
DETERMINANTS OF FRAUD PREVENTION WITH PROFESSIONAL ETHICS AS A MODERATOR

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Abstract

Fraud remains a critical challenge for plantation and agribusiness companies due to the complexity of operational processes, extensive resource management, and increasing digitalization. This study aims to examine the determinants of fraud prevention by analyzing the influence of information systems, internal audit, audit competence, and whistleblowing systems, while also investigating the moderating role of professional ethics. A quantitative research approach was employed using survey data collected from 100 practitioners working in plantation and agribusiness companies. The data were analyzed using Moderated Regression Analysis (MRA) to assess both direct and moderating effects among the variables. The findings reveal that information systems and audit competence have significant positive effects on fraud prevention, indicating that technological support and auditor expertise play important roles in strengthening organizational control mechanisms. In contrast, internal audit and whistleblowing systems do not demonstrate significant effects on fraud prevention. The results further show that professional ethics significantly moderates the relationship between audit competence and fraud prevention by strengthening the effectiveness of competent auditors in detecting and preventing fraudulent activities. However, professional ethics does not significantly moderate the relationships between information systems, internal audit, whistleblowing systems, and fraud prevention. These findings suggest that effective fraud prevention in plantation and agribusiness companies requires not only robust information systems and competent auditors but also strong ethical values that enhance professional judgment and accountability. The study contributes to the fraud prevention literature by highlighting the strategic role of professional ethics in reinforcing the impact of audit competence on organizational fraud prevention efforts. The results provide practical implications for managers, auditors, and policymakers seeking to improve governance and fraud control practices within the plantation and agribusiness sector.

Keywords: Fraud Prevention, Information Systems, Audit Competence, Professional Ethics, Internal Audit, Whistleblowing System

INTRODUCTION

Fraud continues to pose a significant challenge to organizations worldwide, particularly in industries characterized by complex operational structures, geographically dispersed activities, and high-value asset management, such as the plantation and agribusiness sectors. Fraudulent activities can result in substantial financial losses, reduce operational efficiency, damage corporate reputation, and undermine stakeholder confidence. Global reports consistently indicate that fraud remains prevalent across various industries, emphasizing the need for effective fraud prevention strategies as an integral component of organizational governance and risk management.

The plantation and agribusiness industry plays a strategic role in economic development by contributing to employment generation, export revenues, and national economic growth. However, the unique characteristics of plantation operations, including extensive geographical coverage, decentralized management structures, and intensive asset utilization, create conditions that may increase vulnerability to fraudulent practices. Limited supervision, information asymmetry, weak monitoring mechanisms, and operational complexity often provide opportunities for individuals to engage in fraudulent behavior.

To mitigate fraud risks, organizations implement various control mechanisms, including sophisticated information systems, effective internal audit functions, competent auditors, and whistleblowing systems. Information systems enhance transparency, improve data accuracy, and facilitate real-time monitoring of organizational activities. Internal audit functions provide independent assurance regarding the adequacy and effectiveness of internal controls, while audit competence strengthens the ability to detect irregularities and identify fraud indicators. Furthermore, whistleblowing systems encourage employees and stakeholders to report unethical or fraudulent conduct. Nevertheless, previous empirical studies have produced inconsistent findings regarding the effectiveness of these mechanisms in preventing fraud.

These inconsistencies suggest that organizational control systems alone may be insufficient to explain variations in fraud prevention effectiveness. Human behavior and ethical considerations also play critical roles in determining whether control mechanisms function effectively. Professional ethics, defined as the moral principles and standards guiding professional conduct, may strengthen fraud prevention efforts by influencing ethical decision-making, accountability, and compliance with organizational policies. Individuals with strong ethical values are more likely to uphold professional responsibilities, resist fraudulent behavior, and support organizational integrity.

This study is grounded in the Theory of Planned Behavior (TPB) and Fraud Triangle Theory. The Theory of Planned Behavior explains that individual behavior is influenced by attitudes, subjective norms, and perceived behavioral control, while Fraud Triangle Theory identifies pressure, opportunity, and rationalization as key determinants of fraudulent behavior. Integrating these perspectives suggests that professional ethics can reduce rationalization, strengthen self-control, and enhance the effectiveness of organizational control mechanisms in preventing fraud.

Therefore, this study aims to examine the effects of information systems, internal audit, audit competence, and whistleblowing systems on fraud prevention within plantation

and agribusiness companies. In addition, the study investigates the moderating role of professional ethics in strengthening the relationships between these organizational factors and fraud prevention. By integrating technological, organizational, and ethical perspectives, this research contributes to the development of a more comprehensive fraud prevention framework and provides practical insights for improving governance and fraud control practices in the plantation and agribusiness industry.

REVIEW OF LITERATURE

Theoretical Foundation and Hypothesis Development

Fraud prevention constitutes a fundamental component of organizational governance because fraudulent activities can adversely affect financial performance, operational effectiveness, organizational reputation, and stakeholder trust. Consequently, understanding the determinants of fraud prevention requires an examination of both organizational control mechanisms and behavioral factors that influence individual decision-making.

This study is primarily grounded in the Theory of Planned Behavior (TPB), Fraud Triangle Theory, and Agency Theory. According to the Theory of Planned Behavior, individual behavior is influenced by behavioral intentions, which are shaped by attitudes, subjective norms, and perceived behavioral control. Within organizational settings, control systems, monitoring mechanisms, and governance structures enhance perceived behavioral control, while ethical values influence attitudes toward ethical and unethical conduct. Individuals who perceive strong organizational controls and possess positive ethical attitudes are more likely to engage in behaviors that support fraud prevention.

Fraud Triangle Theory, introduced by Cressey, explains that fraudulent behavior emerges when three conditions coexist: pressure, opportunity, and rationalization. Organizational control mechanisms primarily aim to reduce opportunities for fraud, whereas ethical awareness helps minimize rationalization. Therefore, effective fraud prevention requires not only robust internal controls but also strong ethical values that discourage individuals from justifying unethical behavior.

Agency Theory further explains that conflicts of interest may arise between principals and agents due to information asymmetry. When agents possess information unavailable to principals, opportunities for self-serving behavior and fraudulent actions may increase. Accordingly, organizations implement monitoring mechanisms, transparency systems, and governance controls to reduce agency conflicts and mitigate fraud risk. Based on these theoretical perspectives, fraud prevention is influenced by technological infrastructure, organizational control systems, professional competence, reporting mechanisms, and ethical values.

Information Systems and Fraud Prevention

Information systems play a strategic role in enhancing organizational transparency, accountability, and monitoring effectiveness. Reliable information systems ensure that operational and financial transactions are accurately recorded, properly documented, and easily traceable. The integration of digital technologies and automated processes reduces manual intervention, minimizes human error, and limits opportunities for manipulation and fraudulent activities.

Moreover, integrated information systems facilitate real-time monitoring and enable

management to identify irregularities more efficiently. The availability of accurate and timely information strengthens decision-making processes and improves organizational control effectiveness. Therefore, organizations equipped with reliable information systems are expected to demonstrate stronger fraud prevention capabilities.

H1: Information systems positively affect fraud prevention.

Internal Audit and Fraud Prevention

Internal audit functions serve as an essential governance mechanism by providing independent and objective evaluations of internal controls, risk management practices, and organizational governance processes. Through systematic examination and continuous monitoring, internal auditors assist management in identifying weaknesses in control systems and ensuring compliance with organizational policies and regulations.

An effective internal audit function increases the likelihood of detecting fraud indicators before they develop into significant organizational losses. However, the effectiveness of internal audit activities depends on auditor independence, professional competence, organizational support, and adequate authority. Strong internal audit functions are therefore expected to contribute positively to fraud prevention.

H2: Internal audit positively affects fraud prevention.

Audit Competence and Fraud Prevention

Audit competence refers to the knowledge, skills, expertise, and professional experience required to perform audit responsibilities effectively. Competent auditors possess a greater ability to identify fraud indicators, evaluate internal control weaknesses, and assess organizational risks comprehensively. Professional competence enables auditors to recognize unusual transaction patterns, detect anomalies, and exercise sound professional judgment when evaluating evidence. Consequently, higher levels of audit competence are expected to improve the effectiveness of fraud prevention activities within organizations.

H3: Audit competence positively affects fraud prevention.

Whistleblowing System and Fraud Prevention

A whistleblowing system is a formal mechanism that enables employees and stakeholders to report unethical, illegal, or fraudulent activities occurring within an organization. Effective whistleblowing systems enhance organizational transparency and increase the probability that fraudulent behavior will be detected and addressed promptly.

The existence of secure reporting channels may discourage potential perpetrators from engaging in fraudulent conduct because of the increased risk of exposure. However, the effectiveness of whistleblowing systems largely depends on confidentiality protection, management commitment, organizational culture, and employees' trust in the reporting process.

H4: Whistleblowing systems positively affect fraud prevention.

Professional Ethics as a Moderating Variable

Professional ethics encompass the moral values, principles, and standards that guide professional conduct and decision-making. Ethical values influence individual behavior by promoting integrity, responsibility, fairness, and accountability in organizational activities. From the perspective of the Theory of Planned Behavior and Fraud Triangle Theory, professional ethics can strengthen fraud prevention mechanisms by reducing rationalization

and encouraging compliance with ethical standards. Individuals with strong ethical awareness are more likely to utilize organizational control mechanisms responsibly and resist opportunities for unethical conduct. Consequently, professional ethics may strengthen the relationships between organizational control mechanisms and fraud prevention effectiveness. The moderating hypotheses are formulated as follows:

H5: Professional ethics moderates the relationship between information systems and fraud prevention.

H6: Professional ethics moderates the relationship between internal audit and fraud prevention.

H7: Professional ethics moderates the relationship between audit competence and fraud prevention.

H8: Professional ethics moderates the relationship between whistleblowing systems and fraud prevention.

Research Gap and Conceptual Framework

Although previous studies have extensively examined the determinants of fraud prevention, empirical findings remain inconsistent, and limited research has integrated technological, organizational, and ethical dimensions within a single framework, particularly in the plantation and agribusiness industry. Most prior studies focus on individual determinants or specific sectors such as banking, public administration, or manufacturing, leaving the plantation sector relatively underexplored despite its unique operational complexity and decentralized management structure.

To address this gap, the present study develops an integrated fraud prevention model that combines information systems, internal audit, audit competence, and whistleblowing systems as organizational determinants, while incorporating professional ethics as a moderating variable. By adopting a contingency perspective, this study proposes that the effectiveness of organizational control mechanisms depends not only on their existence but also on the ethical values that support their implementation. Based on the theoretical framework and empirical evidence, this study examines the direct effects of information systems, internal audit, audit competence, and whistleblowing systems on fraud prevention, while simultaneously investigating the moderating role of professional ethics in strengthening these relationships within the plantation and agribusiness industry context.

RESEARCH METHOD

This study employed a quantitative cross-sectional survey design to examine the effects of information systems, internal audit, audit competence, and whistleblowing systems on fraud prevention, as well as the moderating role of professional ethics. The population consisted of employees working in internal audit, finance, accounting, compliance, and internal control functions within plantation and agribusiness companies in Indonesia. Using purposive sampling, 100 respondents who met predetermined criteria were selected. Primary data were collected through structured questionnaires adapted from validated instruments in fraud prevention, auditing, and corporate governance studies. All variables were measured using a five-point Likert scale ranging from 1 (strongly disagree) to 5 (strongly agree). Fraud prevention served as the dependent variable, while information systems, internal audit, audit competence, and whistleblowing systems were treated as independent variables. Professional

ethics was included as a moderating variable. Data were analyzed using Moderated Regression Analysis (MRA) to assess both direct and interaction effects. Prior to hypothesis testing, validity, reliability, normality, multicollinearity, and heteroscedasticity tests were conducted to ensure the robustness of the regression model. All statistical analyses were performed using SPSS software.

RESULTS AND DISCUSSION

This section presents the empirical findings of the study and discusses their implications in relation to the research objectives and proposed hypotheses. The results were derived from data collected from 100 respondents working in internal audit, finance, accounting, compliance, and control-related functions within plantation and agribusiness companies in Indonesia.

Descriptive Statistics

Descriptive statistics were employed to provide an overview of respondents' perceptions regarding the variables investigated in this study. The respondents generally reported positive perceptions of fraud prevention practices implemented within their organizations. The majority had more than one year of professional experience, indicating adequate familiarity with internal control systems, auditing activities, and fraud prevention mechanisms. Among the independent variables, information systems and audit competence recorded relatively higher mean scores, suggesting that respondents perceived technological support and professional capabilities as important elements in strengthening fraud prevention. In contrast, internal audit effectiveness and whistleblowing system implementation received comparatively lower evaluations, indicating potential challenges in their practical implementation within plantation companies.

Hypothesis Testing Results

The hypotheses were tested using Moderated Regression Analysis (MRA). The results reveal that information systems and audit competence have significant positive effects on fraud prevention, supporting Hypotheses H1 and H3. These findings indicate that effective technological infrastructure and competent auditors play a critical role in minimizing fraud risks and enhancing organizational control.

Conversely, internal audit and whistleblowing systems do not exhibit statistically significant effects on fraud prevention. Therefore, Hypotheses H2 and H4 are not supported. These results suggest that the existence of formal monitoring and reporting mechanisms alone may not be sufficient to improve fraud prevention effectiveness within the plantation and agribusiness sector. Regarding the moderating effects, professional ethics significantly strengthens the relationship between audit competence and fraud prevention, thereby supporting Hypothesis H7. However, professional ethics does not significantly moderate the relationships between information systems, internal audit, and whistleblowing systems with fraud prevention. Consequently, Hypotheses H5, H6, and H8 are not supported. Overall, the regression model demonstrates satisfactory explanatory power, indicating that the proposed framework provides meaningful insights into the determinants of fraud prevention in plantation and agribusiness organizations.

Discussion

The findings demonstrate that information systems significantly enhance fraud prevention. From the perspective of Fraud Triangle Theory, effective information systems reduce opportunities for fraud by strengthening internal controls, increasing transparency, and facilitating real-time monitoring. Integrated databases and automated transaction processing reduce human intervention and limit opportunities for manipulation. This result supports previous studies emphasizing the role of digital technologies in improving organizational governance and fraud control.

Audit competence was also found to have a significant positive influence on fraud prevention. Competent auditors possess the technical expertise, analytical capability, professional skepticism, and practical experience necessary to identify fraud indicators and evaluate control weaknesses effectively. This finding is consistent with the Theory of Planned Behavior, which suggests that perceived behavioral control influences individual actions. Auditors who possess greater competence are more confident and capable of undertaking proactive fraud prevention activities.

In contrast, internal audit did not significantly affect fraud prevention. Although internal audit is theoretically expected to strengthen governance and monitoring, its effectiveness may be constrained by organizational factors. In plantation companies, operational activities are often geographically dispersed, making supervision more difficult and reducing audit coverage. Consequently, the existence of an internal audit function does not automatically guarantee effective fraud prevention unless supported by adequate resources, independence, and management commitment.

Similarly, the whistleblowing system was found to have no significant influence on fraud prevention. This finding suggests that establishing reporting channels alone is insufficient to encourage misconduct reporting. Employees may remain reluctant to report unethical behavior due to fear of retaliation, concerns regarding confidentiality, or a lack of trust in management responses. Therefore, the effectiveness of whistleblowing systems depends not only on procedural mechanisms but also on the development of a supportive organizational culture characterized by trust and psychological safety.

The moderating role of professional ethics provides important theoretical insights. The results indicate that professional ethics significantly strengthens the relationship between audit competence and fraud prevention. This finding implies that technical competence becomes more effective when accompanied by strong ethical values. Auditors with high professional competence and ethical awareness are more likely to apply their knowledge responsibly and consistently in detecting and preventing fraudulent activities.

However, professional ethics does not significantly moderate the effects of information systems, internal audit, or whistleblowing systems on fraud prevention. This result suggests that ethical values primarily reinforce human-centered determinants rather than structural control mechanisms. In other words, ethical awareness appears to enhance the effectiveness of individual capabilities more than organizational systems and procedures.

Theoretical and Practical Implications

From a theoretical perspective, this study contributes to the fraud prevention literature by integrating technological, organizational, and ethical dimensions into a comprehensive framework. The findings demonstrate that effective fraud prevention

requires not only formal control mechanisms but also competent human resources supported by strong ethical values. From a practical perspective, plantation and agribusiness companies should prioritize investments in information technology and auditor competency development. Professional ethics training programs should also be strengthened to ensure that technical expertise is applied responsibly and consistently. By combining technological capability, professional competence, and ethical culture, organizations can establish a more sustainable and effective fraud prevention system.

Table 1
Descriptive Statistics

Variable	Mean	Standard Deviation	Minimum	Maximum
Fraud Prevention	4.12	0.56	2.80	5.00
Information Systems	4.08	0.61	2.60	5.00
Internal Audit	3.95	0.63	2.40	5.00
Audit Competence	4.20	0.52	3.00	5.00
Whistleblowing System	3.87	0.70	2.20	5.00
Professional Ethics	4.25	0.48	3.10	5.00

Source: *Processed Research Data.*

Descriptive Statistics

Table 1 presents the descriptive statistics for all research variables. Overall, the respondents perceived the implementation of fraud prevention practices within their organizations positively, as reflected by the relatively high mean score (Mean = 4.12). Among the explanatory variables, professional ethics (Mean = 4.25) and audit competence (Mean = 4.20) obtained the highest average scores, indicating that respondents consider ethical conduct and auditor expertise to be the most critical factors in supporting effective fraud prevention. Meanwhile, the whistleblowing system recorded the lowest mean score (Mean = 3.87), suggesting that respondents perceived its implementation as relatively less effective compared with the other organizational control mechanisms.

Table 2.
Descriptive Statistics

Variable	Mean	Standard Deviation	Minimum	Maximum
Fraud Prevention	4.12	0.56	2.80	5.00
Information Systems	4.08	0.61	2.60	5.00
Internal Audit	3.95	0.63	2.40	5.00
Audit Competence	4.20	0.52	3.00	5.00
Whistleblowing System	3.87	0.70	2.20	5.00
Professional Ethics	4.25	0.48	3.10	5.00

Source: *Processed Research Data.*

Moderated Regression Analysis Results

To examine the proposed hypotheses, Moderated Regression Analysis (MRA) was performed to estimate both the direct effects of the independent variables and the interaction effects of professional ethics on fraud prevention. The regression results are summarized in Table 2.

Table 3.
Moderated Regression Analysis Results

Variable	Coefficient (β)	t-Value	Sig.	Tolerance	VIF
Constant	1.756	2.284	0.025	—	—
Information Systems (IS)	0.231	2.845**	0.006	0.734	1.362
Internal Audit (IA)	0.104	1.287	0.201	0.698	1.433
Audit Competence (AC)	0.318	3.512**	0.001	0.756	1.323
Whistleblowing System (WS)	0.081	1.034	0.304	0.667	1.498
Professional Ethics (PE)	0.192	2.176*	0.032	0.712	1.405
IS $\times$ PE	0.048	0.702	0.485	0.584	1.712
IA $\times$ PE	0.036	0.521	0.604	0.563	1.775
AC $\times$ PE	0.215	2.398*	0.019	0.597	1.675
WS $\times$ PE	0.039	0.587	0.559	0.573	1.744

Source: *Processed Research Data.*

Note: $p < 0.05$; $p < 0.01$.

Dependent Variable: Fraud Prevention.

Model Evaluation

The overall regression model demonstrates satisfactory explanatory power and statistical significance. The F-test result ($F = 17.964$, $p < 0.001$) indicates that the model adequately explains the relationship between the predictors and fraud prevention. Furthermore, the adjusted coefficient of determination (Adjusted $R^2 = 0.534$) suggests that approximately 53.4% of the variation in fraud prevention can be explained by information systems, internal audit, audit competence, whistleblowing systems, professional ethics, and their interaction effects. The diagnostic statistics also confirm the absence of multicollinearity, as all tolerance values exceed 0.10 and all VIF values remain well below the recommended threshold of 10.

Discussion of Findings

The empirical findings indicate that information systems have a positive and statistically significant effect on fraud prevention. This suggests that integrated and reliable information systems improve organizational transparency, strengthen internal monitoring, and minimize opportunities for fraudulent behavior through better documentation and real-time transaction monitoring. Conversely, internal audit does not significantly influence fraud prevention. Although internal audit is recognized as an essential governance mechanism, its effectiveness may depend on factors such as auditor independence, sufficient organizational authority, resource availability, and strong management

commitment. Therefore, the existence of an internal audit function alone does not necessarily translate into effective fraud prevention.

The results further reveal that audit competence significantly enhances fraud prevention. Auditors possessing strong technical expertise, professional knowledge, analytical capability, and practical experience are better equipped to detect irregularities, evaluate control weaknesses, and identify fraud risks. These competencies enable organizations to implement more effective fraud prevention strategies.

In contrast, the whistleblowing system does not show a statistically significant effect on fraud prevention. This finding may indicate that formal reporting mechanisms are not fully effective due to concerns regarding confidentiality, fear of retaliation, limited trust in management, or insufficient legal and organizational protection for whistleblowers.

Regarding the moderating effects, professional ethics significantly strengthens the positive relationship between audit competence and fraud prevention. This finding implies that technical competence becomes substantially more effective when combined with high ethical standards, enabling auditors to apply their expertise responsibly and consistently. However, professional ethics does not significantly moderate the relationships between information systems, internal audit, or whistleblowing systems and fraud prevention, suggesting that ethical values primarily reinforce individual professional capabilities rather than organizational control mechanisms.

CONCLUSIONS

This study examines the effects of information systems, internal audit, audit competence, and whistleblowing systems on fraud prevention, as well as the moderating role of professional ethics in plantation and agribusiness companies. The findings indicate that information systems significantly enhance fraud prevention by improving transparency, monitoring capabilities, and transaction accuracy. Reliable and integrated systems reduce opportunities for fraud and strengthen internal control effectiveness. Audit competence also has a significant positive effect on fraud prevention. Auditors with strong technical knowledge, analytical skills, and professional experience are more capable of identifying fraud risks and implementing effective preventive measures. In contrast, internal audit and whistleblowing systems do not show significant direct effects on fraud prevention. This suggests that formal mechanisms alone are insufficient without strong implementation, organizational support, and effective utilization.

Professional ethics strengthens the relationship between audit competence and fraud prevention, highlighting that ethical values enhance the effectiveness of professional skills. Ethical awareness promotes responsible behavior and improves fraud prevention outcomes. Overall, fraud prevention effectiveness is determined by the integration of technological systems, auditor competence, and ethical values. Organizations are encouraged to strengthen system reliability, improve professional capacity, and foster an ethical organizational culture. Suggestions

Based on the findings, several recommendations are proposed. First, plantation and agribusiness companies should enhance the integration, reliability, and effectiveness of their information systems to improve transparency and reduce fraud risks. Second, organizations

should continuously improve audit competence through professional education, certification programs, and specialized fraud detection training.

Third, internal audit functions should be strengthened by ensuring greater independence, authority, and organizational support to improve their effectiveness. Fourth, whistleblowing systems should be improved by ensuring confidentiality, legal protection, and management responsiveness to build employee trust and encourage reporting of misconduct. Finally, future research is encouraged to expand the sample size, include other sectors, and incorporate additional variables such as organizational culture, governance quality, leadership style, and risk management maturity to provide a more comprehensive understanding of fraud prevention mechanisms.

Limitations

Although this study provides empirical evidence on fraud prevention determinants in plantation and agribusiness companies in Indonesia, several limitations should be acknowledged. First, the study uses a cross-sectional design, where data were collected at a single point in time. This limits the ability to capture dynamic changes in organizational systems, ethical climate, and fraud prevention practices over time. A longitudinal design would provide stronger insights into causal relationships.

Second, the study relies on self-reported questionnaire data, which may be affected by social desirability bias, especially given the sensitive nature of fraud and professional ethics. Respondents may have provided answers that reflect organizational expectations rather than actual practices. Third, the sample is limited to employees in internal audit, finance, accounting, and control-related departments in plantation and agribusiness companies. This may restrict the generalizability of the findings to other industries or organizational contexts.

Fourth, the study only includes four independent variables and one moderating variable. Other relevant factors such as organizational culture, governance quality, leadership style, regulatory pressure, and risk management maturity were not included, which may explain the unexplained variance in fraud prevention. Finally, although Moderated Regression Analysis (MRA) is effective for testing interaction effects, it does not fully capture complex relationships among variables. Structural Equation Modeling (SEM) could provide deeper analytical insights. Suggestions

Based on these limitations, future research is encouraged to adopt longitudinal designs to better capture changes in fraud prevention mechanisms over time, especially in complex industries such as plantation and agribusiness. Researchers are also advised to expand the scope of study by including other industries or comparing different types of organizations, such as state-owned and private companies, to improve generalizability.

Future studies should incorporate additional variables such as organizational culture, governance effectiveness, leadership integrity, and digital transformation maturity to develop a more comprehensive fraud prevention model. Mixed-method approaches combining quantitative and qualitative data are also recommended to enrich contextual understanding and reduce bias from self-reported surveys.

From a practical perspective, organizations should strengthen auditor competence development and institutionalize professional ethics as part of organizational culture, given their proven interaction in enhancing fraud prevention effectiveness. Policymakers may also

use these findings to support the development of integrated frameworks combining technology, governance, and ethics in fraud prevention strategies.

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