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Determinants of internal audit effectiveness and its mediating role in fraud prevention

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Abstract: This study examines the determinants of internal audit effectiveness and its mediating role in fraud prevention within Vietnamese listed firms. A quantitative approach was adopted, with data collected from 228 internal auditors, chief accountants, CFOs, and audit committee members through structured questionnaires. Using Structural Equation Modeling, the results reveal that auditor competence, independence, information technology adoption, and collaboration between internal and external auditors significantly enhance internal audit effectiveness. In turn, internal audit effectiveness contributes to fraud prevention by strengthening internal controls, promoting transparency, and enabling early risk detection. Managerial support, however, demonstrated neither a direct nor an indirect effect on internal audit effectiveness or fraud prevention. These findings underscore the strategic role of internal audit in corporate governance and emphasize the need for capacity building within audit departments. The study offers practical insights for organizations and policymakers in emerging economies aiming to build robust anti-fraud frameworks and improve internal oversight mechanisms through more effective internal auditing practices.

Keywords: *Fraud prevention, Internal audit effectiveness, Internal auditor competence, Information technology.*

1. Introduction

In recent years, global financial scandals have underscored the need for strong internal control systems to prevent fraud and improve transparency. In Vietnam, rising concerns over corporate governance have intensified following accounting irregularities and market integration.

Internal Audit plays a critical role beyond compliance, serving as a strategic function in fraud detection. However, the effectiveness of internal audit (IAE) depends on several factors—auditor competence, independence, IT integration, managerial support, and cooperation with external auditors.

While previous studies have addressed internal audit quality [1, 2] few have explored its mediating role in fraud prevention. This study fills that gap using Structural Equation Modeling (SEM) to examine how these five factors influence IAE and ultimately enhance fraud control.

By focusing on companies listed on the Ho Chi Minh City and Hanoi Stock Exchanges, the study provides both theoretical insights and practical recommendations to strengthen internal governance in Vietnamese enterprises.

2. Literature Review

Fraud prevention has become a key concern in both academic and corporate settings, especially in emerging economies. Internal audit plays a vital role in reducing fraud risk [3, 4].

The Institute of Internal Auditors defines internal audit as an independent, objective function that adds value and improves operations [5]. Its effectiveness is closely linked to an organization's ability to prevent fraud [1, 2]. Recent studies highlight that IAE is shaped by factors such as auditor competence, independence, IT use, managerial support, and collaboration with external auditors [6].

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While these factors have been examined individually, their combined and mediating effects on fraud prevention—particularly within Vietnam's transitional market—remain understudied. Issues like limited IT adoption and inconsistent managerial support further complicate their interaction.

2.1. Internal Audit Effectiveness

IAE has been widely discussed in relation to risk management, internal control, and corporate governance. According to the Institute of Internal Auditors, IA is "an independent, objective assurance and consulting activity designed to add value and improve an organization's operations" [5].

IA is considered effective when it helps achieve organizational goals by enhancing control and governance systems [2, 7]. As noted in Nguyen, et al. [8] effective IA must go beyond compliance to drive continuous improvement. Rather than merely monitoring, it should add strategic value [1].

A broader framework proposed in Mihret, et al. [9] views IAE as the extent to which audit objectives are met—ranging from control reinforcement to fraud detection. In transitional economies like Vietnam, limited resources, authority, and IT infrastructure often hinder this potential [8].

Stakeholder perceptions also shape IAE. As highlighted in Stewart and Subramaniam [10] audit functions are more effective when seen as independent and competent. This encourages cooperation and boosts influence.

IAE plays a vital role in fraud prevention. Studies show that stronger audit functions lead to better fraud detection [3, 4]. Failures in IA have contributed to major scandals like Enron and WorldCom [11].

In short, IAE results from the interplay of multiple factors: auditor competence, independence, IT use, managerial support, and coordination with external auditors. These will be explored in the following sections, with a focus on Vietnamese enterprises.

2.2. Factors Influencing Internal Audit Effectiveness

2.2.1. Internal Auditor Competence

Competence is a core driver of internal audit effectiveness. The ISPPIA requires that internal auditors possess the knowledge, skills, and competencies necessary to fulfill their roles [12]. Without these, auditors cannot meet assurance or advisory expectations—especially in dynamic environments [1, 9].

Competence includes both technical expertise and soft skills such as critical thinking and ethical judgment. It determines whether audit findings are accepted and acted upon [13]. In the digital age, auditors must also address IT risks, cybersecurity, and analytics. Studies stress the importance of continuous professional development to meet these demands [14, 15].

In Vietnam, concerns persist over the readiness of accounting graduates. A study revealed a disconnect between academic training and real-world auditing needs—particularly in fraud risk assessment and risk-based planning [8].

Moreover, a lack of continuing education limits auditors' ability to meet global standards or detect complex fraud schemes. Research confirms that competent auditors are more likely to uncover early fraud indicators and recommend credible actions [3, 6].

Based on this, the study hypothesizes that auditor competence significantly enhances internal audit effectiveness and strengthens fraud prevention in Vietnamese listed firms.

2.2.2. Internal Auditor Independence

Independence is a core principle of internal auditing. The IIA defines it as "freedom from conditions that threaten the ability to carry out responsibilities in an unbiased manner," reinforcing the need for objectivity [5, 10].

The ISPPIA mandates that internal auditors report functionally to the audit committee or board, ensuring they can evaluate management without pressure [12, 13]. Independence allows auditors to exercise professional judgment without interference.

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Studies affirm its centrality to audit effectiveness. Independence is consistently ranked as a top factor influencing performance [16]. Yet in developing countries, institutional barriers such as unclear reporting lines and cultural expectations often compromise auditor objectivity [17].

In Vietnam, many auditors remain under finance or accounting departments, limiting their authority and fostering conflicts of interest. Organizational culture often favors loyalty over skepticism, discouraging auditors from raising red flags [8].

Weak independence also increases fraud risk. High-profile cases like Enron and WorldCom illustrate how compromised auditor autonomy enables misconduct [11]. Truly independent audit functions are more likely to detect fraud early and provide actionable recommendations [3].

Moreover, independence must be both actual and perceived. If auditors appear too aligned with management, stakeholders may distrust their findings—reducing cooperation and whistleblower engagement [4].

Therefore, this study hypothesizes that internal auditor independence significantly enhances audit effectiveness and supports fraud prevention in Vietnamese listed firms.

2.2.3. Information Technology

Information Technology (IT) plays a critical role in enhancing the efficiency, scope, and accuracy of internal audits. As organizations digitize, auditors are expected to leverage IT tools for real-time data analysis and risk assessment, moving beyond manual, periodic evaluations.

IT integration into internal audit has been shown to improve anomaly detection, streamline processes, and enhance audit quality [7, 11, 14]. Tools such as data analytics, CAATs, and risk management platforms support continuous auditing and proactive fraud detection.

However, in Vietnam, IT adoption in internal auditing remains limited. Many firms still rely on manual systems, lacking investment in audit technologies [8]. This limits the agility and effectiveness of internal audit functions in responding to complex fraud risks.

Effective IT use also hinges on auditors' digital competence. Without proper training, auditors may misinterpret data or overlook critical issues [15]. As noted in Budiman, et al. [3] and Hanifah and Alkautsar [6] IT-enabled audits are more accurate, timely, and impactful in preventing fraud.
Thus, this study posits that IT adoption significantly boosts internal audit effectiveness and strengthens fraud prevention in Vietnamese enterprises.

2.2.4. Managerial Support

Managerial support is vital to the effectiveness of internal audit. No matter how well-designed, audit functions require executive backing to secure resources, access data, and implement recommendations. As noted in Van Gansberghe [7] strong IA functions often reflect strong top management commitment.

Support may include funding, access, and action on audit findings. When internal audit is seen as a strategic partner—not just a compliance task—it promotes a culture of accountability. In contrast, lack of support can marginalize audit efforts and stall corrective actions.

Empirical studies affirm this link. Implementation of audit recommendations depends heavily on managerial engagement [2] while leadership buy-in enhances audit credibility and performance [1].

In Vietnam, support for internal audit varies. Larger firms are increasingly recognizing its value, yet many still treat IA as a formality. Internal auditors often report to CFOs rather than independent committees, limiting their influence [8].

Managerial support also affects fraud prevention. Organizations with strong executive backing detect fraud more effectively and respond faster to risks [3].

Thus, this study proposes that managerial support significantly influences internal audit effectiveness and, consequently, enhances organizational fraud prevention.

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2.2.5. The Relationship Between Internal Audit and External Audit

A strong relationship between internal and external audit enhances the overall assurance function. Though independent, both functions intersect in areas such as risk assessment, controls, and fraud detection. Coordination improves efficiency, reduces redundancy, and strengthens audit coverage [10].

Effective collaboration requires clear role definition, communication, and trust. When aligned, these functions reinforce one another, boosting the credibility of financial reporting and facilitating early fraud detection [13].

External auditors are more likely to rely on internal audit work when it is professional, competent, and objective [13]. This reliance streamlines external audits and maximizes resource use. Conversely, siloed operations risk duplication and missed red flags.

In Vietnam, audit collaboration is still maturing. Many firms lack formal coordination protocols, and cultural barriers may inhibit open dialogue between internal and external auditors [8]. This weakens the assurance process and impairs fraud detection.

Studies show that close cooperation between audit functions leads to better governance outcomes, improved risk management, and greater stakeholder confidence [3, 6].

Therefore, this study proposes that strong internal–external audit relationships enhance internal audit effectiveness and support organizational fraud prevention.

2.3. Internal Audit Effectiveness in Fraud Prevention

IAE plays a pivotal role in fraud prevention. Beyond assessing controls and compliance, IA acts as an early warning system—detecting irregularities and recommending timely corrective actions [3].

Fraud, as defined by the ACFE, involves intentional deception for personal gain. Effective IA helps reduce such risks by identifying weak points, monitoring high-risk transactions, and promoting accountability [2, 6].

Empirical evidence shows that organizations with strong IA functions experience fewer fraud incidents and improved response times [3]. Competence, independence, and sufficient resources significantly enhance audit effectiveness [1, 6]. Advanced skills in analytics and investigation further boost fraud detection capabilities.

IA also adds value by influencing decision-making and fostering a culture of transparency [2]. However, in Vietnam, internal audit still faces barriers such as limited authority, poor IT infrastructure, and weak strategic positioning [8].

Failures in internal audit have contributed to major scandals, reinforcing its critical role in safeguarding assets and organizational integrity [11]. A functioning IA system serves as both deterrent and detector of misconduct [4, 16].

This study therefore posits that IAE is not only a mediating factor but a strategic pillar of fraud prevention, particularly within the governance context of Vietnamese listed firms.

3. Research Model and Hypotheses Development

Based on the theoretical framework, this study proposes a conceptual model in which five independent variables—internal auditor competence (IAC), internal auditor independence (IAI), information technology (IT), managerial support (MS), and the relationship between internal and external audits (IAEA)—are hypothesized to positively influence internal audit effectiveness (IAE). In turn, internal audit effectiveness is hypothesized to have a positive effect on fraud prevention (FP). Furthermore, IAE is proposed as a mediating variable linking organizational factors to fraud prevention outcomes.

The structural model, as shown in Figure 1, allows for the assessment of both direct and indirect effects using Structural Equation Modeling (SEM).

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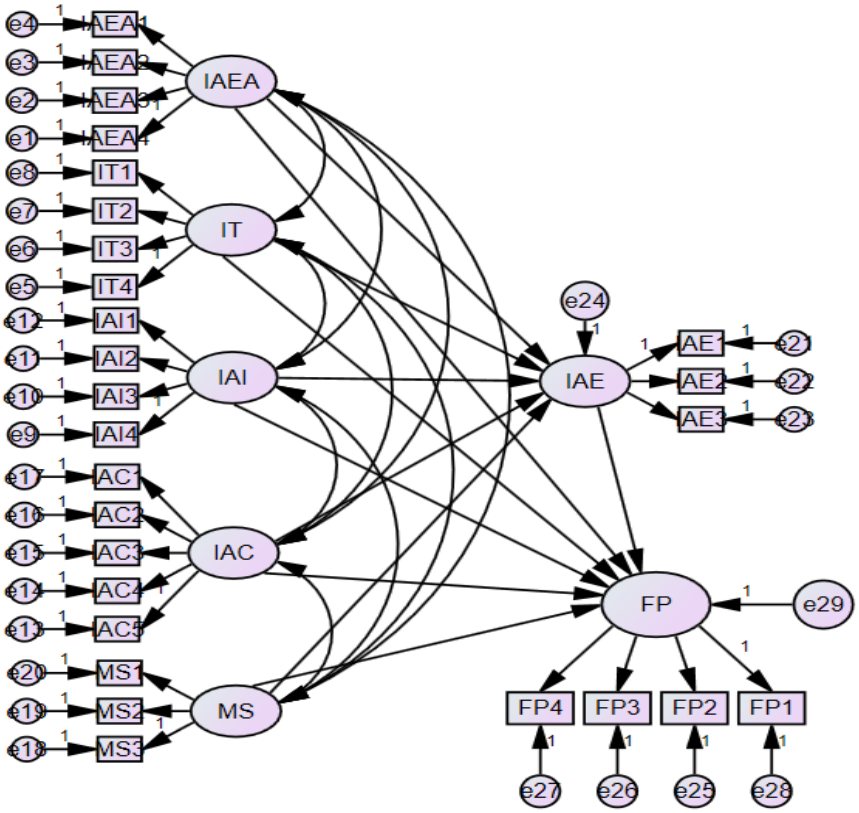

Figure 1.
The conceptual model for structural equation analysis.

Based on the proposed research model, the research hypotheses are formulated as follows:

H_1: Internal Auditor Competence has a positive impact on the Internal Audit Effectiveness.

H_2: Internal Auditor Independence has a positive impact on the Internal Audit Effectiveness.

H_3: Information Technology has a positive impact on the Internal Audit Effectiveness.

H_4: Managerial Support has a positive impact on the Internal Audit Effectiveness.

H_5: Relationship between Internal Audit and External Audit has a positive impact on the Internal Audit Effectiveness.

H_6: The Internal Audit Effectiveness has a positive impact on Fraud Prevention.

H_7: Internal Auditor Competence has an indirect impact on Fraud Prevention through the Internal Audit Effectiveness.

H_8: Internal Auditor Independence has an indirect impact on Fraud Prevention through the Internal Audit Effectiveness.

H_9: Information Technology has an indirect impact on Fraud Prevention through the Internal Audit Effectiveness.

H_{10}: Managerial Support has an indirect impact on Fraud Prevention through the Internal Audit Effectiveness.

H_{11}: Relationship between Internal Audit and External Audit has an indirect impact on Fraud Prevention through the Internal Audit Effectiveness.

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4. Research Methodology

4.1. Research Design

This study adopts a quantitative research approach using Structural Equation Modeling (SEM) to examine the relationships between organizational factors, internal audit effectiveness, and fraud prevention. The research is explanatory in nature, aiming to test hypotheses derived from existing theories and prior empirical studies. The survey method was chosen for data collection due to its efficiency in obtaining standardized responses from a large number of participants.

4.2. Population and Sampling

The target population includes internal auditors, chief accountants, chief financial officers (CFOs), and audit committee members working in companies listed on the Ho Chi Minh City Stock Exchange (HOSE) and Hanoi Stock Exchange (HNX) in Vietnam. These individuals are considered knowledgeable and directly involved in internal audit and fraud risk management processes.

A convenience sampling method was used due to limited access to a comprehensive sampling frame. A total of 350 questionnaires were distributed, and 228 valid responses were collected, resulting in a usable response rate of approximately 65%. This sample size is considered adequate for SEM analysis based on recommendations by Hair, et al. [14].

4.3. Data Collection

Primary data were collected through a structured questionnaire distributed via email and in-person to eligible respondents during the first quarter of 2024. Participants were assured of the confidentiality of their responses and were informed that the data would be used for academic research purposes only.

The questionnaire included two main sections: (1) Demographic information (position, experience, firm size, etc.); (2) Items measuring the latent variables in the proposed model using a five-point Likert scale ranging from 1 = "Strongly Disagree" to 5 = "Strongly Agree."

4.4. Measurement Instrument

All measurement items were adapted from established scales in prior literature to ensure content validity. Each latent construct was measured by three to five observed variables, with wording slightly modified for contextual relevance in the Vietnamese corporate environment. Below is the summary of observed variables and their reference sources:

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Table 1.
Observed Variables and Reference Sources

Latent Variable	Observed Variable	Code	Source
Internal Auditor Competence (IAC)	Professional Knowledge	IAC1	Al-Twaijry, et al. [13]
	Analytical Skills	IAC2	Arena and Azzone [1]
	Understanding of Business Operations	IAC3	Mihret and Yismaw [2]
	Problem-Solving Ability	IAC4	Fornell and Larcker [15]
	Work Experience	IAC5	Van Gansberghe [7]
Internal Auditor Independence (IAI)	Ability to Provide Objective Assessments	IAI1	Vanasco [16]
	Avoidance of Conflict of Interest	IAI2	Vanasco [16]
	Ability to Perform Uninfluenced Audits	IAI3	Vanasco [16]
	Transparency in Reporting	IAI4	Stewart and Subramaniam [10]
Information Technology (IT)	Use of Audit Software	IT1	Hanifah and Alkautsar [6]
	Big Data Analysis Capability	IT2	Fornell and Larcker [15]
	Information System Integration	IT3	[7]
	Automation of Audit Processes	IT4	Arena and Azzone [1]
Managerial Support (MS)	Provision of Sufficient Resources	MS1	Van Gansberghe [7]
	Support During the Audit Process	MS2	Mihret and Yismaw [2]
	Encouragement of Improvement	MS3	Stewart and Subramaniam [10]
The relationship between Internal Audit and External Audit (IAEA)	Information Sharing Between Parties	IAEA1	Fornell and Larcker [15]
	Collaboration in Work	IAEA2	Arena and Azzone [1]
	Enhanced Audit Effectiveness	IAEA3	Fornell and Larcker [15]
	Audit Cost Reduction	IAEA4	Stewart and Subramaniam [10]
Internal Audit Effectiveness (IAE)	Ability to Detect Errors	IAE1	Vanasco [16]
	Ability to Recommend Improvements	IAE2	Al-Twaijry, et al. [13]
	Evaluation and Improvement of Control Systems	IAE3	Arena and Azzone [1]
Fraud Prevention (FP)	Early Fraud Detection	FP1	Budiman, et al. [3]
	Effective Risk Control	FP2	Vanasco [16]
	Enhanced Regulatory Compliance	FP3	Fornell and Larcker [15]
	Improved Corporate Culture	FP4	Stewart and Subramaniam [10]

5. Results

5.1. Demographic Profile of Respondents

A total of 228 valid responses were obtained from professionals working in internal audit or finance-related functions in Vietnamese listed enterprises. Among the respondents, 41.2% were internal auditors, 28.5% were chief accountants, 19.3% were chief financial officers (CFOs), and 11.0% were members of audit committees.

In terms of professional experience, 64.5% of respondents had over five years of experience, 24.6% had between three to five years, and the remaining 10.9% had less than three years. This indicates that most participants had significant practical exposure to internal audit activities.

Regarding company size, 71.1% of respondents were from large-sized enterprises (over 300 employees), while 28.9% were from medium-sized listed firms. The geographic distribution of participants covered both Ho Chi Minh City and Hanoi stock exchanges, ensuring diversity in organizational characteristics and audit practices.

Overall, the demographic characteristics of the sample reflect a group of experienced professionals who are well-positioned to provide insights into internal audit effectiveness and fraud prevention mechanisms.

5.2. Reliability and Convergent Validity Testing

All constructs demonstrated acceptable reliability, with Cronbach's Alpha coefficients ranging from 0.81 to 0.88, exceeding the recommended threshold of 0.7. Composite Reliability (CR) values ranged from 0.82 to 0.89, indicating strong internal consistency. Average Variance Extracted (AVE) values were all above 0.5, ranging from 0.58 to 0.70, confirming convergent validity [14].

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These results indicate that the measurement scales used in the study are both reliable and valid for capturing the underlying latent constructs. A summary of the reliability and validity results is presented in Table 2.

Table 2.
Reliability and Validity Testing of the Scales

Latent Variable	Cronbach's Alpha	CR	AVE
Internal Auditor Competence (IAC)	0.84	0.85	0.62
Internal Auditor Independence (IAI)	0.87	0.88	0.67
Information Technology (IT)	0.88	0.89	0.70
Managerial Support (MS)	0.81	0.82	0.58
The relationship between internal audit and external audit (IAEA)	0.86	0.87	0.64
Internal Audit Effectiveness (IAE)	0.86	0.87	0.66
Fraud Prevention (FP)	0.83	0.84	0.61

5.3. Inter-Construct Correlations

In addition to internal consistency and convergent validity, the intercorrelations among latent variables were examined to assess the degree of association between constructs and to identify potential multicollinearity issues. The results are presented in Table 3.

As shown, all correlations among the latent variables are positive and statistically meaningful, with coefficients ranging from 0.43 to 0.72. The strongest correlation is found between Internal Audit Effectiveness (IAE) and Fraud Prevention (FP) ($r = 0.72$), supporting the central mediating role of IAE in the proposed model.

The correlations between independent variables (e.g., IAC, IAI, IT, MS, IAEA) range from 0.43 to 0.52, indicating moderate association and suggesting that each construct captures a distinct concept. Importantly, all intercorrelation values are well below the threshold of 0.85, confirming that multicollinearity is not a threat to the validity of the structural model [14].

Table 3.
Correlation Matrix between Latent Variables.

Variable	IAC	IAI	IT	MS	IAEA	IAE	FP
IAC	1	0.48	0.52	0.45	0.50	0.61	0.58
IAI	0.48	1	0.47	0.43	0.49	0.59	0.56
IT	0.52	0.47	1	0.49	0.51	0.62	0.60
MS	0.45	0.43	0.49	1	0.44	0.50	0.49
IAEA	0.50	0.49	0.51	0.44	1	0.55	0.54
IAE	0.61	0.59	0.62	0.50	0.55	1	0.72
FP	0.58	0.56	0.60	0.49	0.54	0.72	1

5.4. Discriminant Validity

Discriminant validity was assessed using the Fornell–Larcker criterion. According to this approach, the square root of the Average Variance Extracted (AVE) for each construct should be greater than its correlation with any other construct in the model. As shown in Table 4, all diagonal values ($\sqrt{AVE}$) exceed the corresponding inter-construct correlations, indicating that each latent variable is empirically distinct from the others. This confirms that the measurement model satisfies the requirement for discriminant validity [15].

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Table 4.
Fornell–Larcker Discriminant Validity Matrix.

Construct	IAC	IAI	IT	MS	IAEA	IAE	FP
IAC	0.79	0.48	0.52	0.45	0.50	0.61	0.58
IAI	0.48	0.82	0.47	0.43	0.49	0.59	0.56
IT	0.52	0.47	0.84	0.49	0.51	0.62	0.60
MS	0.45	0.43	0.49	0.76	0.44	0.50	0.49
IAEA	0.50	0.49	0.51	0.44	0.80	0.55	0.54
IAE	0.61	0.59	0.62	0.50	0.55	0.81	0.72
FP	0.58	0.56	0.60	0.49	0.54	0.72	0.78

5.5. Confirmatory Factor Analysis (CFA)

Confirmatory Factor Analysis (CFA) was conducted to evaluate the validity of the measurement model and to confirm the underlying factor structure of the latent variables. The results, presented in Table 5, indicate that all factor loadings exceeded the recommended threshold of 0.70, with values ranging from 0.69 to 0.85, thereby confirming adequate indicator reliability [14].

The Average Variance Extracted (AVE) values for all constructs ranged from 0.58 to 0.70, exceeding the minimum acceptable level of 0.50 and thus supporting convergent validity. Additionally, Composite Reliability (CR) values ranged from 0.82 to 0.89, surpassing the minimum criterion of 0.70 and indicating strong internal consistency reliability for all constructs.

The CFA results confirm that the observed variables adequately represent their respective latent constructs and that the measurement model demonstrates satisfactory reliability and validity.

Table 5.
Results of CFA Analysis

Latent Variable	Observed Variable	Factor Loadings	AVE	CR
Internal Auditor Competence (IAC)	IAC1	0.75	0.62	0.85
	IAC2	0.79		
	IAC3	0.72		
	IAC4	0.78		
	IAC5	0.77		
Internal Auditor Independence (IAI)	IAI1	0.81	0.67	0.88
	IAI2	0.77		
	IAI3	0.75		
	IAI4	0.76		
Information Technology (IT)	IT1	0.85	0.70	0.89
	IT2	0.83		
	IT3	0.81		
	IT4	0.82		
Management Support (MS)	MS1	0.69	0.58	0.82
	MS2	0.72		
	MS3	0.71		
The Relationship Between Internal Audit and External Audit (IAEA)	IAEA1	0.77	0.64	0.85
	IAEA2	0.76		
	IAEA3	0.75		
	IAEA4	0.78		
Internal Audit Effectiveness (IAE)	IAE1	0.80	0.66	0.87
	IAE2	0.82		
	IAE3	0.81		
Fraud Prevention (FP)	FP1	0.78	0.61	0.84
	FP2	0.80		
	FP3	0.82		
	FP4	0.81		

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5.6. Structural Model and Path Analysis

The structural model was evaluated using Structural Equation Modeling (SEM) to examine the hypothesized relationships among the latent variables. The results of the model fit indices are presented in Table 6.

As shown, all fit indices met the recommended thresholds. Specifically, the Chi-square/df ratio was 2.345, below the acceptable limit of 3.0. Other indices also indicated good model fit: RMSEA = 0.058, CFI = 0.921, TLI = 0.907, and SRMR = 0.045. These values confirm that the proposed structural model adequately fits the data.

Table 6.
SEM Model Fit Indices

Index	Value	Acceptable Threshold
Chi-square/df	2.345	< 3.0
RMSEA	0.058	< 0.08
CFI	0.921	> 0.90
TLI	0.907	> 0.90
SRMR	0.045	< 0.08

The results of the path analysis are shown in Table 7. All hypothesized direct relationships (H1–H6), except for managerial support (H4), were found to be statistically significant at the 1% level. Internal auditor competence ($\beta = 0.42$), internal auditor independence ($\beta = 0.31$), IT usage ($\beta = 0.37$), and the relationship between internal and external audits ($\beta = 0.29$) all had positive and significant effects on internal audit effectiveness (IAE). The impact of managerial support on IAE was positive but not statistically significant ($\beta = 0.12$, $p > 0.05$). Furthermore, internal audit effectiveness had a strong and significant impact on fraud prevention ($\beta = 0.48$, $p < 0.01$).

These results provide empirical support for five out of the six direct hypotheses in the model, confirming the central role of internal audit effectiveness in improving organizational fraud prevention.

Table 7.
Path Analysis Results

Relationship Between Variables	Path Coefficient (β)	p-value
Internal Auditor Competence -> Internal Audit Effectiveness	0.42	< 0.01
Internal Auditor Independence -> Internal Audit Effectiveness	0.31	< 0.01
IT -> Internal Audit Effectiveness	0.37	< 0.01
Management Support -> Internal Audit Effectiveness	0.12	> 0.05
The Relationship Between Internal Audit and External Audit -> Internal Audit Effectiveness	0.29	< 0.01
Internal Audit Effectiveness -> Fraud Prevention	0.48	< 0.01

5.7. Mediation Analysis

Mediation analysis was conducted to evaluate the indirect effects of five organizational factors—internal auditor competence (IAC), internal auditor independence (IAI), information technology (IT), managerial support (MS), and the relationship between internal and external audits (IAEA)—on fraud prevention (FP) through the mediating variable Internal Audit Effectiveness (IAE).

The results, presented in Table 8, indicate that all five independent variables had significant indirect effects on fraud prevention through IAE. The bootstrapping method with 5,000 resamples confirmed these effects, with confidence intervals not containing zero, thus supporting the mediation hypothesis.

Internal auditor competence (IAC) had an indirect effect on FP through IAE ($\beta = 0.20$). Internal auditor independence (IAI) showed an indirect effect on FP ($\beta = 0.15$). Information technology (IT) had a significant indirect effect on FP ($\beta = 0.18$). Managerial support (MS), although showing no direct

effect in the model, still exhibited a significant indirect effect on FP (β = 0.07). Internal-external audit relationship (IAEA) exhibited an indirect effect on FP (β = 0.14).

These findings suggest that IAE fully mediates the relationship between the organizational factors and fraud prevention, confirming the proposed mediation model.

Table 8.
Indirect and Total Effects through the Mediating Variable

Latent Variable	Indirect Effect through Internal Audit Effectiveness	Total Effect
Internal Auditor Competence	0.20	0.20
Internal Auditor Independence	0.15	0.15
IT	0.18	0.18
Management Support	0.07	0.07
The Relationship Between Internal Audit and External Audit	0.14	0.14

5.8. Hypothesis Testing Results

The results of hypothesis testing are summarized in Table 9, which presents the path coefficients (β) and their associated p-values. H1, H2, H3, H5, and H6 were supported, indicating that internal auditor competence, internal auditor independence, information technology, internal-external audit collaboration, and internal audit effectiveness significantly contribute to fraud prevention. These hypotheses demonstrate the critical role of internal audit effectiveness in mitigating fraud risk.

H7, H8, H9, and H11 were also supported, showing that the indirect effects of these factors on fraud prevention through internal audit effectiveness are significant.

However, H4 and H10 were rejected, meaning managerial support does not have a direct effect on internal audit effectiveness or fraud prevention. This suggests that while managerial support is important for overall organizational functioning, its direct influence on audit outcomes and fraud prevention may be limited.

The mediation analysis confirmed that IAE fully mediates the relationship between the independent variables and fraud prevention, as shown in Table 8.

Table 9.
Results of Hypothesis Testing

Hypothesis	Relationship Between Variables	Path Coefficient (β)	p-value	Conclusion
H1	Internal Auditor Competence -> Internal Audit Effectiveness	0.42	< 0.01	Accepted
H2	Internal Auditor Independence -> Internal Audit Effectiveness	0.31	< 0.01	Accepted
H3	IT -> Internal Audit Effectiveness	0.37	< 0.01	Accepted
H4	Management Support -> Internal Audit Effectiveness	0.12	> 0.05	Rejected
H5	The Relationship Between Internal Audit and External Audit -> Internal Audit Effectiveness	0.29	< 0.01	Accepted
H6	Internal Audit Effectiveness -> Fraud Prevention	0.48	< 0.01	Accepted
H7	Internal Auditor Competence -> Fraud Prevention (indirect)	0.20	N/A	Accepted
H8	Internal Auditor Independence -> Fraud Prevention (indirect)	0.15	N/A	Accepted
H9	IT -> Fraud Prevention (indirect)	0.18	N/A	Accepted
H10	Management Support -> Fraud Prevention (indirect)	0.07	N/A	Rejected
H11	The Relationship Between Internal Audit and External Audit -> Fraud Prevention (indirect)	0.14	N/A	Accepted

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6. Discussion

This study confirms the central role of internal audit effectiveness (IAE) in fraud prevention. Hypotheses H1, H2, H3, H5, and H6 were supported, indicating that internal auditor competence (IAC), independence (IAI), information technology (IT), and internal–external audit collaboration (IAEA) significantly enhances IAE, thereby reducing fraud risk. These results align with previous findings highlighting the impact of competence, independence, and collaboration on audit effectiveness [1, 2, 13].

In addition, H7, H8, H9, and H11 were validated, demonstrating that these organizational factors indirectly contribute to fraud prevention through IAE. This reinforces the mediating role of IAE in translating internal capabilities into tangible anti-fraud outcomes—a finding consistent with the study's theoretical framework.

However, H4 and H10 were not supported. Managerial support (MS) showed no significant direct or indirect effect on IAE or fraud prevention. This contrasts with earlier research suggesting that managerial backing is essential for audit success [9]. The current findings imply that while support remains important contextually, it may not directly influence audit performance in the Vietnamese setting. Empowerment of the audit function, rather than passive support, may be more critical.

Overall, the results underscore the value of enhancing audit competence, fostering collaboration with external auditors, and adopting IT to improve IAE and mitigate fraud. While managerial support plays a role in shaping organizational culture, its direct effect on audit outcomes may be more limited than previously thought.

7. Conclusion

This study highlights the critical role of internal audit effectiveness (IAE) in preventing fraud within organizations. The results demonstrate that internal auditor competence, internal auditor independence, information technology, and the relationship between internal and external audits significantly contribute to IAE, which, in turn, mitigates fraud risks. The study also confirms the mediating role of IAE in the relationship between organizational factors and fraud prevention, reinforcing the importance of strengthening internal audit functions for better fraud control.

However, the study found that managerial support does not directly influence IAE or fraud prevention, suggesting that while managerial support remains essential, its role in improving audit outcomes and fraud prevention may be less direct than previously assumed.

Limitations of this study include its cross-sectional design and focus on Vietnamese listed companies, which may limit the generalizability of the findings. Future research could explore the role of managerial support in different cultural and organizational contexts, as well as examine additional factors such as organizational culture and audit tools that may influence internal audit effectiveness.

Institutional Review Board Statement:

This research did not require formal approval from an Institutional Review Board, as it did not involve any sensitive personal data or vulnerable populations. However, all participants were fully informed about the purpose of the study and voluntarily agreed to participate. The study followed ethical research practices, including confidentiality and data protection.

Transparency:

The author confirms that the manuscript is an honest, accurate, and transparent account of the study; that no vital features of the study have been omitted; and that any discrepancies from the study as planned have been explained. This study followed all ethical practices during writing.

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