

Development of an Accounting Crime Detection Artificial Intelligence Approach

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ABSTRACT

Traditional methods of fraud detection often fall short in terms of responsiveness and adaptability. As highlighted analysis vast datasets effectively, uncovering patterns that human analysts may overlook, thereby enhancing accuracy of fraud detection efforts Research at the Bandung City Inspectorate towards detection crime fraud. The population taken is as many as 45 auditors in the inspectorate Bandung city, with take sample consisting respondents from the auditor unit and unit internal control. Method Research This use questionnaire in technique collection data. method research used is test validity and test reliability method Assumptions classic which includes test normality, test multicollinearity, test heteroscedasticity and test autocorrelation. Test hypothesis on study This use analysis regression multiple. Results main finding: Independence influential to Detection Crime fraud Because factor established standards by inspectorate the city of Bandung has in accordance with achievement expected strategy. Professionalism influential to Detection Crime fraud systems because factor transparent statement by the auditor to internal parties. Independence and Professionalism effect to crime fraud systems. Novelty a factor crime fraud prevention Detection Systems Artificial Intelligence approach.

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INTRODUCTION

Fraud encompasses deceptive practices aimed at securing unfair or unlawful gains, significantly impacting businesses and individuals. Preventing fraud requires a comprehensive approach integrating internal controls, and fostering a culture of ethical behavior within organizations. The vast landscape of fraud mechanisms, ranging from cyber fraud to identity theft, underscores the pressing need for multi prevention measures that evolve alongside emerging threats. Internal auditors tasked with evaluating an organization internal controls and compliance frameworks. This includes the investigation of processes susceptible to fraud. Their expertise enables them to conduct thorough assessments and audits designed detect deviations from expected financial practices. The role intensifies in turbulent economic times, where behavioral analytics and proactive audits become vital in identifying potential fraud. Practices such as surprise audits and continuous monitoring of internal controls are recommended strategies to enhance fraud detection capabilities within organizations ([Millan & Serrat, 2023](#)).

One of the most effective strategies fraud prevention implementation of advanced technology solutions. Organizations increasingly transactions, and potential security breaches in real-time. Traditional methods of fraud detection often fall short in terms of responsiveness and adaptability. As highlighted analysis vast datasets effectively, uncovering patterns that human analysts may overlook, thereby enhancing accuracy of fraud detection efforts ([Choi & Gipper, 2024](#)). Furthermore, employing biometric authentication methods, such as fingerprint scanning or facial recognition, adds an



additional layer of security, creating barriers for unauthorized access and reducing the risk of fraud through identity manipulation ([Gad et al., 2024](#)).

Equally important to leveraging technology establishment of comprehensive internal controls, which serve as the backbone of fraud prevention. Segregation of duties, authorization mechanisms, and thorough documentation processes mitigate opportunities for fraudulent activities. Implementing stringent controls financial transaction, thereby minimizing or fraudulent behavior. Furthermore, regular audits and assessments of internal controls are crucial for identifying potential weaknesses and refining existing practices, ensuring that organizations remain proactive rather than reactive in their fraud management ([Roychowdhury et al., 2019](#)). The human element plays a critical role fraud prevention, making it essential for organizations to cultivate a strong ethical culture.

Employees should be educated on the types fraud that may occur and the organization's specific policies regarding fraud, ensuring they understand their responsibilities identifying and reporting suspicious activities. Training programs that incorporate real studies can provide valuable insights and enhance employee awareness ([Noh et al., 2019](#)). Additionally, fostering a transparent and supportive work environment encourages employees to report unethical behavior without fear of retaliation, thereby strengthening the organization's overall integrity and resilience against fraud. Another key aspect of fraud prevention is collaboration among stakeholders. Organizations can benefit immensely from sharing information about emerging fraud trends and tactics industry organizations. Collaboration enhances awareness and creates a collective force against fraudulent schemes, enabling stakeholders to implement faster and more effective measures. Moreover, participating in networks such as fraud prevention groups or forums can provide organizations with valuable resources, including best practices and updates on new fraud techniques. This collective approach not only fortifies individual organizations but also contributes to a safer and more secure commercial environment overall. In conclusion, effective fraud prevention requires a comprehensive amalgamation of technology, internal controls, employee training, and collaborative efforts. By adopting an integrated approach, organizations can significantly reduce their susceptibility to fraud while fostering an ethical workplace culture. As fraud schemes continue to evolve, the commitment to developing and refining prevention strategies will be safeguarding both organizational assets and customer trust. The constant vigilance and adaptation to emerging threats will be crucial in the ongoing battle against fraudulent activities.

Detection to cheating in accounting systems of course can associated from things that become trigger the occurrence cheating. Need known by the party receiving task For do detection cheating, because with know reason the occurrence crime fraud And Who or party which one can do cheating, then detection carried out will more directed ([Setianto, 2008](#)).

Internal auditors are required for own attitude high independence For detect a crime fraud. Internal auditors must can stand Alone And No relate with the audited party. Internal auditors include independent if the auditor can do his job in a way free And No affected by other parties. Auditor independence is important in give assessment that is not take sides. ([Rahayu & Suhayati, 2015](#)). Good cooperation is needed to achieve quality internal control Accounting ([Handayani et al., 2022](#)).

Professional will direct for ask every audit evidence and a signal indicating possibility the occurrence crime fraud and capable improve auditors in detect every symptom crime fraud. Professionalism is often defined through the lens of ethical behavior, competencies, and responsibilities in a specific occupation. In the context of accounting and finance, professionalism entails adherence to ethical standards and a commitment to truthful disclosures. Regulatory frameworks, such as the PCAOB (Public Company Accounting Oversight Board), enhance auditor professionalism by enforcing scrutiny and promoting transparency in financial statements, thereby widening the assurance value of audits and strengthening the integrity of financial reporting. Without a strong commitment to

professionalism, auditors and financial professionals may unwittingly pave the way for fraud through negligence or deliberate misconduct. The effect of the Success of Operational Audit and the Complexity of Internal Control of Digital Machines on the performance of employees at the Bandung City Inspectorate ([Sari & Nurdin, 2023](#)).

Objective Study:

- 1) Know influence Independence to Detecting Crime fraud Systems
- 2) Know influence professionalism to Detecting Cheating Systems
- 3) Know influence and professionalism Independence to Detecting Crime fraud Systems with artificial intelligence approach.

Independence in auditing means taking an unbiased viewpoint in the performance of audit tests, the evaluation of the results, and the issuance of the audit report. ([Arens, 2011](#))

Professionalism attitudes that include the mind that always evaluation in a way critical audit evidence. *Crime fraud* detection systems is an action to find out that *crime fraud with systems* has occurred, who the perpetrator is, who the victim is and what the cause is. The key to *crime fraud detection* is to be able to see errors and irregularities. ([Karyono, 2013](#))

Artificial Intelligence Approach is a research approach or analysis method that uses AI techniques to process large amount of data (big data), detect hidden patterns and identify anomalies.

Results study show that professionalism , independence (Aulia et al., 2024), competence And not quite enough the auditor's responsibility is to have influence significant to the auditor's ability to detect crime fraud . Keywords : Professionalism , Independent , Competent , Responsible auditor's answer , and Auditor's ability to Crime fraud Detect . Results study This show that : 1) professional influential significant to not quite enough auditor's responsibility , 2) independence influential significant to not quite enough auditor's answer , 3) auditor's experience has an influence significant to not quite enough auditor's responsibility , 4) auditor's professionalism , independence , auditor's experience also simultaneous to not quite enough auditor's answer auditor Machine learning offers an approach to discover patterns that are not easily recognized by human auditors. In the context of fraud detection: Supervised learning the model is trained from data that has already been labeled as fraud or nonfraud

Unsupervised learning — the model looks for clusters of anomalous data without labels This becomes the academic basis for selecting AI algorithms in detection models ([Alpaydin, E, 2020](#)).

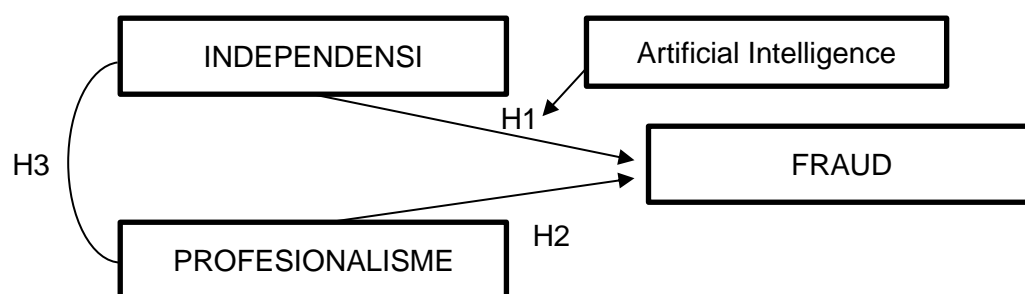


Figure 1. Framework

Source: Data processed by researchers (2026)

METHODS

This study uses a quantitative approach with a survey method. This using primary data originating from from results questionnaire that has been collected and secondary data obtained from Book And journal.

For test validity on each item, namely with to correlate score each grain with total score which is amount each score item. Coefficient the resulting correlation Then compared to with standard valid validation . According to [Sugiyono \(2018\)](#) who must filled that is own criteria as following :

- a. If $r \geq 0.30$, then the instrument item declared valid
- b. If $r \leq 0.30$, then the instrument item stated invalid.

Testing instrument reliability can done in a way external and also internal. in a way external testing can done with *test – retest (stability)*, *equivalent*, And combination both of them internally reliable instrument can tested with analyze consistency the existing items on instrument with technique certain Based on results test validity, can concluded statement from third variable can stated variable And can continue analysis reliable until hypothesis.

RESULTS AND DISCUSSION

This finding indicates a significant role in reinforcing auditor independence. With increasing scrutiny from regulatory bodies, there is a growing consensus that rigorous oversight enhances the quality of audits. This increase in market share can be attributed to the enhanced perceived reliability and assurance provided by independently audited financial statements. Such regulatory oversight serves as an important mechanism for maintaining auditor independence and, consequently, mitigating the risk.

Based on results test reliability on can concluded that every variables studied can stated reliable and can continue analysis

Table 1. Test Normality

Variables	Kolmogorov-Smirnov	<i>p-value</i>	Information
<i>Unstandardized Residual</i>	2.12415564	0.2	Normal Distribution

Source: Data processed by researchers (2026)

Based on results test normality on can concluded that normal distribution.

Table 2. Test Multicollinearity

Variables	Toleran	VIF	Information
Independence	0.414	2.413	No Happen Multicollinearity
Professionalism	0.414	2.413	No Happen Multicollinearity

Source: Data processed by researchers (2026)

Based on results test multicollinearity can concluded that every variable independent No happen multicollinearity.

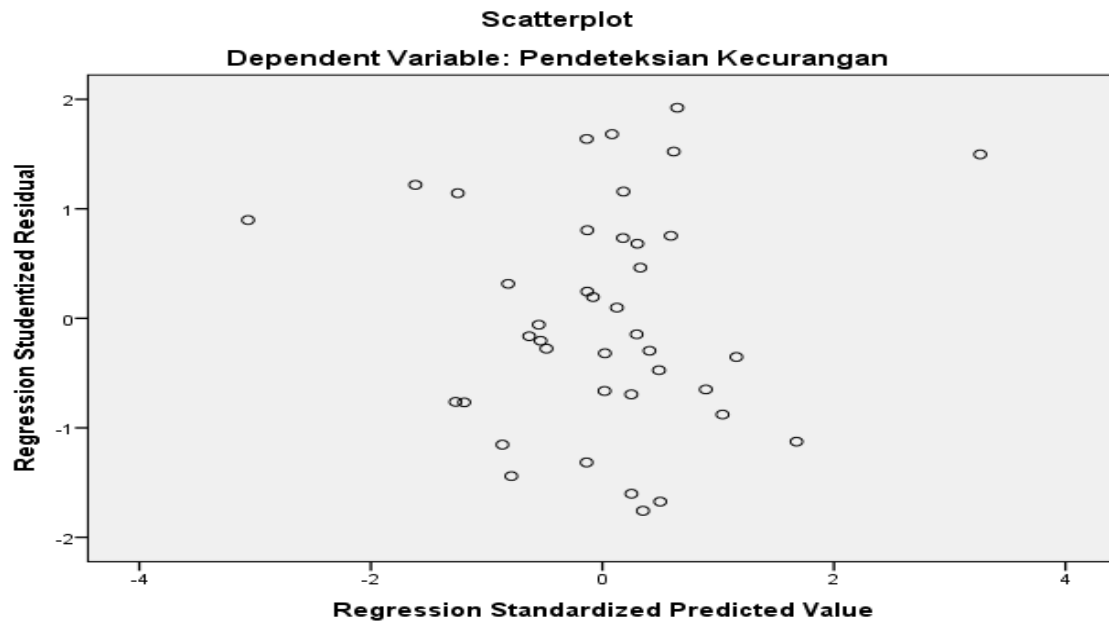


Figure 1. scatterplot

Source: Data processed by researchers (2026)

Test Heteroscedasticity

Can concluded that No happen symptom Heteroscedasticity, so that the regression model is good and ideal can fulfilled.

Table 3. Test Autocorrelation

Variables	dU	4-dU	Durbin- Watson
1	1.6	2.4	2.338

Source: Data processed by researchers (2026)

Based on the table above can explained that mark durbin watson by 2,338 more big from limit above (dU) which is 1,600 and Not enough from (4-dU) which is 2,400. then can concluded that No happen symptom autocorrelation. With thus so test hypothesis can to be continued.

Table 4. Test Multiple Linear Regression

Variables	Coefficient regression	t count	sig.
Constants	10,482	3.459	0.001
Independence	0.091	0.611	0.545
Professionalism	0.496	3.458	0.001

Source: Data processed by researchers (2026)

Table 5. Test Coefficient Correlation

Variables	Rtable	Rcount
Independence	0.312	0.586
Professionalism	0.312	0.706

Source: Data processed by researchers (2026)

On variable independence known mark $r_{count} 0.586 > r_{table} 0.312$, or with percentage by 58.6%, then can concluded that There is connection or correlation between variable independence and detection cheating. with uji F test 0.613. On variable professionalism known mark $r_{count} 0.706 > r_{table} 0.312$, or with percentage by 70.6%, then can concluded that There is connection or correlation between variable professionalism and detection cheating.

Table 6. t-test

Variables	t _{count}	t _{table}	sig.	Caption
Independence	0.611	2,715	0.545	Hypothesis rejected
Professionalism	3.458	2,715	0.001	Hypothesis accepted

Source: Data processed by researchers (2025)

This result suggests effective auditing and plays a crucial role in enhancing the reliability of financial reporting. The concept of independence is fundamental for auditors to ensure that their assessments are objective and free from influences that could compromise their judgment. A lack of independence can facilitate fraud within organizations, as compromised auditors may be less likely to identify irregularities in financial statements. This peril exists notably in scenarios where auditors have close ties with management.

This is consistent with financial statements, have evolved significantly over recent years, reflecting changes in regulatory expectations. Research demonstrates that disclosures have become longer and more complex, which, while beneficial in certain respects, has also made it difficult for auditors to act effectively. The increase in boilerplate language and redundancy can obscure crucial financial information. Disclosures become less readable and harder to interpret, the risk of oversight increases, potentially enabling fraudulent activities to go undetected. This evolution in disclosure practices necessitates that auditors maintain their independence strictly to ensure they can efficiently navigate complex documents and identify any discrepancies that may indicate fraud.

Auditors can uniquely influence their independence. For instance, auditors may face financial and contractual pressures that lead them to overlook red flags associated with fraud. Such perverse incentives can distort the auditor's objectivity, raising serious concerns regarding the integrity. Compensated based on the volume of work performed or the duration of client relationships, there is a risk that they may prioritize client satisfaction over ethical auditing standards. To mitigate these risks, auditor independence must be preserved through appropriate compensation structures and by enforcing strict regulatory frameworks practices.

Therefore, boards of directors must encourage independence among auditors, ensuring that they have the requisite authority and autonomy to report on matters that may pose a risk to financial integrity. Continuous training and awareness-building on fraud detection and ethical practices can further empower auditors to discharge their responsibilities independent of undue influence, thereby enhancing their role as gatekeepers against financial manipulation.

CONCLUSION

In conclusion, auditor independence preventing fraud within organizations. Effectively navigating the interplay of regulatory scrutiny, complex financial disclosures, and corporate governance structures can enhance the auditors' ability to maintain independence with use artificial intelligence. As the financial landscape evolves, it is vital that auditors remain vigilant and uphold ethical standards to ensure the reliability of financial reporting. Only through sustained independence and proper regulatory oversight can auditors fulfil their role in promoting transparency and integrity in financial markets. One significant aspect of professionalism is its correlation with reducing the risk of fraud. Studies have shown that industries with stringent regulations and competitive environments exhibit improved disclosure practices. Practical implications independence big influential to Detection Cheating , thing This because of by factor established standards by The Bandung City Inspectorate has in accordance with achievement expected strategy 91%. Professionalism influential little to detection cheating , thing This because of by results transparent audit report by the auditor to internal parties in detection crime fraud in the Inspectorate Bandung 49% Independence and Professionalism big influential to detection cheating , thing This because of by results transparent audit report by the auditor to internal parties in detection crime fraud in the Inspectorate Bandung 61%. Social Implications Independence influential to Detection Crime fraud Because factor established standards by inspectorate the city of Bandung has in accordance with achievement expected strategy .

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