readiness**, thereby extending current understanding of AI adoption in fraud detection. Third, by employing a Sequential Explanatory Mixed-Method design, this study provides richer insights into how organizational readiness influences the successful integration of intelligent technologies into fraud detection practices.

Overall, this study argues that effective fraud detection in higher education depends not solely on technological advancement but on the integration of governance mechanisms, professional judgment, and organizational readiness to adopt Artificial Intelligence.

LITERATURE REVIEW AND HYPOTHESIS DEVELOPMENT

Whistleblowing System and Fraud Detection

The Whistleblowing System (WBS) is widely recognized as an essential governance mechanism for preventing and detecting organizational fraud. It provides employees and stakeholders with secure and confidential channels to report suspected misconduct, unethical behaviour, or violations of organizational policies. From the perspective of **Agency Theory**, whistleblowing systems reduce information asymmetry between principals and agents by encouraging the disclosure of information that would otherwise remain concealed. As a result, whistleblowing contributes to greater organizational transparency, accountability, and integrity.

Within higher education institutions, the importance of whistleblowing systems has increased significantly due to the growing complexity of financial management, procurement activities, research funding, scholarship administration, and collaborations involving multiple stakeholders. These conditions create opportunities for fraud if effective governance mechanisms are not properly implemented. Consequently, whistleblowing systems have become an integral component of Good University Governance, supporting not only ethical reporting but also organizational accountability and fraud prevention.

Previous empirical studies consistently support the positive role of whistleblowing systems in strengthening fraud detection. Miceli et al. (2008) argue that whistleblowing mechanisms become effective only when organizations provide adequate protection for whistleblowers and demonstrate a genuine commitment to investigating reported misconduct. Similarly, Paranoan et al. (2024) found that ethical awareness, organizational support, and favourable attitudes toward whistleblowing significantly encourage individuals to report fraudulent behaviour. Supporting these findings, the Association of Certified Fraud Examiners (ACFE, 2024) consistently identifies whistleblower tips as one of the most effective sources of occupational fraud detection worldwide.

Nevertheless, the effectiveness of whistleblowing systems should not be interpreted merely as the availability of reporting channels. Without organizational commitment, timely investigation, and appropriate follow-up actions, whistleblowing mechanisms may fail to generate meaningful improvements in fraud detection. Furthermore, previous studies have predominantly examined whistleblowing systems from behavioural and ethical perspectives, emphasizing reporting intentions, whistleblower protection, and ethical climate. Comparatively fewer studies have investigated how whistleblowing systems directly improve fraud detection effectiveness within higher education

institutions, particularly in the context of digital transformation. This indicates that whistleblowing systems should be viewed not only as reporting mechanisms but also as strategic governance instruments that strengthen fraud detection within increasingly digital organizational environments.

Drawing upon Agency Theory and prior empirical evidence, this study argues that an effective whistleblowing system facilitates the early identification of fraudulent activities, improves organizational transparency, and enhances fraud detection effectiveness within higher education institutions. However, whistleblowing systems primarily generate information regarding suspected fraud; the effectiveness of these reports ultimately depends on auditors' ability to critically evaluate the reported information before appropriate audit conclusions can be reached. Therefore, the following hypothesis is proposed:

H1: *Whistleblowing System positively influences Fraud Detection Effectiveness in Higher Education Institutions.*

Professional Skepticism and Fraud Detection

Professional skepticism is widely acknowledged as a fundamental attribute of auditors in performing effective audits and detecting fraud. According to International Standard on Auditing (ISA) 200, professional skepticism refers to an attitude that includes a questioning mind, alertness to conditions indicating possible misstatement due to fraud or error, and a critical assessment of audit evidence. Rather than accepting information at face value, auditors exercising professional skepticism continuously evaluate the reliability, sufficiency, and consistency of available evidence before reaching professional conclusions. In this sense, professional skepticism is not merely a personal characteristic but an essential element of sound audit judgment.

The importance of professional skepticism becomes increasingly evident in fraud detection because fraudulent activities are often intentionally concealed through document manipulation, collusion, management override, or misleading financial information. Consequently, auditors are expected not only to verify compliance with established procedures but also to question unusual transactions and investigate inconsistencies that may indicate fraudulent behaviour. Within higher education institutions, where financial management involves multiple funding sources, procurement processes, research grants, and diverse stakeholders, professional skepticism plays a crucial role in ensuring that potential fraud indicators are not overlooked during audit engagements.

Empirical evidence consistently supports the contribution of professional skepticism to fraud detection. Hurtt (2010) conceptualized professional skepticism as a multidimensional construct consisting of a questioning mind, suspension of judgment, search for knowledge, interpersonal understanding, autonomy, and self-confidence. Building on this framework, subsequent studies have shown that auditors with higher levels of professional skepticism are more capable of identifying fraud indicators, critically evaluating audit evidence, and making more reliable audit judgments (Hamshari et al., 2021; Hasanah et al., 2024). These findings suggest that professional skepticism strengthens auditors' ability to detect material misstatements and fraudulent activities that might otherwise remain undetected.

Despite this growing body of evidence, previous studies have largely treated professional skepticism as an individual behavioural characteristic of auditors. Comparatively less attention has been given to understanding how professional skepticism operates within increasingly digital audit environments, particularly in higher education institutions. As organizations continue to generate larger volumes of digital information, auditors are required to process more complex evidence within shorter timeframes. Under these conditions,

professional skepticism remains indispensable; however, its effectiveness increasingly depends on the availability of analytical support capable of assisting auditors in identifying anomalies, evaluating patterns, and interpreting complex information without compromising their professional judgment.

Drawing upon the concept of professional skepticism and prior empirical evidence, this study argues that auditors with higher levels of professional skepticism are better equipped to critically evaluate audit evidence, identify fraud indicators, and improve fraud detection effectiveness within higher education institutions. Nevertheless, as fraud schemes become more sophisticated and data-intensive, professional judgment alone may not always be sufficient to process the growing complexity of audit evidence. Consequently, organizations require technological capabilities that complement—rather than replace—auditors' professional skepticism in strengthening fraud detection. Therefore, the following hypothesis is proposed:

H2: *Professional Skepticism positively influences Fraud Detection Effectiveness in Higher Education Institutions.*

Artificial Intelligence Readiness as an Enabling Capability for Fraud Detection

The increasing complexity of organizational fraud has shifted the discussion from whether Artificial Intelligence (AI) can support fraud detection to whether organizations are sufficiently prepared to adopt and integrate intelligent technologies into their governance processes. Advances in machine learning, predictive analytics, natural language processing, anomaly detection, and continuous auditing have significantly expanded the potential of AI in assisting fraud detection. However, the successful implementation of these technologies depends not only on technological availability but also on an organization's readiness to utilize them effectively. Accordingly, this study views Artificial Intelligence Readiness as an organizational capability that enables institutions to maximize the benefits of intelligent technologies in fraud detection.

Rather than replacing auditors or organizational governance mechanisms, Artificial Intelligence Readiness reflects an organization's capability to integrate technology into existing fraud detection processes. This capability encompasses technological infrastructure, data availability, organizational support, human competencies, and institutional commitment to digital transformation. When these conditions are present, intelligent technologies are expected to complement whistleblowing systems by facilitating the analysis of reported information and supporting auditors in processing increasingly complex audit evidence. Therefore, AI should be understood as an enabling capability that strengthens governance rather than an autonomous solution for fraud detection.

Previous studies generally report that Artificial Intelligence contributes positively to fraud detection through faster data processing, anomaly identification, continuous monitoring, and predictive analytics. Nevertheless, the existing literature predominantly conceptualizes AI as a technological tool whose effectiveness is assumed to derive from the technology itself. Relatively limited attention has been given to the organizational conditions required for successful AI implementation, particularly within higher education institutions where governance structures, resource availability, and digital maturity vary considerably. Consequently, evidence explaining how organizational readiness influences the contribution of AI to fraud detection remains limited.

This study argues that the effectiveness of Artificial Intelligence depends not only on technological sophistication but also on organizational readiness to adopt and utilize intelligent technologies. Organizations that are better prepared to implement AI are

expected to improve fraud detection directly while simultaneously enhancing the effectiveness of whistleblowing systems and auditors' professional skepticism. In this perspective, Artificial Intelligence Readiness functions as an enabling organizational capability that supports—rather than replaces—human professional judgment and existing governance mechanisms.

Drawing upon the Dynamic Capability perspective and prior empirical evidence, this study proposes that Artificial Intelligence Readiness positively contributes to fraud detection effectiveness and strengthens the relationships between Whistleblowing Systems, Professional Skepticism, and Fraud Detection Effectiveness. Therefore, the following hypotheses are proposed:

H3: *Artificial Intelligence Readiness positively influences Fraud Detection Effectiveness in Higher Education Institutions.*

H4: *Artificial Intelligence Readiness positively moderates the relationship between Whistleblowing Systems and Fraud Detection Effectiveness.*

H5: *Artificial Intelligence Readiness positively moderates the relationship between Professional Skepticism and Fraud Detection Effectiveness.*

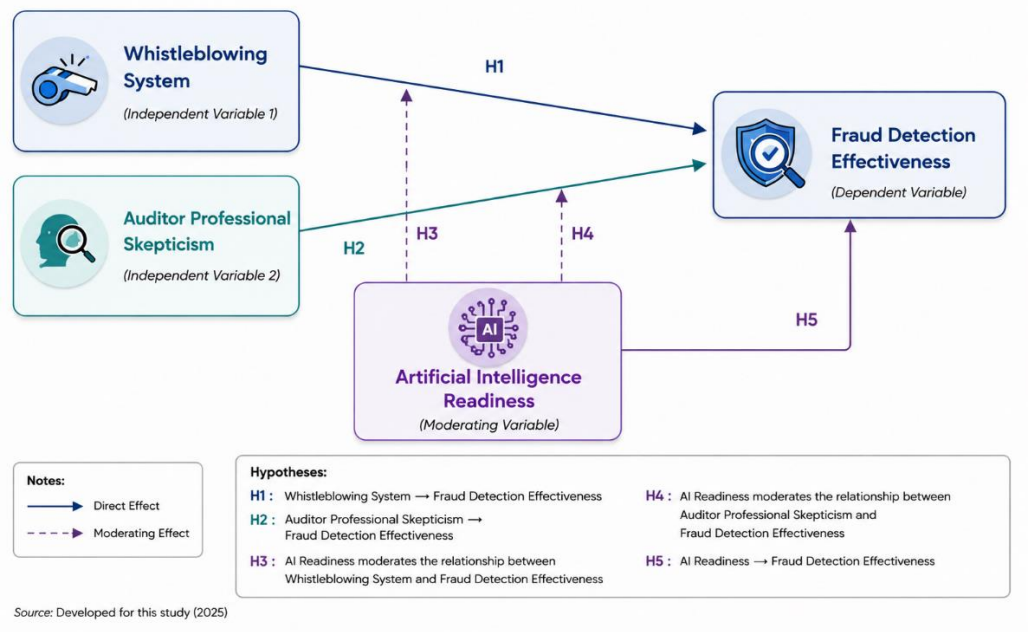


Figure 1. Conseptual Framewrork

RESEARCH METHODOLOGY

Research Design

This study adopts a quantitative research approach using a cross-sectional survey design to examine the relationships among Whistleblowing Systems, Professional Skepticism, Artificial Intelligence Readiness, and Fraud Detection Effectiveness in higher education institutions. A quantitative approach is considered appropriate because the study aims to empirically test the proposed hypotheses and evaluate the moderating role of Artificial Intelligence Readiness using Structural Equation Modeling.

Population and Sample

The target population consists of internal auditors, members of Internal Supervisory Units (SPI), and university personnel responsible for governance, internal control, and fraud prevention in Indonesian higher education institutions. These respondents were selected because they possess relevant knowledge and practical experience regarding whistleblowing

implementation, auditing practices, and the adoption of Artificial Intelligence in organizational governance.

The sample is determined using purposive sampling. Respondents are required to have direct involvement in internal supervision, auditing, governance, or fraud prevention activities. Data are collected through a structured questionnaire distributed electronically to eligible respondents.

This study examines four variables. Whistleblowing System and Professional Skepticism are treated as independent variables, Fraud Detection Effectiveness serves as the dependent variable, and Artificial Intelligence Readiness is specified as the moderating variable. All constructs are measured using multi-item indicators adapted from established studies and assessed using a five-point Likert scale ranging from 1 ("strongly disagree") to 5 ("strongly agree").

Variable Measurement

Table. 1 Variable Measurement

Variable	Role	Source
Whistleblowing System	Independent	Miceli et al. (2008); Paranoan et al. (2024)
Professional Skepticism	Independent	Hurtt (2010)
Artificial Intelligence Readiness	Moderator	Diadaptasi dari AI readiness / digital readiness literature
Fraud Detection Effectiveness	Dependent	ACFE; penelitian fraud detection terbaru

Source : Developed for this study (2026)

Data Analysis

The collected data are analyzed using Partial Least Squares Structural Equation Modeling (PLS-SEM) with SmartPLS software. The measurement model is evaluated through indicator reliability, internal consistency reliability, convergent validity, and discriminant validity.

The structural model is subsequently assessed using the coefficient of determination (R^2), predictive relevance (Q^2), effect size (f^2), and bootstrapping procedures for hypothesis testing. The moderating role of Artificial Intelligence Readiness is examined using the interaction effect approach in PLS-SEM.

RESULTS AND DISCUSSION

Respondent Characteristics

A total of 115 valid responses were obtained from internal auditors, members of Internal Supervisory Units (SPI), and university personnel responsible for governance and fraud prevention across Indonesian higher education institutions. The respondents represent individuals with direct involvement in internal control, auditing, and institutional governance, making them well positioned to evaluate whistleblowing systems, professional skepticism, Artificial Intelligence Readiness, and fraud detection practices.

Prior to hypothesis testing, the measurement model was evaluated to ensure the reliability and validity of the research constructs. The results indicate that all constructs met the recommended thresholds for indicator reliability, internal consistency reliability, convergent validity, and discriminant validity. These findings confirm that the measurement model is appropriate for subsequent structural model analysis.

Hypothesis Testing

The structural model was assessed using Partial Least Squares Structural Equation Modeling (PLS-SEM) with the bootstrapping

procedure. Table 2 summarizes the results of the hypothesis testing.

The results indicate that the Whistleblowing System has a positive and significant effect on Fraud Detection Effectiveness ($\beta = 0.336$, $p < 0.001$), supporting H1. This finding suggests that an effective whistleblowing system enables higher education institutions to identify potential fraud at an earlier stage by providing secure and confidential reporting channels. The result supports the argument of Agency Theory that whistleblowing mechanisms reduce information asymmetry and strengthen organizational accountability. It also corroborates previous studies by Miceli et al. (2008), Paranoan et al. (2024), and the ACFE (2024), which identify whistleblower reports as one of the most effective sources of occupational fraud detection. In the context of higher education, the findings imply that universities should not only establish formal whistleblowing channels but also ensure organizational commitment to investigating and responding to reported misconduct.

Table 2. Hypothesis Testing

Hypothesis	Path	β	t-value	p-value	Decision
H1	WBS → Fraud Detection	0.336	6.786	<0.001	Supported
H2	Professional Skepticism → Fraud Detection	0.429	7.288	<0.001	Supported
H3	AI Readiness × WBS → Fraud Detection	0.019	2.667	0.008	Supported
H4	AI Readiness × Professional Skepticism → Fraud Detection	0.021	0.591	0.554	Not Supported
H5	AI Readiness → Fraud Detection	0.209	3.914	<0.001	Supported

Source: Developed by the authors (2026)

Whistleblowing System and Fraud Detection Effectiveness

The empirical results indicate that the Whistleblowing System has a positive and significant effect on Fraud Detection Effectiveness ($\beta = 0.336$, $t = 6.786$, $p < 0.001$), supporting H1. This finding suggests that the availability of secure and confidential reporting channels enables higher education institutions to identify fraudulent activities more effectively by encouraging employees and stakeholders to disclose suspected misconduct. In organizations characterized by multiple funding sources and complex financial transactions, such as universities, whistleblowing systems serve as an important mechanism for revealing information that is often inaccessible through routine monitoring or conventional audit procedures.

From the perspective of **Agency Theory**, this finding confirms that whistleblowing systems reduce information asymmetry between principals and agents by facilitating the disclosure of information that would otherwise remain concealed (Jensen & Meckling, 1976). Unlike traditional internal controls that primarily rely on periodic supervision, whistleblowing systems provide an additional layer of governance by allowing potential fraud to be reported directly by individuals who possess first-hand knowledge of organizational misconduct. Consequently, the effectiveness of fraud detection is strengthened because organizations gain earlier access to information that may indicate irregularities or unethical behaviour.

The present findings reinforce previous empirical evidence. Miceli et al. (2008) argued that whistleblowing mechanisms become effective only when organizations

establish not only confidential reporting channels but also credible procedures for investigating reported misconduct and protecting whistleblowers. Likewise, Paranoan et al. (2024) demonstrated that organizational support and ethical awareness significantly encourage whistleblowing behaviour, thereby improving fraud reporting. These findings are further supported by the Association of Certified Fraud Examiners (ACFE, 2024), which consistently reports that whistleblower tips remain the most effective source of occupational fraud detection, often identifying fraudulent activities earlier than internal audits or management reviews.

These findings offer important implications for higher education governance. Establishing a whistleblowing system should not be regarded merely as fulfilling regulatory requirements or demonstrating institutional compliance. Instead, universities should position whistleblowing as a strategic governance mechanism that strengthens transparency, accountability, and institutional integrity. To achieve this objective, confidential reporting channels must be accompanied by whistleblower protection, transparent investigation procedures, and strong managerial commitment to responding appropriately to reported misconduct. Strengthening these governance practices will enable higher education institutions to improve fraud detection effectiveness while fostering a culture of ethical accountability.

Professional Skepticism and Fraud Detection Effectiveness

Professional Skepticism was also found to have a positive and significant effect on Fraud Detection Effectiveness ($\beta = 0.429$, $t = 7.288$, $p < 0.001$), supporting H2. This finding indicates that auditors who consistently maintain a questioning mindset and critically evaluate audit evidence are more capable of identifying fraud indicators than those who rely solely on routine audit procedures. In higher education institutions, where financial transactions involve research grants, procurement activities, scholarships, and multiple funding sources, professional skepticism enables auditors to recognize unusual patterns, challenge inconsistent information, and investigate potential irregularities before they develop into more significant organizational problems.

This finding is consistent with the concept of professional skepticism as defined in **International Standard on Auditing (ISA) 200**, which emphasizes that auditors should maintain a questioning mind and critically assess audit evidence throughout the audit process. Rather than accepting explanations or documentation at face value, professionally skeptical auditors continuously evaluate the reliability, sufficiency, and consistency of available evidence before forming audit conclusions. Consequently, professional skepticism serves not only as an individual characteristic but also as an essential professional competency that enhances the quality of fraud detection.

The present findings corroborate the work of Hurtt (2010), who conceptualized professional skepticism as a multidimensional construct consisting of a questioning mind, suspension of judgment, search for knowledge, interpersonal understanding, autonomy, and self-confidence. They are also consistent with the findings of Hamshari et al. (2021) and Hasanah et al. (2024), which demonstrate that auditors with higher levels of professional skepticism are better able to identify fraud indicators, evaluate audit evidence objectively, and produce more reliable audit judgments. Collectively, these studies suggest that professional skepticism remains one of the most important human capabilities in detecting fraud, particularly in organizations facing increasingly complex governance challenges.

From a practical perspective, these findings imply that strengthening fraud detection in higher education institutions requires more than technological investment or formal governance mechanisms. Universities must also invest in developing auditors'

professional competencies through continuous training, professional education, and practical experience that reinforce critical thinking and objective judgment. As fraud schemes become increasingly sophisticated and supported by digital technologies, professional skepticism remains indispensable because effective fraud detection ultimately depends on auditors' ability to interpret evidence critically and make sound professional judgments.

Artificial Intelligence Readiness as an Enabling Organizational Capability

An interesting pattern emerges from the findings related to Artificial Intelligence Readiness (AIR). While AIR demonstrates a significant direct effect on Fraud Detection Effectiveness and strengthens the contribution of the Whistleblowing System, it does not significantly enhance the relationship between Professional Skepticism and Fraud Detection Effectiveness. This combination of findings suggests that the contribution of Artificial Intelligence to fraud detection is selective rather than universal. Instead of functioning as an autonomous technological solution, Artificial Intelligence appears to create greater value when organizations are adequately prepared to integrate intelligent technologies into their existing governance processes.

The empirical results indicate that Artificial Intelligence Readiness has a positive and significant direct effect on Fraud Detection Effectiveness ($\beta = 0.209$, $t = 3.914$, $p < 0.001$), supporting H5. This finding implies that organizations with higher levels of readiness to adopt and utilize Artificial Intelligence are better positioned to improve fraud detection capabilities. From the perspective of **Dynamic Capability Theory** (Teece et al., 1997), organizational performance is influenced not merely by possessing advanced technologies but by the capability to integrate, deploy, and continuously adapt those technologies in response to environmental challenges. In the context of higher education institutions, AI readiness reflects the institution's preparedness in terms of technological infrastructure, data availability, organizational support, and human competencies required to utilize intelligent technologies effectively. Therefore, improving fraud detection is not simply a matter of investing in Artificial Intelligence, but of ensuring that institutions possess the organizational capability to adopt and implement AI successfully.

Beyond its direct contribution, Artificial Intelligence Readiness also significantly strengthens the relationship between the Whistleblowing System and Fraud Detection Effectiveness ($\beta = 0.019$, $t = 2.667$, $p = 0.008$), supporting H3. This finding suggests that organizations with greater AI readiness are better able to transform whistleblowing reports into meaningful information for fraud detection. Whistleblowing systems generate valuable reports regarding suspected misconduct; however, the effectiveness of these reports depends on how efficiently organizations process, analyse, and respond to the information received. Organizations that are more prepared to adopt Artificial Intelligence are likely to benefit from intelligent data analytics, automated report classification, anomaly detection, and real-time monitoring, thereby enabling reported information to be evaluated more accurately and promptly. These findings reinforce the argument that Artificial Intelligence should be viewed as an enabling organizational capability that strengthens governance mechanisms rather than replacing them.

In contrast, Artificial Intelligence Readiness does not significantly moderate the relationship between Professional Skepticism and Fraud Detection Effectiveness ($\beta = 0.021$, $t = 0.591$, $p = 0.554$), leading to the rejection of H4. Although Artificial Intelligence can improve data processing and analytical efficiency, professional skepticism remains fundamentally a cognitive and behavioural capability that relies on auditors' critical thinking, professional judgment, and

accumulated experience. The ability to question evidence, recognize inconsistencies, and evaluate complex audit situations cannot be developed solely through technological readiness. Consequently, while Artificial Intelligence can support auditors by providing more comprehensive and timely information, the ultimate responsibility for interpreting audit evidence and exercising professional judgment remains with the auditor. This finding highlights that intelligent technologies complement—rather than substitute—the human capabilities required for effective fraud detection.

Taken together, these findings extend the current understanding of Artificial Intelligence in fraud detection. Unlike previous studies that primarily conceptualize Artificial Intelligence as a technological tool, this study demonstrates that the effectiveness of AI depends on an organization's readiness to adopt and integrate intelligent technologies into its governance processes. Artificial Intelligence Readiness therefore functions as an enabling organizational capability that directly enhances fraud detection and strengthens selected governance mechanisms, particularly the Whistleblowing System. However, the insignificant moderating effect on Professional Skepticism confirms that technology cannot replace auditors' cognitive judgment. Effective fraud detection in higher education is therefore achieved through the integration of organizational governance, human expertise, and technological readiness rather than through technology alone.

CONCLUSION

This study examined the effects of Whistleblowing Systems, Professional Skepticism, and Artificial Intelligence Readiness on Fraud Detection Effectiveness within higher education institutions. The findings demonstrate that both Whistleblowing Systems and Professional Skepticism positively contribute to fraud detection effectiveness. In addition, Artificial Intelligence Readiness exerts a significant direct effect on fraud detection and strengthens the contribution of Whistleblowing Systems. However, Artificial Intelligence Readiness does not significantly moderate the relationship between Professional Skepticism and Fraud Detection Effectiveness, suggesting that professional judgment remains fundamentally dependent on auditors' cognitive capabilities rather than technological readiness alone.

This study makes several important contributions to the literature. First, it extends existing fraud detection research by integrating governance mechanisms, human judgment, and technological capability into a single conceptual framework. Second, unlike previous studies that primarily conceptualize Artificial Intelligence as a technological tool, this study positions Artificial Intelligence Readiness as an enabling organizational capability that supports the implementation of governance mechanisms without replacing auditors' professional judgment. These findings reinforce the view that successful digital transformation in auditing depends not only on technological investment but also on organizational readiness to effectively integrate intelligent technologies into fraud detection processes.

From a practical perspective, the findings suggest that universities should strengthen whistleblowing systems, continuously develop auditors' professional competencies, and improve institutional readiness for Artificial Intelligence adoption as complementary strategies for enhancing fraud detection. This study is limited to the quantitative examination of higher education institutions in Indonesia. Future studies are encouraged to incorporate qualitative approaches to explore organizational experiences, implementation challenges, and institutional factors that influence Artificial Intelligence adoption in fraud detection. Comparative studies across countries or sectors may also provide broader insights into the role of Artificial Intelligence Readiness in

strengthening organizational governance and fraud prevention.

RECOMMENDATION (Optional)

Based on the findings, higher education institutions are encouraged to strengthen fraud detection through an integrated approach that combines effective whistleblowing systems, continuous development of auditors' professional competencies, and organizational readiness for Artificial Intelligence adoption. Rather than viewing AI as a substitute for auditors, universities should position intelligent technologies as strategic tools that support governance mechanisms and professional judgment. Future institutional policies should therefore emphasize not only technological investment but also human resource development, data governance, and organizational readiness to maximize the benefits of Artificial Intelligence in fraud detection.

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