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Research Article

The Impact of Professional Education, Independence, and Integrity on Fraud Detection: The Role of Internal Control Detection, Risk-Based Audits, and Good Corporate Governance as a Moderating Variable

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ABSTRACT

Introduction: Fraud in State-Owned Enterprises (SOEs) in Indonesia remains a significant issue due to its impact on the national economy and public trust. High-profile cases involving SOEs, such as PT Jiwasraya and PT Garuda Indonesia, demonstrate that existing internal control systems are insufficient in detecting fraud.

Objectives: This study aims to analyze the impact of professional education, independence, and integrity of auditors on their fraud detection capabilities through internal control detection and risk-based audits, with Good Corporate Governance (GCG) as a moderating variable in State-Owned Enterprises (SOEs) in East Java.

Methods: The research employs a quantitative approach using PLS-SEM analysis to test the relationships between the variables.

Results: The findings indicate that professional education has a significant positive impact on internal control detection, risk-based audits, and fraud detection. Independence significantly affects internal control detection and risk-based audits, though it does not directly impact fraud detection. Auditor integrity positively affects both internal control detection and fraud detection, but does not significantly influence risk-based audits. Furthermore, Good Corporate Governance strengthens the impactof internal control detection on fraud detection, while weakening the impactof risk-based audits on fraud detection.

Conclusions: This study suggests enhancing auditor professional education, strengthening auditor independence and integrity, and applying Good Corporate Governance principles in SOEs to improve the effectiveness of oversight and fraud detection. By Introducing new concepts such as the integration of internal control detection and risk-based audits, along with the moderating role of GCG, this study makes a significant contribution to strengthening the oversight system in the SOE sector.

Keywords: Professional Education, Independence, Integrity, Internal Control Detection, Risk-Based Audit, Fraud Detection, Good Corporate Governance.

INTRODUCTION

Fraud in State-Owned Enterprises (SOEs) in Indonesia remains a significant issue due to its impact on the national economy and public trust. High-profile cases involving SOEs, such as PT Jiwasraya and PT Garuda Indonesia, demonstrate that existing internal control systems are insufficient in detecting fraud. Internal auditors play a crucial role in fraud detection through overseeing internal control systems and conducting risk-based audits.

Internal auditors are essential in identifying and detecting fraud within organizations. They are responsible for ensuring the proper functioning of internal control systems and performing thorough risk-based audits. Without effective fraud detection, the risk of financial and operational discrepancies increases, potentially harming the company and damaging its reputation (Ratnawati Tri and Hidayat Widi 2022).

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An auditor's ability to detect fraud is influenced by various factors, including professional education, independence, and integrity. Higher education strengthens auditors' skills in recognizing potential fraud. Independence allows auditors to perform their duties free from external pressures, while integrity ensures auditors work objectively and honestly when evaluating reports and control systems.

Auditing refers to the service provided by auditors to examine financial statements presented by clients. The purpose of auditing is to determine whether there are material misstatements or fraud. Financial statement audits assess the fairness of the financial statements based on accounting standards. According to (Agoes Sukrisno 2013), auditing is a systematic and critical examination conducted by an independent party on financial statements prepared by management, including accounting records and supporting evidence, aiming to provide an opinion on the fairness of these financial statements. Meanwhile, (Arens 2018) defines auditing as the collection and evaluation of evidence about information to determine and report the degree of conformity between the information and established criteria.

Fraud prevention consists of various actions designed to reduce the likelihood of fraud occurring and to limit or mitigate the potential losses if fraud does occur. Fraud prevention is the responsibility of management. Ramaraya (Ramaraya Koroy 2008), argues that fraud, being an intentional act undetectable by auditing, can lead to significant damage and flaws in the financial reporting process. Fraud can have serious consequences and result in substantial losses.

Professional education, independence, and integrity are the primary factors affecting the effectiveness of audits. This study aims to examine how these factors influence fraud detection among auditors in SOEs in East Java. Furthermore, it also assesses the role of Good Corporate Governance (GCG) in moderating the relationship between internal control detection, risk-based auditing, and fraud detection.

The importance of fraud detection goes beyond avoiding financial losses; it also serves to maintain public trust in the organization. Effective internal control systems, risk-based audits, and good corporate governance are interconnected factors that ensure the organization operates with transparency and accountability. This study focuses on the impact of various internal auditor factors on their ability to detect fraud and provides insights into the importance of education and professional competence in supporting auditor performance.

Professional Education of Auditors

Auditor professional education plays a crucial role in enhancing auditors' competencies in detecting fraud. Education not only includes formal schooling but also professional certifications and continuous training, which can improve auditors' technical skills in analyzing financial statements and internal control systems. According to, (Hamilah et al., 2019), professional education improves auditors' ability to understand and apply effective auditing techniques for detecting discrepancies and fraud.

Auditor Independence

Auditor independence is a fundamental principle in auditing, ensuring objectivity in evaluating internal control systems and financial statements. (Mulyadi 2016), states that auditor independence is crucial to maintaining audit quality and ensuring auditors can assess fraud risks objectively without external influence. Without independence, auditors may be influenced by internal or external pressures, potentially compromising the accuracy of the audit results.

Auditor Integrity

Auditor integrity refers to honesty, transparency, and commitment to adhering to professional ethical codes. (Shinta Adelia Sari, Enggar Diah Puspa Arum, and Fredy Olimsar 2023) emphasize that auditor integrity is directly related to fraud detection quality. Auditors with high integrity tend to be more meticulous and transparent when analyzing data and reporting audit findings without fear of external pressure. Integrity also increases public trust in the results of internal audits.

Internal Control Detection

According to (Mcleond Raymond 2008), internal control detection is designed to identify errors when data is transferred from source media to a computer system. Internal control detection is part of the internal control system

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aimed at identifying, finding, and reporting errors, deviations, or issues that occur in organizational activities, whether operational or financial.

Risk-Based Auditing

An effective internal control system helps auditors detect and prevent potential fraud. Internal control detection focuses on identifying and preventing errors or fraud at an early stage. Risk-based auditing, as described by (Arens 2018), is an approach that allows auditors to assess and evaluate areas with higher risk levels, ensuring that audit efforts are concentrated on areas most vulnerable to fraud and discrepancies.

Good Corporate Governance (GCG)

Good Corporate Governance (GCG) refers to principles of transparency, accountability, and fairness in organizational management. The application of good GCG creates an environment that minimizes the potential for fraud and enhances internal supervision. According (Timothy P. Hedley and Richard H. Girgenti 2021), GCG plays an essential role in strengthening internal control systems and improving fraud detection effectiveness. Well-implemented GCG helps establish transparent and accountable mechanisms, reducing the risk of fraud within an organization.

This study introduces new elements to the literature on fraud detection in SOEs with a comprehensive approach to testing the factors influencing audit effectiveness. By integrating concepts such as internal control and risk-based auditing, as well as the moderating role of GCG, this research significantly contributes to strengthening oversight systems in the SOE sector.

METHODS

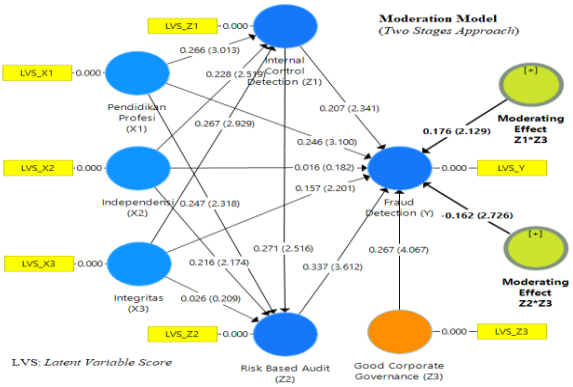
This research uses a quantitative design with a survey approach to collect data from internal auditors at State-Owned Enterprises (SOEs) located in East Java. Data collected through questionnaires will be analyzed using Partial Least Squares Structural Equation Modeling (PLS-SEM). This approach was chosen for its ability to test complex relationships between variables and address issues such as multicollinearity and limited sample sizes.

The population for this study consists of all internal auditors working at SOEs in East Java. A total of 115 auditors meet the criteria for this research. A purposive sampling technique was employed to select auditors with specific qualifications, such as experience in operational and administrative auditing.

RESULTS

The conceptual model in this study includes a moderating variable, which is Good Corporate Governance (Z3). In PLS-SEM, a conceptual model with a moderating effect can be resolved through two stages. According to Hair et al. (2017), testing the moderation effect in SEM, whether covariance-based (CB-SEM) or variance-based (PLS-SEM), cannot be done using the product indicator approach as in path analysis but requires a two-stage approach. The results of direct effects, indirect effects, and total effects were estimated from the main model (see Figure 5.3), while the moderating effect was tested using the PLS-SEM model interaction results from the two-stage approach (see Figure 3.1).

Figure 3.1
Results of SEM Moderating Model Estimation (2-Stage Approach)



Source: Research data, processed (2024)

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Analysis of Direct Effects

The significance testing of the path relationships between variables according to the research hypothesis was performed using SmartPLS software, utilizing the path coefficient table from the bootstrapping results of the main model (Figure 4.1). In the two-tailed test, the research hypothesis is accepted if the t-statistic value (T-statistic) is ≥ 1.96 or the p-value is less than the error level (α) of 5%. The following table shows the path coefficients (original sample estimate), t-statistics, and p-values from the PLS bootstrapping results:

Table 3.1
Results of Direct Effects Significance Test

No	Direct Effect	Coeff.	T-Stat	P-Values	Conclusion
1	Professional Education (X1) → Internal Control Detection (Z1)	0,266	3,275	0,001	H_1 Accepted
2	Professional Education (X1) → Risk-Based Audit (Z2)	0,246	2,393	0,017	H_2 Accepted
3	Professional Education (X1) → Fraud Detection (Y)	0,259	3,445	0,001	H_3 Accepted
4	Independence (X2) → Internal Control Detection (Z1)	0,228	2,727	0,007	H_4 Accepted
5	Independence (X2) → Risk-Based Audit (Z2)	0,216	2,299	0,022	H_5 Accepted
6	Independence (X2) → Fraud Detection (Y)	0,014	0,159	0,874	H_6 Rejected
7	Integrity (X3) → Internal Control Detection (Z1)	0,267	2,785	0,006	H_7 Accepted
8	Integrity (X3) → Risk-Based Audit (Z2)	0,026	0,213	0,832	H_8 Rejected
9	Integrity (X3) → Fraud Detection (Y)	0,168	2,219	0,027	H_9 Accepted
10	Internal Control Detection (Z1) → Risk-Based Audit (Z2)	0,271	2,516	0,012	H_{10} Accepted
11	Internal Control Detection (Z1) → Fraud Detection (Y)	0,169	2,067	0,039	H_{11} Accepted
12	Risk-Based Audit (Z2) → Fraud Detection (Y)	0,359	3,977	0,000	H_{12} Accepted

Source: Research data, processed (2024)

1. Professional Education has a positive and significant impacton internal control detection, with a coefficient of 0.266 (positive), T-statistic of 3.275 (≥1.96), and p-value of 0.001 (≤5%). Therefore, it is concluded that professional education positively influences internal control detection, meaning that the higher the auditor's professional education, the better the internal control detection. Hypothesis 1 is accepted.
2. Professional Education also has a positive and significant impacton risk-based auditing, with a coefficient of 0.246 (positive), T-statistic of 2.393 (≥1.96), and p-value of 0.017 (≤5%). Therefore, it is concluded that professional education positively influences risk-based auditing, meaning that the higher the professional education of the auditor, the better the risk-based audit process. Hypothesis 2 is accepted.
3. Professional Education significantly affects fraud detection with a coefficient of 0.259 (positive), T-statistic of 3.445 (≥1.96), and p-value of 0.001 (≤5%). Therefore, it is concluded that professional education positively influences fraud detection, meaning that the higher the auditor's professional education, the better their ability to detect fraud. Hypothesis 3 is accepted.

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4. Independence has a positive and significant impacton internal control detection, with a coefficient of 0.228 (positive), T-statistic of 2.727 (≥1.96), and p-value of 0.007 (≤5%). This shows that the higher the auditor's independence, the better the internal control detection. Hypothesis 4 is accepted.
5. Independence also has a positive and significant impacton risk-based auditing, with a coefficient of 0.216 (positive), T-statistic of 2.299 (≥1.96), and p-value of 0.022 (≤5%). Thus, the higher the auditor's independence, the better the risk-based audit process. Hypothesis 5 is accepted.
6. Independence does not significantly affect fraud detection, with a coefficient of 0.014, T-statistic of 0.159 (<1.96), and p-value of 0.874 (>5%). This indicates that independence does not significantly influence fraud detection. Hypothesis 6 is rejected.
7. Integrity has a positive and significant impacton internal control detection, with a coefficient of 0.267 (positive), T-statistic of 2.785 (≥1.96), and p-value of 0.006 (≤5%). This means that the higher the integrity of internal auditors, the better the internal control detection. Hypothesis 7 is accepted.
8. Integrity does not significantly affect risk-based auditing, with a coefficient of 0.026, T-statistic of 0.213 (>1.96), and p-value of 0.832 (>5%). This shows that integrity does not significantly affect the risk-based auditing process. Hypothesis 8 is rejected.
9. Integrity has a positive and significant impacton fraud detection, with a coefficient of 0.168 (positive), T-statistic of 2.219 (≥1.96), and p-value of 0.027 (≤5%). This implies that the higher the integrity of the auditor, the better their ability to detect fraud. Hypothesis 9 is accepted.
10. Internal Control Detection has a positive and significant impacton risk-based auditing, with a coefficient of 0.271 (positive), T-statistic of 2.516 (≥1.96), and p-value of 0.012 (≤5%). This means that the higher the internal control detection, the better the risk-based auditing process. Hypothesis 10 is accepted.
11. Internal Control Detection has a positive and significant impacton fraud detection, with a coefficient of 0.169 (positive), T-statistic of 2.067 (≥1.96), and p-value of 0.039 (≤5%). Therefore, it is concluded that the better the internal control detection, the better the ability to detect fraud. Hypothesis 11 is accepted.
12. Risk-Based Auditing significantly affects fraud detection with a coefficient of 0.359 (positive), T-statistic of 3.977 (≥1.96), and p-value of 0.000 (≤5%). This suggests that the higher the effectiveness of risk-based auditing, the better the ability to detect fraud. Hypothesis 12 is accepted.

Analysis of Indirect Effects

Analysis of indirect effects was conducted to determine the role of internal control detection and risk-based auditing in mediating the effects of professional education, independence, and integrity on fraud detection. As in the direct effects analysis, the research hypothesis is accepted if the t-statistic value (T-statistic) is ≥ 1.96 or if the p-value is less than the error level (α) of 5%. In the analysis of indirect effects, besides determining the significance of indirect effects or mediation effects, the nature of the mediation can also be understood.

The nature of mediation can be determined by the mediation impactitself: if the direct impactof an exogenous variable on an endogenous variable is significant and the indirect impactthrough the mediation variable is also significant, it is referred to as partial mediation or complementary mediation. Conversely, if the direct impactof an exogenous variable on an endogenous variable is not significant, while the indirect impactthrough the mediation variable is significant, it is referred to as full mediation or perfect mediation (Baron & Kenny, 1986; Zhao et al., 2010).

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Table 3.2 Results of Indirect Effects Significance Test

No	Indirect Effect	*Coeff.*	*T-Stat*	*P-Values*	Mediation Type
1	Professional Education (X1) → Internal Control Detection (Z1) → Fraud Detection (Y)	0,045	2,045	0,041	*Partially mediation*
2	Independence (X2) → Internal Control Detection (Z1) → Fraud Detection (Y)	0,039	2,167	0,031	*Fully mediation*
3	Integrity (X3) → Internal Control Detection (Z1) → Fraud Detection (Y)	0,045	2,143	0,033	*Partially mediation*
4	Professional Education (X1) → Risk-Based Audit (Z2) → Fraud Detection (Y)	0,088	2,378	0,018	*Partially mediation*
5	Independence (X2) → Risk-Based Audit (Z2) → Fraud Detection (Y)	0,078	2,294	0,022	*Fully mediation*
6	Integrity (X3) → Risk-Based Audit (Z2) → Fraud Detection (Y)	0,009	0,250	0,803	*No mediation*

Source: Research data, processed (2024)

The indirect impact of Professional Education on fraud detection through internal control detection is significant (p-value = 0.041 < α = 0.05), with a coefficient of 0.045. The mediation is partial, meaning that professional education can influence fraud detection directly, as well as indirectly through internal control detection. This suggests that enhancing fraud detection can be achieved by increasing professional education, but focusing on improving internal control detection will enhance this effect.

The indirect impact of Independence on fraud detection through internal control detection is also significant (p-value = 0.031 < α = 0.05), with a coefficient of 0.039. The mediation is full, meaning that independence only affects fraud detection indirectly through internal control detection. Thus, increasing fraud detection requires focusing on internal control detection in addition to enhancing auditor independence.

The indirect impact of Integrity on fraud detection through internal control detection is significant (p-value = 0.033 < α = 0.05), with a coefficient of 0.045. This indicates that integrity can influence fraud detection directly, as well as indirectly through internal control detection, making the mediation partial. This means improving fraud detection can be achieved by improving auditor integrity, but focusing on internal control detection will further strengthen this effect.

The indirect impact of Professional Education on fraud detection through risk-based auditing is significant (p-value = 0.018 < α = 0.05), with a coefficient of 0.088. The mediation is partial, meaning that professional education can affect fraud detection directly or indirectly through risk-based auditing. This suggests that fraud detection can be enhanced by increasing professional education, but also by incorporating risk-based audit techniques.

The indirect impact of Independence on fraud detection through risk-based auditing is significant (p-value = 0.022 < α = 0.05), with a coefficient of 0.078. The mediation is full, indicating that independence affects fraud detection only through risk-based auditing. Thus, increasing fraud detection depends on focusing both on enhancing auditor independence and applying risk-based auditing.

The indirect impact of Integrity on fraud detection through risk-based auditing is not significant (p-value = 0.803 > α = 0.05), meaning risk-based auditing does not mediate the relationship between integrity and fraud detection.

The results of the indirect impact analysis indicate that both internal control detection and risk-based auditing play significant roles as mediators between the independent variables (professional education, independence, and integrity) and fraud detection. Specifically, internal control detection acts as a partial mediator in the relationships between professional education and integrity with fraud detection, and as a full mediator in the relationship between independence and fraud detection. Meanwhile, risk-based auditing partially mediates the impactof professional

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education on fraud detection and fully mediates the impactof independence, but it does not mediate the impactof integrity on fraud detection.

Therefore, SOEs should strengthen the role of internal control detection and risk-based auditing as key elements of internal control systems to support effective fraud detection. A strong internal control detection system can optimize the positive impacts of professional education, integrity, and independence on fraud detection. Additionally, the implementation of risk-based auditing should be enhanced, especially in ensuring more effective auditor independence in fraud prevention. However, since risk-based auditing does not mediate the impactof integrity on fraud detection, companies should ensure that integrity is applied directly and consistently in audit procedures without relying solely on the risk-based audit approach.

Analysis of Moderating Effects

The next phase of analysis is testing the moderating effect. In this study, the moderating effect was tested using the two-stage approach as the goal of the analysis is to examine the significance of the moderating effect (Hair et al., 2017). The analysis of moderating effects can also be reinforced with Multigroup Analysis (MGA) or conditional effects, which are useful to determine differences in the strength of effects across different levels of work-life balance. The conditional effects were tested using the PROCESS Procedure proposed by Hayes (2017) to validate the occurrence of the moderating effect.

Table 3.3
Moderating ImpactAnalysis

No	*Moderating relationship*	*Std. Estimate*	*S.E.*	*C.R.*	*P-value*	Hypothesis Conclusion
1	GCG moderates the impactof internal control detectio on fraud detection Z1*Z3 → Y	0,176	0,083	2,129	0,034	H_{13} Accepted
2	GCG moderates the impactof risk-based audit on fraud detection Z2*Z3 → Y	-0,162	0,059	2,726	0,007	H_{14} Accepted

Source: Research data, processed (2024)The moderating effect of Good Corporate Governance (GCG) on the relationship between internal control detection and fraud detection shows a significant effect, with a CR value of 2.129 (greater than 1.96) and a significance value (p-value) of 0.034 (less than α = 0.05). The coefficient for the moderating effect is 0.176 (positive), indicating that GCG strengthens the impact of internal control detection on fraud detection. Therefore, H13 is accepted.

The moderating effect of Good Corporate Governance (GCG) on the relationship between risk-based auditing and fraud detection also shows a significant effect, with a CR value of 2.726 (greater than 1.96) and a significance value (p-value) of 0.007 (less than α = 0.05). The coefficient for the moderating effect is -0.162 (negative), meaning that GCG weakens the impactof risk-based auditing on fraud detection. Thus, H14 is accepted.

DISCUSSION

The Impact of Professional Education on Internal Control Detection

The study found that professional education positively and significantly affects the auditors' ability to detect internal control deficiencies. Auditors with higher professional education tend to have a deeper understanding of internal control concepts and principles. Professional education equips auditors with the necessary technical, analytical, and methodological skills to conduct thorough examinations of a company's internal control system. This competence allows auditors to be more meticulous in identifying weaknesses, evaluating the effectiveness of controls, and making relevant recommendations for improvement. This finding highlights the importance of continuous professional education and training for auditors in SOEs.

The Impact of Professional Education on Risk-Based Auditing

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Professional education has a positive and significant impacton the implementation of risk-based auditing. Auditors with a strong professional background have the expertise to identify, assess, and prioritize risks in the audit process. They do not only focus on compliance audits but are also able to understand the broader context of strategic, operational, and financial risks faced by the company. Professional education enhances auditors' professional skepticism, which is crucial for critically and objectively assessing potential risks. Therefore, improving auditors' professional education is an essential step in strengthening risk-based auditing practices in SOEs.

The Impact of Professional Education on Fraud Detection

Professional education plays a key role in improving auditors' ability to detect fraud. Auditors with higher education levels are more attuned to fraud indicators and can apply various audit techniques such as data analytics and forensic auditing. They are able to distinguish between normal anomalies and potential fraud that requires further investigation. This finding emphasizes the need for investments in auditor education, particularly in fraud detection training, to maintain organizational integrity, especially in public sector companies such as SOEs.

The Impact of Independence on Internal Control Detection

The study revealed that auditor independence has a positive and significant impacton internal control detection. Auditors who maintain their independence, free from internal organizational pressures, are more objective in assessing existing control systems. They can candidly report identified weaknesses without fear of pressure from management. This finding supports the view that independence is a foundational element for the reliability of audit results, especially in detecting gaps in a company's internal control system.

The Impact of Independence on Risk-Based Auditing

Independence also positively and significantly influences the implementation of risk-based audits. Independent auditors are better able to evaluate various risk scenarios without internal bias, enabling them to focus their audit efforts on high-risk areas that require the most attention. This finding highlights that maintaining and enhancing auditor independence is crucial for improving the quality of risk-based auditing in SOEs.

The Impact of Independence on Fraud Detection

Although independence is a fundamental principle in auditing, this study found that auditor independence does not significantly influence fraud detection. This suggests that other factors, such as professional experience, investigative skills, and the use of modern audit tools, have a greater impact on fraud detection than independence alone. This finding underscores the importance of developing auditors' technical competencies and utilizing advanced auditing tools to complement auditor independence in fraud detection.

The Impact of Integrity on Internal Control Detection

The integrity of auditors has a positive and significant impacton the effectiveness of internal control detection. Auditors with high integrity adhere to principles of honesty, transparency, and accountability in performing their duties. They are unlikely to overlook critical findings that may cause discomfort to management. Integrity encourages auditors to conduct an honest and objective evaluation of the internal control system, thereby improving the reliability of the internal oversight process in SOEs.

The Impact of Integrity on Risk-Based Auditing

The study found that integrity does not significantly affect the effectiveness of risk-based auditing. This suggests that, while integrity is essential for maintaining ethics and objectivity, the effectiveness of risk-based auditing depends more on the auditor's technical and analytical understanding of organizational risks. Integrity needs to be complemented by appropriate risk audit skills to enhance the effectiveness of risk-based audits.

The Impact of Integrity on Fraud Detection

Auditor integrity significantly affects fraud detection abilities. Auditors with high integrity are less likely to conceal findings that could harm the company. They are willing to report potential fraud without being influenced by external political or economic pressures. This highlights the role of auditor integrity as a moral foundation that strengthens the effectiveness of audits in uncovering fraudulent activities within an organization.

The Impact of Internal Control Detection on Risk-Based Auditing

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Effective internal control detection positively and significantly affects risk-based auditing. Auditors who identify weaknesses in internal controls can more easily determine areas that require high-risk audits. This allows for the efficient and effective allocation of audit resources, focusing on critical aspects that could impact business continuity. This finding demonstrates the interdependence between internal control detection and risk-based auditing.

The Impact of Internal Control Detection on Fraud Detection

Effective internal control detection significantly contributes to the ability to detect fraud. When weaknesses in the control system are detected early, auditors can identify potential fraud opportunities before significant losses occur. This finding emphasizes that strengthening internal control systems is one of the most effective preventative measures in a company's risk management strategy.

The Impact of Risk-Based Auditing on Fraud Detection

Risk-based auditing has a positive and significant impacton fraud detection. By focusing on high-risk areas, auditors are better able to identify transactions that are more likely to involve fraud. This enables auditors to conduct more intensive testing on these transactions, speeding up the detection of fraud within the company.

The Moderating Impact of Good Corporate Governance on Internal Control Detection and Fraud Detection

Good Corporate Governance (GCG) strengthens the relationship between internal control detection and fraud detection. The application of GCG principles such as accountability, transparency, and responsibility makes the internal control system more effective in detecting potential fraud. GCG creates an environment that supports auditors in performing their duties independently and objectively, helping them identify and report fraud findings.

The Moderating Impact of Good Corporate Governance on Risk-Based Auditing and Fraud Detection

Interestingly, the study found that Good Corporate Governance weakens the relationship between risk-based auditing and fraud detection. This could be due to excessive bureaucracy or formalities in the implementation of GCG, which reduces the flexibility of auditors to develop innovative audit approaches for risk areas. In other words, overly rigid GCG practices could hinder the effectiveness of risk-based auditing in uncovering fraud.

CONCLUSION AND RECOMMENDATIONS

This study proves that professional education, independence, and integrity of auditors play significant roles in enhancing the effectiveness of internal control detection, risk-based auditing, and fraud detection at State-Owned Enterprises (SOEs) in East Java. Professional education enriches auditors' technical and analytical competencies, directly improving risk-based auditing and fraud detection capabilities. Auditor independence contributes positively to internal control detection and risk-based auditing effectiveness, although it does not significantly affect fraud detection. On the other hand, auditor integrity has a strong impact on detecting weaknesses in internal control systems and uncovering fraudulent practices within companies. Additionally, internal control detection and risk-based auditing significantly complement each other in enhancing fraud detection.

Further, the study indicates that the application of Good Corporate Governance (GCG) strengthens the relationship between internal control detection and fraud detection but weakens the relationship between risk-based auditing and fraud detection. This finding suggests that good corporate governance improves the effectiveness of internal control in preventing fraud, but can simultaneously limit auditors' flexibility in applying risk-based audit approaches. The findings of this research highlight the importance of balancing the application of GCG principles, strengthening professional education, increasing auditor integrity, and maintaining auditor independence to create an effective, accountable, and adaptive auditing system for managing risks in SOEs.

The results of this research have significant implications for SOE management, particularly in focusing on the development of auditor professional education through relevant ongoing training programs that align with modern auditing and fraud detection techniques. Management should also work to foster a culture of integrity within the organization and ensure the independence of auditors by establishing an internal oversight system free from external pressures. Furthermore, GCG principles should be applied not just as a formality, but also to encourage flexibility and innovation in conducting risk-based audits. By implementing these measures, SOEs can strengthen their internal control systems, improve the effectiveness of risk-based audits, and reduce the likelihood of fraud that could threaten the sustainability of the organization.

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LIMITATIONS AND SUGGESTIONS FOR FUTURE RESEARCH

Future researchers are advised to expand the scope of the study by involving private sector companies, other governmental institutions, or SOEs in different geographical regions to test the consistency of these findings and enhance the generalizability of the results. Additionally, incorporating other variables such as organizational culture, audit technology competence, organizational pressure, or audit tenure would enrich the fraud detection model. Employing a mixed-methods approach combining quantitative and qualitative methods is also recommended to explore auditors' behavioral dynamics in fraud detection. Thus, future research could provide more comprehensive insights and contribute to the development of audit theory and practice.

This study has some limitations, including the focus on SOEs in East Java, which may not fully represent companies in other regions or sectors. Additionally, the variables used in this research model do not cover all possible factors influencing fraud detection, such as organizational culture, audit technology competence, or work environment pressures. The use of a quantitative method with the PLS-SEM approach is effective for testing relationships between variables but does not delve deeply into auditors' behavioral aspects, which can be better understood through qualitative methods. These limitations should be addressed in future research.

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