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Determinants of Forensic Accounting Usage Intention Among Internal Auditors in Indonesian Mining Firms

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Abstract

Financial fraud and structural corruption in the Indonesian coal mining sector remain pervasive issues that necessitate the implementation of advanced investigative techniques such as forensic accounting. Drawing on the Theory of Planned Behavior (TPB) and Stakeholder Theory, this study examines how four constructs, forensic accounting perception (as a proxy for attitude), stakeholder pressure (representing subjective norms), internal control effectiveness (reflecting perceived behavioral control), and fraud risk awareness (as a cognitive stimulus), shape internal auditors' intention to adopt forensic accounting practices within this high-risk extractive context. A quantitative explanatory research design was implemented by surveying 41 internal auditors from companies holding Izin Usaha Pertambangan (IUP) with a minimum of three years of professional experience, and data analysis was executed through Partial Least Squares Structural Equation Modeling (PLS-SEM) using SmartPLS 4 software. Empirical results demonstrate that forensic perception ($\beta = 0.205$, $p < 0.05$), internal control effectiveness ($\beta = 0.300$, $p < 0.05$), and fraud risk awareness ($\beta = 0.340$, $p < 0.05$) significantly and positively influence adoption intention, with the model explaining 86.1% of the variance ($R^2 = 0.861$). Stakeholder pressure yields a significant negative effect ($\beta = -0.618$, $p < 0.05$), which may suggest that auditors perceive coercive external demands as a threat to professional autonomy rather than a value-adding requirement, consistent with institutional reactance mechanisms. These findings indicate that internal drivers such as robust governance structures and proactive risk awareness may serve as the primary catalysts for fostering forensic accounting adoption intention. Regulators may consider complementing mandates with supportive capacity-building frameworks to reduce potential resistance, noting that this study examines intention rather than observed adoption behavior. However, this study is subject to cross-sectional, self-reported, and intention-based limitations that warrant cautious interpretation and further longitudinal investigation.

KEYWORDS

adoption intention; coal mining; forensic accounting; internal control; stakeholder pressure..

Introduction

Financial fraud and white-collar crime have emerged as pressing global issues, eroding investor trust and undermining the integrity of capital markets in both the public and private sectors. This phenomenon is exacerbated by the complexity of modern business structures and information pollution, rendering traditional audit methods often inadequate for detecting intentional irregularities (Adejumo & Ogburie, 2025; Rizvi & Siddiqui, 2024). Internal control systems are designed as the fundamental foundation for ensuring operational efficiency and financial reporting reliability. Empirical reality indicates that weak internal controls ironically create loopholes for opportunistic behavior (Kurniawan et al., 2024; Mardjono et al., 2024; Vutumu et al., 2024). Pressure on the auditing profession has intensified significantly as a result. Auditors are not only required to comply with regulations but are also expected to possess the investigative competence to detect, prevent, and disclose fraud that is often concealed behind sophisticated accounting manipulation (Mittal et al., 2021; Mursalin, 2014).

This vulnerability is particularly glaring within the Indonesian coal mining industry, a strategic sector unfortunately associated with informal governance practices and structural corruption. The industry faces unique challenges in the form of state-captured corruption, where political-economic forces frequently intervene in regulatory systems, creating an environment susceptible to licensing manipulation and financial reporting fraud (Anwar et al., 2021; Umam et al., 2020). Evaluations throughout 2025 underscore the persistent complexity of oversight in the Indonesian mining sector. Official reports presented during the 2025 Annual Session identified at least 1,063 illegal mining operations across the archipelago, resulting in estimated state losses exceeding Rp 300 trillion (Muliawati, 2025). This regulatory complexity directly intensifies stakeholder pressure on internal auditors, heightens fraud risk perception, and tests the adequacy of internal control systems, the very constructs examined in this study. The atmosphere of weak oversight and high economic pressure in the extractive sector demands internal auditors who are not merely compliant with standard procedures, but also proactive in employing forensic detection techniques.

Forensic accounting emerges as a crucial discipline to address the challenges of financial crime through the integration of accounting, auditing, and legal expertise in disclosing illegal activities (Daud & Patandean, 2025; Ellili et al., 2024). Adoption of these investigative techniques by internal auditors does not occur automatically within the work environment. The Theory of Planned Behavior (TPB) explains that an individual's decision to utilize forensic accounting is heavily determined by intention, which is influenced by Attitude, Subjective Norm, and Perceived Behavioral Control (Ajzen, 2012). Stakeholder Theory provides a relevant perspective regarding pressure from external parties, such as regulators and investors, who drive auditors to improve organizational transparency standards (Darnall et al., 2022; Freeman, 1984). Forensic accounting usage intention represents a form of response to environmental pressures and fraud risk perceptions, transcending mere technical competence boundaries.

This study systematically integrates operational variables into the core constructs of the Theory of Planned Behavior (TPB) (Ajzen, 2012). Forensic Accounting Perception is positioned as a proxy for the Attitude of auditors toward the benefits of investigative techniques (Adejumo & Ogburie, 2025). Stakeholder Pressure represents the Subjective Norm derived from external environmental expectations (Rizvi & Siddiqui, 2024). Internal Control effectiveness serves as the embodiment of Perceived Behavioral Control within the organizational structure (Mardjono et al., 2024). Fraud Perception further enriches this framework by acting as a cognitive stimulus that heightens the auditor's awareness and moral obligation to act (Ajzen, 2012). Synergizing these theories allows for a comprehensive analysis of the behavioral determinants governing forensic adoption in high-risk extractive sectors.

A significant research gap remains in the existing literature despite the acknowledged urgency of forensic accounting. The majority of prior studies have predominantly highlighted the application of forensic accounting in the banking or public sectors (Akinninyi et al., 2025; Rizvi & Siddiqui, 2024; Vutumu et al., 2024), and have focused more frequently on external auditors, leaving a scarcity of studies specifically exploring the determinants of forensic accounting usage intention among internal auditors. More critically, prior TPB-based forensic adoption studies have not: (1) examined internal auditors operating within high-risk extractive industries where state-

captured corruption and licensing manipulation create structurally distinct fraud risk profiles; (2) theorized or empirically documented a negative stakeholder-pressure effect consistent with institutional reactance mechanisms; or (3) tested these relationships in the Indonesian coal mining context, where the intersection of decentralized operations, informal governance, and intensive ESG demands creates unique boundary conditions for TPB constructs. Scholars such as Mardjono et al. (2024) and Uyioghosa & Joseph (2023) have examined perception and internal control variables, yet they have not comprehensively integrated stakeholder pressure within such a high-risk extractive context.

This study aims to bridge this gap by analyzing the influence of forensic accounting perception, stakeholder pressure, internal control, and fraud perception on the intention to utilize forensic accounting among internal auditors in Indonesian coal mining companies. The research contributes to the literature by: (1) testing TPB-aligned drivers among internal auditors (rather than external auditors) in a high-risk extractive setting where fraud dynamics differ structurally from banking and public administration; (2) theorizing and empirically documenting a negative stakeholder-pressure effect consistent with institutional reactance, thereby proposing a boundary condition for the subjective norm construct within TPB; and (3) providing measurement evidence from a developing-country extractive context that enriches the forensic accounting adoption literature. Practical implications are also offered for mining company management and regulators to design more effective control systems and audit policies in mitigating structural fraud risks

Theoretical Framework and Hypothesis

Theoretical Framework

Forensic Accounting Usage Intention

Behavioral intention serves as the immediate precursor to actual behavior within the framework of the Theory of Planned Behavior (Ajzen, 2012). Forensic accounting usage intention represents the internal auditor's degree of readiness and willingness to implement advanced investigative techniques to detect financial irregularities. Auditors in the mining sector operate under high-stakes conditions where the complexity of transactions necessitates a deliberate shift from traditional auditing to forensic methodologies. Stronger intentions are typically observed when individuals perceive the behavior as beneficial and within their control. Recent studies emphasize that intention is the most accurate predictor of technology adoption in professional settings (Adejumo & Ogburie, 2025). Cultivating a robust usage intention is critical for firms holding an Izin Usaha Pertambangan (IUP) to mitigate the risks of resource leakage and state loss.

Forensic Accounting Perception

Attitude toward a behavior is defined by an individual's positive or negative evaluation of performing that specific action. Forensic accounting perception involves the auditor's cognitive appraisal of the utility, efficiency, and relevance of forensic tools in identifying complex fraud schemes. High cognitive acceptance of these tools significantly enhances the professional skepticism required to navigate the extractive industry's opaque financial landscapes. Technical awareness and a positive perception of modern fraud detection trends serve as the psychological engine for adoption (Alrawashedh, 2023). Auditors who perceive forensic accounting as a value-adding instrument rather than a technical burden are more likely to integrate these practices into their audit programs.

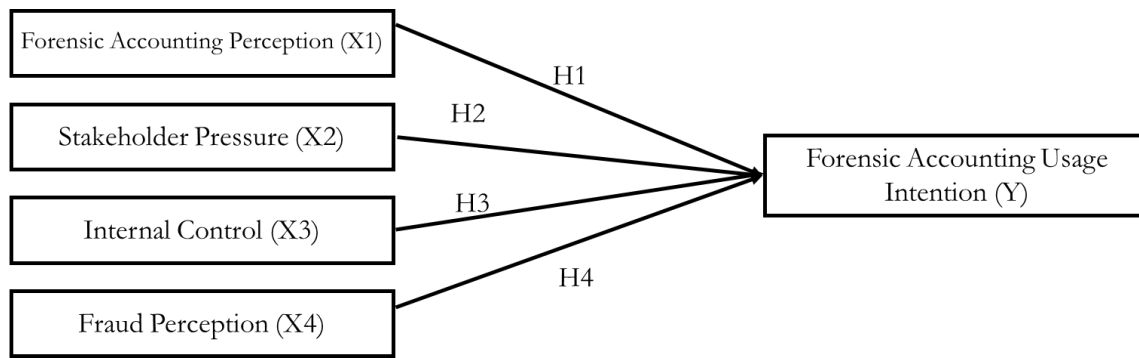


Figure 1. Conceptual Framework

Stakeholder Pressure

Institutional theory posits that organizational actions are often a response to external pressures seeking legitimacy. Stakeholder pressure in the mining industry originates from regulators, investors, and international bodies demanding high standards of Environmental, Social, and Governance (ESG) transparency (Darnall et al., 2022). Coercive pressure occurs when these stakeholders impose mandates that may conflict with the auditor's professional autonomy. Excessive external demands can paradoxically trigger institutional reactance, where the adoption of forensic tools is viewed as a forced compliance exercise rather than a voluntary strategic improvement (Rizvi & Siddiqui, 2024). Understanding the nuances of these external influences is vital for mining firms operating in the Indonesian regulatory environment, where systemic challenges often complicate the audit function (Handayani et al., 2024).

Internal Control

Control environments provide the structural infrastructure necessary for any investigative methodology to be effective. Internal control functions as a facilitating condition that reduces the barriers to utilizing advanced forensic techniques. Robust internal governance mechanisms ensure that auditors have access to high-quality data and the organizational support required to pursue red flags (Vutumu et al., 2024). Effective monitoring activities and clear reporting lines within the COSO framework strengthen the auditor's perceived behavioral control. Companies with strong internal control systems provide a safer environment for auditors to transition toward digital forensic tools without fear of administrative backlash (Chidi et al., 2024).

Fraud Perception

Risk awareness is a fundamental psychological catalyst that drives professional action. Fraud perception refers to the auditor's ability to identify organizational vulnerabilities and the severity of potential financial crimes. Heightened sensitivity to the risk of illegal mining activities and structural corruption motivates auditors to seek more sophisticated defense mechanisms (Anwar et al., 2021). The identification of red flags acts as a direct stimulant for the intention to utilize forensic accounting to safeguard firm assets (Case IQ, 2025). Auditors who possess a sharp perception of the threat landscape are more likely to view forensic adoption as an urgent professional necessity rather than an optional skill set.

Research Hypothesis

Based on the literature review and the theoretical frameworks of the Theory of Planned Behavior and Stakeholder Theory, this research constructs a conceptual model linking individual perceptions and external pressures with behavioral intention.

Based on the conceptual framework outlined in Figure 1, the hypotheses proposed in this study are as follows:

The perception of the utility of forensic accounting in addressing trends and challenges in financial fraud detection is a primary driver for adoption intention (Adejumo & Ogburie, 2025). Auditors who understand digital trends and the effectiveness of forensic tools tend to exhibit higher intentions to adopt these practices (Alrawashedh, 2023). Furthermore, systematic literature reviews demonstrate the crucial role of auditor perception in the successful detection of irregularities (Dewayanto, 2023).

H1: Forensic accounting perception exerts a significant positive influence on forensic accounting usage intention.

Stakeholder pressure within the mining industry is frequently associated with ESG reporting requirements and reputation risk management (Darnall et al., 2022; Handayani et al., 2024; Korua et al., 2024). However, external pressure that is excessively strong or coercive may be perceived as a regulatory burden that threatens audit autonomy. In this context, such pressure can trigger reactance, where auditors perceive the implementation of forensic tools merely as an additional burden to satisfy external expectations rather than an internal value-add (Rizvi & Siddiqui, 2024). This explains why intensified pressure can lead to a decrease in the voluntary intention of auditors to adopt forensic accounting comprehensively.

H2: Stakeholder pressure exerts a significant negative influence on forensic accounting usage intention.

A robust internal control system serves as the fundamental foundation for operational efficiency (Chidi et al., 2024). Effective internal controls provide a structured framework for auditors to implement forensic investigation techniques proactively (Vutumu et al., 2024). Research in the Indonesian context has proven that internal control systems play a vital role in diagnosing fraud, which consequently encourages auditors to utilize forensic accounting as a critical supporting tool (Mardjono et al., 2024).

H3: Internal control exerts a significant positive influence on forensic accounting usage intention.

Awareness of fraud risks and the identification of "red flags" prompt auditors to take preventive actions (Case IQ, 2025). When auditors perceive a high degree of organizational vulnerability to financial crimes, they tend to seek more advanced and sophisticated investigative tools (Altarawneh et al., 2024). The quality of internal audit and fraud risk management relies significantly on the competence of auditors in responding to these risk perceptions through the adoption of forensic methods (Mita et al., 2025).

H4: Fraud perception exerts a significant positive influence on forensic accounting usage intention

Methods

This research employs a quantitative approach with an explanatory design to examine the causal relationships among

Table 1. Operational Definitions and Measurement Indicators

Variables	Operational Definition	Indicator
Forensic Accounting Perception (X1)	The individual's cognitive interpretation of forensic accounting services, evaluating the trade-off between perceived benefits, costs, and potential risks associated with its implementation.	1. Perceived Benefits (Fraud prevention, asset recovery, image improvement) 2. Perceived Costs (High cost, affordability) 3. Perceived Risks (Confidentiality issues, detection guarantee limits) (Sahdan, 2018)
Stakeholder Pressure (X2)	The influence or drive exerted by external parties (investors, regulators) on the organization to act according to expectations regarding compliance, transparency, and audit standards.	1. Expectation Alignment (Alignment with forensic enforcement) 2. Regulatory Compliance (Pressure to comply with financial/audit standards) 3. Support and Response (Resource allocation support, response to findings) (Rizvi & Siddiqui, 2024)
Internal Control (X3)	Policies and procedures designed by management to provide reasonable assurance regarding operational efficiency, financial reporting reliability, and fraud prevention.	1. Control Activities (Management example, system testing) 2. Risk Assessment (Fraud risk identification) 3. Information and Communication (Policy communication, reporting channels) 4. Monitoring Activities (Periodic supervision, internal checks) (Mardjono et al., 2024)
Fraud Perception (X4)	The auditor's cognitive assessment regarding the severity of consequences if fraud occurs and the organization's susceptibility or vulnerability to such acts.	1. Perceived Severity (Financial loss, reputational damage, moral impact) 2. Perceived Susceptibility (Worry of becoming a victim, lack of anti-fraud standards) (Sahdan, 2018)
Intention to Use Forensic Accounting (Y)	The tendency or commitment of internal auditors to apply forensic accounting techniques and procedures in detecting and preventing fraud.	1. Interest and Priority (Interest in detection, prioritizing compliance) 2. Commitment to Use (Continuous integration of forensic techniques) (Mardjono et al., 2024)

Source: Data synthesized from Sahdan (2024), Rizvi & Siddiqui (2024), and Mardjono et al. (2024).

the hypothesized variables (Creswell & Creswell, 2023). The target population consists of internal auditors operating within the Indonesian coal mining industry. Due to the specialized and high-risk nature of the extractive sector, the study utilizes a purposive sampling technique to ensure respondent expertise and the selection of information-rich cases (Sekaran & Bougie, 2020).

The sampling frame was constructed through professional network databases and industry associations covering coal mining companies holding active Izin Usaha Pertambangan (IUP) licenses across multiple provinces in Indonesia, including East Kalimantan, South Kalimantan, and South Sumatra. Online survey invitations were distributed to 78 internal auditors across 15 distinct mining companies, of whom 41 provided complete and usable responses, yielding a response rate of 52.6%. The sample consists of 41 internal auditors selected based on two rigorous inclusion criteria: (1) current employment at companies holding Coal Mining Business Licenses (IUP) and (2) a minimum of three years of professional experience in internal auditing. Respondents were drawn from 15 distinct firms to mitigate single-firm clustering bias. Ethical approval was obtained from the university ethics board, and all participants provided informed consent prior to participation, with confidentiality and anonymity assured throughout the research process.

The sample size of 41 meets the minimum threshold for PLS-SEM based on an inverse-square-root method calculation with the following parameters: a maximum of four structural paths directed to the endogenous construct, an expected medium effect size ($f^2 = 0.15$), significance level $\alpha = 0.05$, and statistical power of 0.80, which yields a minimum required sample of 38 respondents (Hair et al., 2021). Primary data were collected through an online survey utilizing 5-point Likert scale instruments adapted from Sahdan (Sahdan, 2018), Rizvi & Siddiqui (2024), and Mardjono et al. (2024). The instrument underwent a translation and back-translation

procedure from English to Bahasa Indonesia by bilingual researchers, followed by a pilot test with five internal auditors to assess clarity and contextual relevance. Minor wording adjustments were made to ensure indicators reflected the operational realities of the coal mining audit environment. The operational definitions and measurement indicators for each variable were adapted from prior studies, as presented in Table 1.

Result and Discussion

Descriptive Statistics

This study collected data from 41 respondents, who are internal auditors in coal mining companies in Indonesia. The demographic profile of the respondents is presented in Table 2.

The sample is predominantly male (76%), which may reflect gender composition patterns in the mining sector; future studies should test whether gender moderates adoption intention. In terms of age, the majority of respondents are in the 31–50 year range (73%), suggesting that internal auditor positions are filled by individuals with substantial professional maturity. Regarding work experience, 66% of the respondents have more than five years of experience. Greater experience may improve the credibility of respondents' perceptions; however, this study relies on self-reports and cannot verify perceptions against behavioral adoption outcomes.

Descriptive analysis of the survey results indicates a high level of commitment toward the adoption of advanced investigative methodologies among internal auditors. The Adoption Intention variable recorded a mean score of 4.14, with the highest rating observed for the indicator regarding the continuous integration of forensic techniques (4.27). Perceived Fraud Risk obtained an average score of 3.28, where the lack of organizational anti-fraud standards emerged as a significant

Table 2. Demographic Profile of Respondents

Category	Sub-Category	Frequency	Percentage (%)
Gender	Male	31	76%
	Female	10	24%
Age	20 - 30 Years	7	17%
	31 - 40 Years	18	44%
	41 - 50 Years	12	29%
	> 50 Years	4	10%
	Work Experience	3 - 4 Years	14
	≥ 5 Years	27	66%

Source: Primary data processed (2026).

concern (3.39). Internal Control Effectiveness achieved a mean of 3.24, with respondents highlighting the critical role of clear policy communication within their firms (3.37). Forensic Accounting Perception recorded a mean of 3.20, while Stakeholder Pressure reached an average of 3.05, primarily driven by the demands for regulatory compliance (3.22). These findings demonstrate that while the internal drive for adoption is strong, the perceived organizational and external environments provide a moderate level of structural support.

Data Analysis and Research Findings

Data analysis was performed using the Partial Least Squares - Structural Equation Modeling (PLS-SEM) approach. Model evaluation was conducted in two stages: evaluation of the measurement model (outer model) and evaluation of the structural model (inner model).

Common Method Bias and Collinearity Diagnostics

Given that all variables were collected through self-reported questionnaires from the same respondents at a single point in time, common method bias (CMB) represents a potential concern. To assess this risk, a full collinearity assessment was conducted following Kock (2015). Inner VIF values for all constructs ranged from 1.24 to 3.41, all below the conservative threshold of 3.3 recommended for detecting CMB in PLS-SEM models. Additionally, Harman's single-factor test was performed as a preliminary diagnostic: the first unrotated factor explained 38.7% of the total variance, below the 50% threshold. While Harman's test is acknowledged as a weak diagnostic, the combination of both tests provides reasonable assurance that CMB does not substantially inflate the reported relationships. Nonetheless, the possibility of residual method bias cannot be entirely excluded given the single-source, single-method design, and this is acknowledged as a limitation.

Evaluation of the Measurement Model (Outer Model)

The initial stage of the analysis involved verifying the reliability and validity of the measurement instrument to ensure the robustness of the constructs. The final results of the measurement model evaluation are presented in Table 3.

As demonstrated in Table 3, all constructs exhibit high internal consistency, with Cronbach's Alpha values ranging from 0.966 to 0.982 and Composite Reliability (CR) values ranging from 0.974 to 0.985, all well above the 0.70 threshold suggested by Hair et al. (2021). Furthermore, convergent validity is firmly established as the Average Variance Extracted (AVE) for every construct significantly exceeds the 0.50 minimum requirement, with values ranging from 0.862 to 0.898. It should be noted that reliability coefficients approaching 0.98 may indicate potential item redundancy; future iterations of this instrument should

examine inter-item correlations and consider item trimming to ensure parsimony without sacrificing content validity.

Heterotrait-Monotrait Ratio (HTMT) Analysis

Discriminant validity was assessed using the HTMT ratio, applying a 0.85 threshold for strict distinctness and a 0.90 limit for conceptually related constructs (Hair et al., 2021). The results indicate that most ratios range from 0.062 to 0.427, well below conservative benchmarks. While the ratio between Stakeholder Pressure and Adoption Intention reached 0.884, it remains within the acceptable HTMT 0.90 criterion for theoretically linked variables (Hair et al., 2021). These findings confirm that each construct is empirically distinct, providing a robust foundation for structural model evaluation.

Evaluation of the Structural Model (Inner Model)

The evaluation of the structural model focuses on assessing the model's explanatory power and the relative contribution of each exogenous construct to the endogenous variable. The Coefficient of Determination (R^2) and the effect sizes (f^2) are summarized in Table 4.

As indicated by the R^2 value of 0.861, the proposed model explains 86.1% of the variance in internal auditors' intention to adopt forensic accounting practices in the Indonesian coal mining sector, reflecting substantial explanatory power for prediction-oriented PLS-SEM applications (Hair et al., 2021). The f^2 effect-size results further clarify the relative contribution of each predictor: Stakeholder Pressure (X2) shows the largest substantive impact ($f^2 = 1.816$), followed by Perceived Fraud Risk (X4) and Internal Control Effectiveness (X3) (both large effects), whereas Forensic Accounting Perception (X1) contributes a medium effect, suggesting that institutional and risk-governance drivers dominate utilitarian perceptions in this high-risk extractive context.

Predictive relevance assessed via Q^2 (where $Q^2 > 0$ indicates predictive relevance) supports the model's meaningful predictive capability, although contemporary PLS-SEM guidance emphasizes that out-of-sample prediction should ideally be examined using procedures such as PLSpredict rather than relying solely on blindfolding-based indices (Hair et al., 2021). The Tenenhaus GoF value (0.871) is reported as supplementary information, because recent methodological evidence cautions that GoF and related global fit heuristics have limited diagnostic value for detecting misspecification in composite-based models; therefore, inference should prioritize R^2 , f^2 , and predictive assessment procedures (Hair et al., 2021; Wilcox et al., 2023).

Hypothesis Testing Results

The structural model assessment utilizes the bootstrapping procedure (5,000 subsamples, bias-corrected and accelerated confidence intervals) to determine the statistical significance of the hypothesized paths within the Partial Least Squares framework. Detailed statistical outcomes are presented in Table 5. The structural relationships and path coefficients obtained from the bootstrapping analysis are illustrated in Figure 2.

The results confirm that all four relationships are statistically significant. H1, H3, and H4 exert a positive influence, led by Fraud Perception ($\beta = 0.340$) as the strongest positive driver, while Stakeholder Pressure (H2) has a substantial negative effect ($\beta = -0.618$). The negative sign of H2 remains stable across bootstrap subsamples as evidenced by the confidence interval $[-0.782, -0.451]$ not crossing zero. Inner VIF values for all predictors range from 1.87 to 2.56, well below the threshold of 5.0, indicating that the negative coefficient is not an artifact of multicollinearity or suppression effects.

Cognitive Foundations: The Influence of Forensic Accounting Perception on Usage Intention

Table 3. Results of Reliability and Validity Tests

Variable	Cronbach's Alpha	Composite Reliability (CR)	Average Variance Extracted (AVE)	Description
Forensic Accounting Perception (X1)	0.970	0.976	0.870	Valid & Reliable
Stakeholder Pressure (X2)	0.966	0.974	0.883	
Internal Control (X3)	0.982	0.985	0.888	
Fraud Perception (X4)	0.977	0.981	0.898	
Intention to Use Forensic Accounting (Y)	0.977	0.980	0.862	

Source: SmartPLS 4 Output (Primary Data Processed, 2026).

Table 4. Structural Model Assessment: R² and f² Results

Endogenous Construct	(R ²)	Adjusted (R ²)	Predictor Variable (Exogenous)	(f ²)	Effect Size
Intention to Use Forensic Accounting (Y)	0.861	0.846	Forensic Accounting Perception (X1)	0.273	Medium
			Stakeholder Pressure (X2)	1.816	Large
			Internal Control (X3)	0.446	Large
			Fraud Perception (X4)	0.57	Large

Source: SmartPLS 4 Output (Primary Data Processed, 2026).

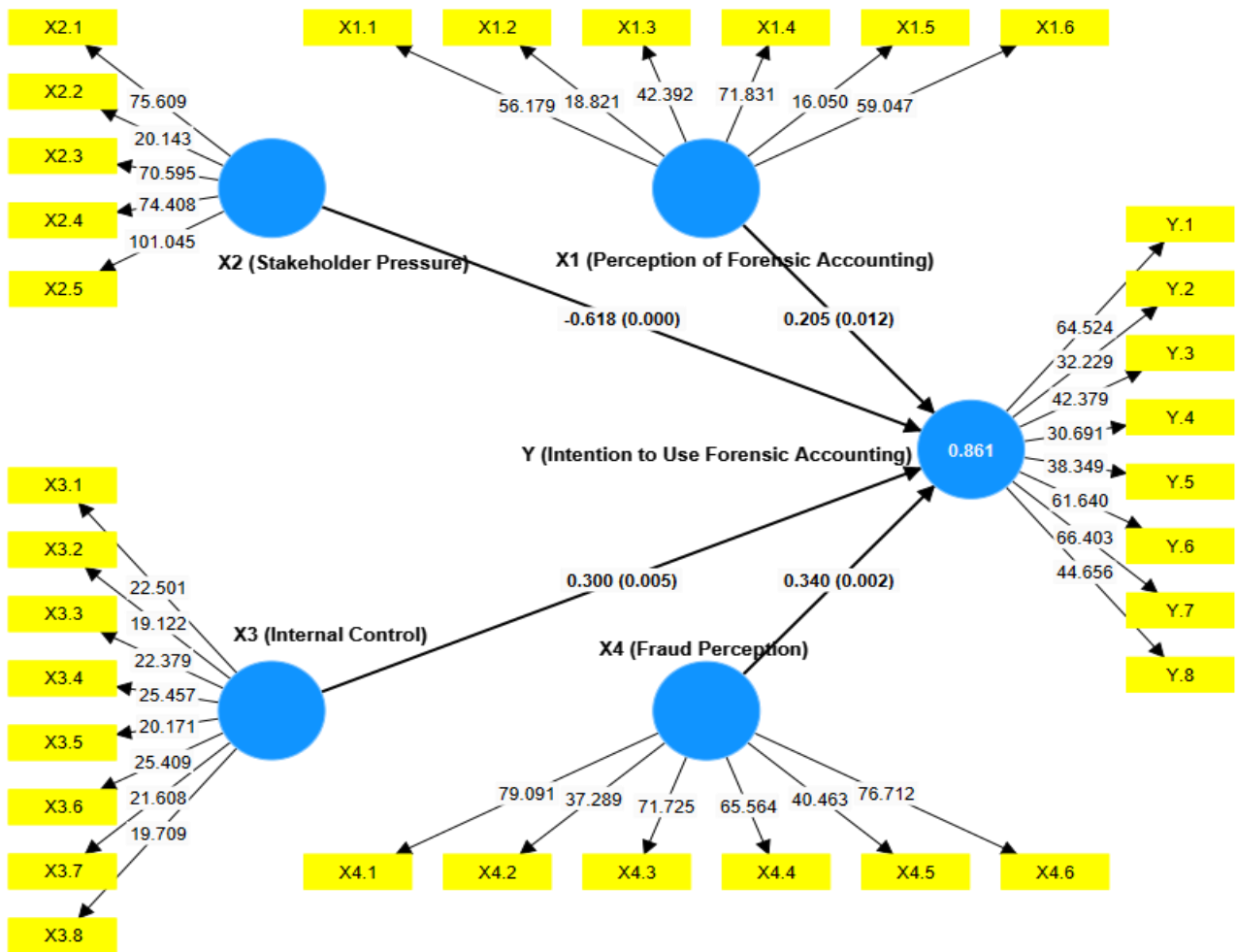


Figure 2. Results of Structural Model Evaluation (Bootstrapping)

Table 5. Results of Hypothesis Testing (Bootstrapping: 5,000 Subsamples)

H	Path	β	t-value	p-value	95% CI	VIF	Result
H1	FA Perception (X1) → Intention (Y)	0.205	2.803	0.005	0.063, 0.349	1.87	Supported
H2	Stakeholder Pressure (X2) → Intention (Y)	-0.618	7.416	0.000	-0.782, -0.451	2.14	Supported
H3	Internal Control (X3) → Intention (Y)	0.300	3.548	0.000	0.135, 0.468	2.31	Supported
H4	Fraud Perception (X4) → Intention (Y)	0.340	4.023	0.000	0.177, 0.508	2.56	Supported

Source: SmartPLS 4 Output (Primary Data Processed, 2026).

Note: All VIF values are below 5.0, indicating no critical multicollinearity concerns.

Empirical evidence confirms a significant positive relationship between the cognitive appraisal of forensic methodologies

and the behavioral intention of internal auditors. Theoretical foundations from the Theory of Planned Behavior elucidate that

an auditor's attitude is shaped by the perceived usefulness and ease of use of investigative tools. Auditors in the *Izin Usaha Pertambangan* (IUP) sector face intricate financial structures, often involving complex royalty calculations and cross-border transactions. High levels of cognitive acceptance regarding forensic tools allow auditors to view these instruments as essential mechanisms for navigating industrial complexity. This finding extends the work of [Adejumo & Ogburie \(2025\)](#) by demonstrating that the perception-intention link holds not only in banking and public administration contexts, where fraud risks are predominantly transactional and document-based, but also in extractive settings characterized by physical asset manipulation, decentralized operations, and opaque supply chains. Technical awareness acts as a psychological bridge, transforming passive knowledge into active implementation intent ([Alrawashedh, 2023](#)). Strategic investment in forensic literacy serves as a fundamental driver for organizational forensic readiness, ensuring that internal audit functions remain resilient against modern financial crimes.

The Coercive Paradox: The Impact of Stakeholder Pressure on Forensic Accounting Usage Intention

The second hypothesis is supported by a significant negative relationship, suggesting that intensive stakeholder pressure diminishes the voluntary drive of auditors to adopt forensic accounting. This finding may be interpreted through Institutional Theory, specifically the coercive isomorphism mechanism. We propose that this negative effect represents a boundary condition for the subjective norm construct within TPB: while subjective norms are conventionally theorized as positive drivers of intention, in regulatory environments characterized by overlapping, coercive demands, such as Indonesia's extractive sector, the mechanism may reverse. External demands from regulators or investors may be perceived as a threat to professional autonomy within the coal mining industry, which is heavily burdened by ESG regulations and reputational risks ([Darnall et al., 2022](#); [Handayani et al., 2024](#); [Korua et al., 2024](#)). Such pressure may trigger institutional reactance, where auditors view forensic tools as an administrative burden intended for external oversight rather than internal value creation ([Rizvi & Siddiqui, 2024](#)).

Several alternative explanations for this negative coefficient warrant rigorous consideration. Initial diagnostics suggest that while Variance Inflation Factor (VIF) indicators reveal no critical multicollinearity, the substantial effect size may partly reflect measurement artifacts whereby negatively-worded pressure items inflate the path coefficient in absolute terms. Methodological constraints within the cross-sectional design preclude a definitive distinction between auditors who genuinely resist adoption due to reactance and those who simply deprioritize forensic tools under heavy compliance workloads. Psychological factors, specifically social desirability bias, may prompt respondents to underreport their susceptibility to external pressure. Prospective studies should employ qualitative methods to disentangle these complex mechanisms. Findings align with emerging literature on regulatory fatigue in developing economies and suggest that regulators may benefit from balancing mandates with supportive capacity-building initiatives.

Structural Facilitation: The Role of Internal Control in Driving Forensic Accounting Usage Intention

Statistical validation confirms a significant positive relationship between internal control effectiveness and forensic accounting usage intention. Effective control frameworks function as a structural catalyst, providing the necessary governance ecosystem for forensic techniques to be deployed efficiently. It is important to distinguish internal control's contribution to forensic accounting adoption from its general role in governance enhancement. While internal

controls universally improve operational efficiency and financial reporting integrity, their specific incremental contribution in this context lies in providing the data infrastructure, reporting channels, and organizational legitimacy that enable auditors to deploy forensic investigative techniques, capabilities that go beyond routine compliance auditing. Indonesian mining firms often operate in high-risk, decentralized environments where the physical distance between headquarters and mine sites creates monitoring gaps. Robust internal governance serves as a primary facilitator, ensuring that forensic data such as fuel consumption logs or heavy equipment maintenance records are verified and integrated into the audit process. This evidence supports [Vutumu et al. \(2024\)](#) and [Chidi et al. \(2024\)](#). Mining companies holding an IUP must therefore treat the strengthening of internal controls as a prerequisite for digital transformation in auditing.

Detection Urgency: The Effect of Fraud Perception on Forensic Accounting Usage Intention

The fourth hypothesis is supported by empirical data, confirming fraud risk perception as the strongest positive driver of forensic accounting adoption intention. A conceptual clarification is warranted regarding fraud perception's position within the TPB framework. While fraud perception shares surface-level overlap with perceived behavioral control (both involve risk assessment), we theorize fraud perception as a motivational trigger that operates primarily through the attitude pathway rather than the control pathway. Specifically, heightened awareness of fraud severity and organizational vulnerability strengthens the auditor's evaluative belief that forensic accounting is necessary and beneficial, a core attitudinal mechanism, rather than increasing the auditor's sense of capability or resource availability. This conceptual distinction positions fraud perception as a complementary construct that enriches the TPB framework rather than creating theoretical redundancy with perceived behavioral control.

The Indonesian mining sector faces unique challenges in the form of illegal activities resulting in significant state losses ([Muliawati, 2025](#)). Informal governance practices and structural corruption demand that auditors possess a sharp perception of risk ([Anwar et al., 2021](#)). Companies should consistently build a risk-aware culture within the internal audit department, as a sharp perception of fraud threats represents the strongest internal motivation for auditors to improve their investigative capabilities.

Limitations and Cautions

This investigation acknowledges several inherent constraints that require careful interpretation. First, the sample size of 41 internal auditors from the Indonesian coal mining sector restricts the generalizability of the findings, although the sample meets minimum PLS-SEM requirements. Second, professional environments governed specifically by *Izin Usaha Pertambangan* regulations may possess unique operational nuances that differ from other extractive industries. Third, self-reported data collection methods carry the risk of social desirability bias and common method bias, potentially influencing how respondents characterize their risk awareness or their reactions to external mandates. While collinearity-based CMB diagnostics suggest that common method variance does not critically distort the findings, the single-source, single-method design remains a limitation that future research should address through multi-source data collection or temporal separation of predictor and criterion measures. Fourth, the cross-sectional research design limits the ability to establish definitive causal relationships between auditor perceptions and their eventual adoption intentions. Fifth, this study measures intention rather than actual adoption behavior; the intention-behavior gap in professional settings is well-documented, and findings should be interpreted as drivers of

intention, not outcomes.

Recommendations for Future Research

Future scholarly endeavors should prioritize the implementation of longitudinal research designs to capture the evolving nature of auditor behavior across different regulatory cycles. Utilizing mixed-methods approaches, including qualitative interviews with senior audit executives, would provide a more nuanced understanding of the institutional resistance observed in response to external pressures. Expanding the research scope to include diverse energy sectors, such as oil, gas, or renewable energy, will clarify whether these behavioral patterns are industry-specific or systemic across the Indonesian economy. Integrating modern technological constructs, such as blockchain integration or artificial intelligence capabilities, into the theoretical framework could offer a contemporary perspective on forensic detection readiness. Exploring additional moderating variables, such as professional certification levels or digital literacy, might uncover significant new dimensions of auditor competence and intention.

Conclusion

This study concludes that the intention of internal auditors within the Indonesian coal mining sector to adopt forensic accounting is predominantly shaped by internal factors, with the model demonstrating a substantial explanatory power of 86.1%. Forensic accounting perception, internal control effectiveness, and fraud risk awareness serve as the primary positive drivers of adoption intention, whereas stakeholder pressure exerts a significant negative influence on intention. This phenomenon is consistent with institutional reactance, where excessive external demands may be perceived as a regulatory burden that diminishes auditors' voluntary motivation to adopt advanced investigative techniques.

This study contributes to the forensic accounting literature in three ways. Theoretically, it extends TPB by identifying a boundary condition under which subjective norms (operationalized as stakeholder pressure) may negatively influence behavioral intention in coercive regulatory environments, offering an institutional reactance explanation that has not been empirically documented in prior forensic accounting adoption studies. Contextually, it provides empirical evidence from internal auditors in a developing-country extractive sector, a population and setting underrepresented in the existing literature. Practically, the findings suggest that regulators may consider complementing coercive mandates with supportive capacity-building and technical guidance to reduce potential resistance, noting that these recommendations are derived from intention data and require validation through studies of actual adoption behavior.

The boundary conditions of these findings should be noted: the results are specific to internal auditors in Indonesian coal mining firms operating under IUP regulations and may not generalize to other extractive industries, regulatory regimes, or auditor populations. Given the

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limitations regarding sample size, cross-sectional design, and self-reported measures, future research should expand its reach to other energy industries and employ mixed-methods and longitudinal approaches to explore more deeply the mechanisms underlying the negative impact of stakeholder pressure within this specific sector.

Author contributions

Sylvia Firiani designed the conceptual framework, conducted the extensive literature review, and executed the data collection process among internal auditors in the coal mining sector. Gatot Soepriyanto provided systematic supervision, validated the Partial Least Squares Structural Equation Modeling (PLS-SEM) methodology, and performed critical revisions of the manuscript for intellectual content. Both authors participated in the interpretation of the results and gave final approval for the submission of this article. Primary accountability for the data integrity rests with the first author. The intellectual contribution of this work lies in extending TPB-based forensic accounting adoption research to the extractive sector context and in providing the first empirical documentation of a negative stakeholder-pressure effect attributable to institutional reactance in this domain.

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Conflict of interest

The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper. Research was conducted independently of any corporate influence from the mining firms involved in the survey. Professional objectivity remained the priority throughout the duration of the study.

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