

Factors Affecting the Ability to Detect Accounting Fraud of Internal Auditors at Vietnamese Commercial Banks

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Abstract: This study was conducted to investigate the influence of factors on the ability to detect accounting fraud of internal auditors at Vietnamese commercial banks. Using quantitative research methods, based on a survey of 242 internal auditors at 34 Vietnamese commercial banks between December 2023 and February 2024. The regression results show that the factors in order of influence diminish, including: Internal auditor's capacity; Resources and technology; Communication and cooperation; Internal control system; Organizational culture; and Legal environment. Based on these findings, the study has made a number of recommendations to stakeholders to improve the ability of internal auditors in Vietnamese commercial banks to detect fraud. Thereby, helping commercial banks strengthen their internal control systems, improving the capacity of auditors and promoting a culture of ethical conduct to minimize the risk of accounting fraud.

Keywords: Accounting fraud, internal audits, detection capabilities, commercial banks.

1. Introduction

Accounting fraud poses a significant threat to the financial stability and reputation of commercial banks (Gerety & Lehn, 1997). Detecting and preventing fraudulent activities is essential to ensure transparency and investor confidence in the banking sector. Internal audit, as an independent and objective function in the bank, plays an important role in preventing and detecting accounting fraud by evaluating the internal control system, identifying potential risks and detecting warning signs (Pham, 2019).

In the context of Vietnam, where the banking sector has witnessed significant growth and transformation, the role of internal auditors in detecting fraudulent accounting practices becomes even more important (Huy & Hung, 2022). Internal auditors provide a systematic and disciplined approach to assess the adequacy and effectiveness of the control system, identify gaps and detect possible instances of accounting fraud (Huy et al., 2022). They help ensure compliance with regulations, ethical standards, and industry best practices, thereby protecting the interests of stakeholders and maintaining the trust of customers and investors in commercial banks.

However, over the years, Vietnam has witnessed many cases

of accounting fraud in the commercial banking sector. These circumstances have highlighted the need for an effective internal audit function to detect and prevent fraudulent activities. Cases of accounting fraud include financial statement manipulation, misappropriation of funds, insider trading, and loan fraud. Such frauds not only led to financial losses for the banks but also undermined the overall stability and credibility of the banking industry, which attracted the attention of academics and practitioners.

A number of studies investigating accounting fraud at Vietnamese commercial banks in recent years have shed light on the nature and extent of fraudulent activities. For example, a study by Nguyen et al. (2018) investigated the contributing factors to accounting fraud in the banking industry and identified weaknesses in the internal control system. Another study by Tran and Pham (2019) analyzed the impact of fraud on financial performance and investor confidence in commercial banks. These studies emphasize the importance of internal audits in detecting fraud and provide insights into the specific challenges facing the Vietnamese banking landscape. Although the aforementioned studies have addressed various aspects of accounting fraud behavior in commercial banks, there is still a research gap that needs to be addressed. The current literature lacks a comprehensive understanding of the specific capabilities and effectiveness of internal auditing in detecting accounting fraud in the Vietnamese banking industry. Although some studies have mentioned the role of internal auditing, there is still a need for a more focused investigation into the factors and measurement of the influence of each factor on the ability to detect accounting fraud in Vietnamese commercial banks. Therefore, the implementation of this study will contribute to improving the effectiveness of the internal audit function and strengthening the overall fraud detection framework at Vietnamese commercial banks.

2. Theoretical Basis and Literature Review

A. Theoretical Basis

1) Accounting fraud

Accounting fraud is a serious problem that has attracted

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considerable interest from researchers worldwide. Studies conducted in various countries have explored the definition of accounting fraud, in order to provide a clear understanding of its nature and characteristics.

Accounting fraud has been extensively studied due to its impact on financial markets and investor confidence. In the United States, researchers have examined the definition of accounting fraud in the context of regulatory frameworks, such as the Securities Exchange Act of 1934 and the Sarbanes-Oxley Act of 2002. These studies focus on deliberate misrepresentation of financial information, manipulation of financial statements, and material misstatement that misleads stakeholders.

In addition, studies on accounting fraud have been conducted in various countries, exploring the definition within the framework of European Union regulations and national laws. The researchers examined the concept of accounting fraud in relation to financial reporting standards, such as International Financial Reporting Standards (IFRS) and Generally Accepted Accounting Principles (GAAP). These studies highlight the deliberate nature of fraudulent activities, including willful manipulation of financial records, misrepresentation of assets and liabilities, and fraudulent reporting to deceive investors and creditors.

In Asia, accounting fraud is a topic of concern due to its impact on economic stability and corporate governance. Studies conducted in countries such as China, Japan, and India have focused on the identification of accounting fraud in the context of cultural norms, legal frameworks, and corporate governance practices. These studies highlight the role of fraud in financial reporting, income management, and the use of related party transactions to manipulate financial statements for self-interest purposes.

In Latin America, the study of accounting fraud has examined its definition in the context of the regional economic and legal environment. Studies conducted in countries such as Brazil, Mexico, and Argentina have explored the impact of accounting fraud on the financial system, investor confidence, and corporate sustainability. These studies emphasize the deliberate misrepresentation of financial information, the commission of fraudulent reports, and the use of complex transactions to manipulate financial statements.

As can be seen, studies conducted worldwide have contributed significantly to the identification of accounting fraud. They have highlighted its deliberate nature, which involves deliberate misrepresentation, manipulation of financial records, and its detrimental effects on stakeholders, financial markets, and economic stability. Understanding the definition of accounting fraud is critical to developing effective prevention measures, legal frameworks, and detection mechanisms that minimize the occurrence of fraud and protect the interests of stakeholders.

In the context of commercial banks, accounting fraud is understood as deliberate and deceptive activities aimed at manipulating financial records and misrepresenting the financial position or actual performance of the bank. It involves actions intended to mislead stakeholders, such as investors,

regulators, and customers, by providing false or misleading financial information.

Accounting fraud in commercial banks can take many different forms, including: knowingly misrepresenting or manipulating financial statements to inflate profits, declare losses, or conceal liability. It may include recording bogus earnings, overestimating assets, or underestimating expenses to create false information about a bank's financial position. In addition, fraudulent activity involves loans and credit facilities provided by the bank. It may involve creating sham loans, granting loans to related parties without proper documentation or collateral, or providing false information about a borrower's creditworthiness. In addition, internal frauds occur when employees or individuals in a bank abuse their position or access to commit fraud. This may include embezzlement, misappropriation of funds, or unauthorized transactions for personal gain. Furthermore, commercial banks are required to assess and report various risk measures, such as credit risk, liquidity risk, and market risk. Accounting fraud in this context may involve manipulating risk models, misclassifying assets or liabilities, or providing false information to conceal the bank's true risks. Finally, commercial banks are also subject to regulatory reporting requirements by the State Bank and the authorities and accounting fraud may involve willful misrepresentation or omission of information in legal records. This may include failing to disclose certain risks or failing to comply with regulatory requirements.

Understanding accounting fraud in commercial banks is important because it helps identify specific areas and activities that are vulnerable to fraud. It enables the development of robust internal controls, risk management frameworks and detection mechanisms to prevent and detect accounting fraud in the banking industry. Regulators, auditors and internal audit departments play an important role in identifying and resolving accounting fraud in commercial banks in order to protect the integrity of the financial system and maintain the trust of stakeholders.

2) *Ability to detect accounting fraud by internal auditors*

The ability of internal auditors to detect accounting fraud is an important aspect of their role in protecting the integrity of financial statements in organizations.

According to Mui (2018), the ability of internal auditors to detect accounting fraud refers to the capacity and skills of internal auditors in identifying and detecting fraudulent activities in the organization's financial reporting process. It includes the ability to evaluate the effectiveness of internal controls, conduct a thorough audit of financial records, and detect warning signs or possible signs of accounting fraud.

Meanwhile, Fullerton & Durtschi (2004) argue that the ability of internal auditors to detect accounting fraud is the internal auditor's proficiency in recognizing irregularities or deviations from established accounting principles and standards that may indicate fraudulent activities. It involves their expertise in performing risk assessments, financial analysis, and using investigative techniques to identify and investigate instances of accounting fraud.

In addition, Zeng *et al.* (2021) show that the ability of internal

auditors to detect accounting fraud refers to the effectiveness of internal auditors in identifying and preventing fraudulent activities related to financial reporting in an organization. It includes their knowledge of fraud risk, their understanding of the control system and their ability to assess the reliability and accuracy of financial reporting, which contributes to maintaining the truthfulness and transparency of financial reporting.

Thus, it can be seen that the ability of internal auditors to detect accounting fraud is related to their competence, skills and resources in identifying and detecting fraudulent activities related to financial reporting in the bank. It includes the internal auditor's ability to evaluate the effectiveness of internal controls, identify potential risks, and detect warnings or signs of accounting fraud.

B. Factors Affecting the Internal Auditor's Ability to Detect Accounting Fraud

Organizational culture:

The culture in the bank significantly impacts the effectiveness of internal audits in detecting fraudulent accounting practices. A culture that promotes ethical behavior, transparency, and accountability tends to support the internal audit function. On the other hand, a culture that tolerates unethical practices or discourages the reporting of suspicious activities can hinder the effectiveness of internal audits in detecting accounting fraud.

Several studies have highlighted the role of an ethical culture in promoting integrity, transparency, and accountability, thereby creating an environment conducive to the detection of fraudulent acts. Smith et al. (2017), Hung (2023) found that organizations with a strong ethical culture had higher fraud detection rates, while Jones et al. (2018) highlighted the positive relationship between ethical culture and the effectiveness of internal audits in detecting fraud, especially in financial institutions. Brown et al. (2019) suggest that ethical banks and financial institutions have a lower rate of fraud. Lee et al. (2020) concluded that a strong ethical culture increases whistleblowing intent, which is important in detecting accounting fraud. Moreover, Chen et al. (2021) found a positive correlation between ethical culture and the effectiveness of the internal control system in commercial banks in Germany in preventing and detecting fraudulent acts. These studies emphasize the importance of promoting an ethical culture that values ethical behavior, transparency, accountability, and emphasizes internal controls for effective fraud detection. From the above analysis, the first hypothesis is given as follows:

H1: Organizational culture is positively correlated with the ability to detect accounting fraud of internal auditors in commercial banks.

Internal Control Systems:

The strength and effectiveness of the internal control system directly affects the ability of the internal audit department to detect accounting fraud. Effective internal controls, including proper division of duties, approval and authorization processes, and regular monitoring and evaluation mechanisms, provide a strong foundation for internal auditors to identify fraudulent

accounting activities. In contrast, weak or inadequate internal control systems increase the likelihood of undetected accounting fraud.

Many studies have shown the important role of internal control systems in reducing the risk of accounting fraud in different organizations. Johnson et al. (2016) found that organizations with well-designed internal control systems, including division of tasks, regular monitoring and control activities, have higher fraud detection rates. In addition, Brown et al. (2017) emphasized the effectiveness of the COSO framework in improving the ability of internal auditors to detect accounting fraud by establishing effective internal control systems in commercial banks in the United Kingdom. In addition, Garcia et al. (2020) reviewed the impact of internal control systems on fraud detection in the public sector and highlighted the correlation between well-established internal control systems and higher fraud detection rates. The above studies emphasize the importance of effective internal control systems in minimizing the risk of accounting fraud. They emphasized the value of implementing established frameworks such as COSO to enhance the ability of internal auditors to detect accounting fraud. These findings provide valuable insights into the importance of internal control systems in various sectors and organizations in effectively preventing and detecting accounting fraud. On the basis of the above analysis, the author believes that:

H2: Internal control systems are positively correlated with the ability to detect accounting fraud of internal auditors in commercial banks.

Competencies of internal auditors:

The capacity and skills of internal auditors play an important role in the ability to detect accounting fraud. Internal auditors need to have a deep understanding of accounting principles, financial reporting standards, and fraud detection techniques. In addition, they must have proficient analytical skills, critical thinking ability, and the ability to identify warning signs or anomalies in transactions or financial records.

Many studies have been conducted to examine the important role of internal auditor competence and skills in detecting accounting fraud effectively. Smithson et al. (2016) found that, when internal auditors are equipped with extensive knowledge of accounting principles and financial reporting standards, there is a higher success rate in identifying accounting fraud activities in commercial banks in Poland. While Thompson et al. (2018) specifically looked at the impact of qualifications on the ability of internal auditors to detect fraud in financial institutions in the West African region, the results show that auditors with certifications such as CIA or CFE have shown a higher level of detection of fraud. Mitchell et al. (2019) focused on auditors' knowledge of fraud detection techniques and emphasized the importance of a deep understanding of investigative accounting techniques, data analysis, and fraud identification to improve efficiency in identifying accounting fraud at 26 commercial banks in France. Moreover, Rodriguez et al. (2020) explored the role of accounting training in enhancing internal auditors' fraud detection skills. They found that well-educated internal auditors with formal accounting education, including courses

on fraud testing, demonstrated greater proficiency in identifying accounting fraud activities. From the above analysis, the third hypothesis is given as follows:

H3: The capacity of internal auditors is positively correlated with the ability to detect accounting fraud of internal auditors in commercial banks.

Communication and Collaboration:

Effective communication and cooperation between internal audit departments and other departments within the bank is critical to detecting accounting fraud. Most studies highlight the importance of internal auditors having an open channel of communication with management, employees, and other stakeholders to gather information, investigate suspicions, and identify potential fraud risks. In addition, collaborating with other departments such as risk, compliance, and legal management teams can significantly enhance the detection and prevention of accounting fraud.

A study conducted by Johnson et al. (2016) examined the role of communication in detecting fraud in the banking industry in Switzerland. The findings suggest that internal auditors who have open and effective communication channels with management, employees, and other stakeholders will be more successful in detecting accounting fraud. The study highlights the importance of promoting a culture of open communication within banks to enable timely reporting and investigation of possible fraudulent activities. In a comparative study, Anderson et al. (2017) focused on the coordination between the internal audit department and the risk management department at Brazilian commercial banks in detecting accounting fraud. Research shows that, when internal auditors and risk management teams work closely together, they are better able to identify and address fraud risks. It emphasizes the importance of sharing information, expertise, and resources among these departments to enhance efforts to detect accounting fraud. In addition, Thompson et al. (2018) explored the role of the legal department in detecting accounting fraud in Indonesian commercial banks. Research shows that, when internal auditors actively and effectively collaborate with the legal department, they can identify and address fraud risks more effectively. It emphasizes the importance of aligning internal audit efforts with compliance and legal requirements to enhance fraud detection and prevention. On the basis of the above analysis, the author believes that:

H4: Communication and cooperation are positively correlated with the ability to detect accounting fraud of internal auditors in commercial banks.

Resources and Technology:

The effective detection of accounting fraud by the internal audit department depends on the adequate allocation of resources, including budget, personnel, and technology. Several studies conducted in several countries emphasize the importance of providing adequate funding, allowing internal auditors to access essential, comprehensively trained tools, and deploying the necessary resources to achieve optimal operational efficiency. Furthermore, the integration of advanced technologies, such as data analytics, artificial intelligence, and fraud detection software, has significant

potential in enhancing the internal auditor's ability to identify complex patterns, unusual transactions, and potential signs of fraudulent activity.

In a study by Tutino et al. (2016) the impact of resources, including budgets and personnel on the ability of the internal audit department to detect accounting fraud was examined. The study revealed that well-funded departments with ample staff had a higher success rate in detecting accounting fraud activities at Mexican commercial banks. Therefore, it emphasizes the urgency of allocating adequate resources to internal audit functions, as this supports the consolidation of fraud detection capabilities. In addition to the results of the above study, Merlo et al. (2020) delved into the role of technology in detecting accounting fraud in 68 Japanese commercial banks. Research shows that internal auditors have made good use of advanced technological tools, such as data analysis and fraud detection software, which have demonstrated enhanced efficiency in identifying potential signs of accounting fraud. The study highlights the inevitability of integrating complex technologies in the internal audit process to underpin efforts to detect and prevent accounting fraud.

In addition, Ramos Montesdeoca et al. (2018) conducted an investigation into the relationship between budget allocation and fraud detection efficiency in internal audit departments of credit financial institutions in Namibia. Their findings suggest that departments with higher budgets have demonstrated superior ability to detect accounting fraud. This study emphasizes the importance of allocating adequate financial resources, facilitating comprehensive training, application of technology and staff qualifications, ultimately leading to improved results in fraud detection. Furthermore, Sanchez Medina Mitchell et al. (2019) explored the correlation between personnel qualifications and the effectiveness of internal auditors in detecting accounting fraud. The results of the study suggest that internal audit departments with good staff have shown high efficiency in identifying accounting fraud activities. This particular study highlights the need to maintain a sufficient number of highly skilled auditors who are capable of conducting thorough investigations and implementing robust fraud prevention measures.

As can be seen, the studies have provided a compelling argument for the importance of allocating sufficient resources, including budgets, personnel, and technology, to internal audit departments to effectively detect accounting fraud. Thereby, the fifth hypothesis is given as follows:

H5: Internal auditors' resources and technology are positively correlated with the ability to detect accounting fraud of internal auditors in commercial banks.

Legal environment:

The regulatory environment plays a key role in shaping the internal audit department's capacity to detect accounting fraud in the banking industry. Numerous studies have been conducted that have examined the impact of regulatory frameworks and surveillance on the effectiveness of the internal audit function in detecting fraud. These studies emphasize the importance of rigorous management standards, regular audits, and rigorous reporting requirements in creating a robust control environment

that enhances detection and prevents accounting fraud. Conversely, a weak regulatory environment can undermine the effectiveness of the internal audit function in detecting and addressing fraudulent activities.

The study conducted by Lee et al. (2021) looked at the regulatory environment in the banking industry and its impact on fraud detection in 18 countries in Asia. Research shows that countries with strict and well-established regulatory frameworks have significantly higher fraud detection and prevention rates. This relationship may be due to the regulator's ability to impose strict guidelines, conduct regular audits, and enforce reporting requirements to promote a culture of compliance and prevent fraudulent activities. In another study by Chen and Lin (2018), the authors explored the role of regulatory oversight in detecting and mitigating fraud in financial institutions in China. The study highlights that effective regulatory oversight, including close monitoring, enforcement, and application of sanctions, has significantly enhanced the ability of the internal audit department to detect accounting fraud. The study highlights the importance of regulators in setting clear expectations and fostering an environment of tight control in financial institutions. Furthermore, research conducted by Free & Scard (2019) investigated the impact of a weak regulatory environment on fraud detection in internal audit departments. The study found that, in countries with inadequate regulatory standards, limited audit activity, and lax reporting requirements, the internal audit department faced significant challenges in detecting accounting fraud. The lack of a strict legal framework has created a favorable environment for fraudulent activities, hindering the effectiveness of the internal audit function. On the basis of the above analysis, the author believes that:

H6: The legal environment is positively correlated with the ability to detect accounting fraud of internal auditors in commercial banks

3. Research Method

A. Research Models and Hypotheses

Based on the theoretical basis and the above analysis, the theoretical model is proposed as follows:

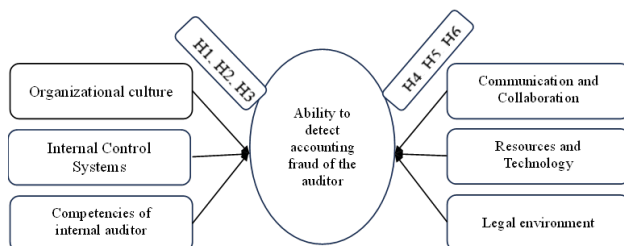


Fig. 1. Research model on the ability to detect accounting fraud of auditor
(Source: Proposed Author)

With the multiple regression model as follows:

$$KNPH = \beta_0 + \beta_1 * VHTC + \beta_2 * KSNB + \beta_3 * NLKT + \beta_4 * GTHT + \beta_5 * NLCN + \beta_6 * MTPL + \epsilon$$

In which:

β_1, β_2, \dots is the regression coefficient, β_0 is the intercept coefficient, ϵ is the residual

Dependent variable:

Internal Audit: Ability to detect accounting fraud of internal auditor

Independent variables:

Organizational culture (VHTC); Internal control system (IC); Competencies of internal auditors (NLKT); Communication and cooperation (GTHT); Resources and technology (NLCN); Legal environment (MTPL).

B. Data Collection and Processing

The author collects data through the use of questionnaires to collect the opinions of internal auditors on the impact of factors on the ability to detect accounting fraud in Vietnamese commercial banks.

The questionnaire is checked and adjusted by sending to 02 experts (one is CPA, senior lecturer of the Institute of Accounting and Auditing, National Economics University; the other is the director of BIDV branch) to assess the relevance of the research objectives. To assess the ability to detect accounting fraud (dependent variable), the author uses a 5-level Likert scale of agreement, from: (1) Strongly disagree to (5) Strongly agree. Evaluating independent variable factors, the author uses the Likert scale of 5 levels of influence, from: (1). Very low to (5). Very high. The number of scales measuring variables is summarized in Appendix 1.

In addition, to ensure the study sample size, based on the minimum sample size requirement for EFA analysis and regression. According to Bollen (1989), the sample size is calculated according to the formula $n = 5 * i$ (i is the number of observed variables in the model), corresponding to this study, the sample size will be 30 variables * 5 = 150. According to Tabachnick & Fidell (2007), the sample size in the multiple linear regression analysis is calculated according to the formula $n = 50 + 8q$ (q is the number of independent variables in the model), whereby the sample size of the study will be $50 + 8 * 6 = 98$. In order to improve the reliability of the survey information, the study selects the largest sampling for the model according to one of the above principles.

The author uses a convenient sampling method and 242 valid votes are obtained out of a total of 458 votes sent through the direct distribution of the questionnaire, sending and receiving the questionnaire via Google form tool and Email to the internal auditors of 34 Vietnamese commercial banks. Implementation time: From December 2014 to March 2016 Based on the collected data, the author uses quantitative techniques such as testing the reliability of the scale, exploratory factor analysis with the use of SPSS.22 software to summarize and present the basic results of the study.

4. Results and Discussion

Of the 242 valid answer sheets of internal auditors, in terms of educational qualifications, 184 people have university degrees, accounting for 76.03%; the remaining 58 people have postgraduate degrees, accounting for 23.97%. Particularly, of

the 242 internal auditors who responded to the survey, 34 had a notarized internal auditor's certificate (CIA), issued by The Institute of Internal Auditors (IIA). In addition, all internal auditors have experience as internal auditors for 3 years or more.

The surveyed sample belongs to many different subjects in terms of education and employment experience. As such, it is possible to ensure the answers are reliable and quality.

The statistical results describing the scale show that most of the observed variables have a mean value around the expected average value (3.0) and there is no significant difference between the observed variables in the same group. This proves that the survey subjects have quite similar opinions and agree with the scale of variables.

A. Quality Control Results of the Scale

The results of the first Cronbach's Alpha test show that: independent variables *Culture and organization; Competencies of internal auditors; Resources and technology; Legal environment* and dependent variables. *The ability to detect accounting fraud of internal auditors* is measured by 21 observed variables. The reliability analysis results of the scale all have Cronbach's alpha coefficient greater than 0.6. At the same time, the observed variables have a total variable correlation of > 0.3 and Cronbach's alpha coefficient if the type of variables of the observed variables is less than Cronbach's alpha. Therefore, the independent and dependent variables above meet the reliability. Separate independent variables *Internal control system; Communication and cooperation with* observed variables KSNB2 and GTHT3 have total variable correlation coefficients of 0.217 and 0.209 respectively (less than 0.3). Therefore, it is likely that these observed variables will generate false factors when analyzing EFA. Therefore, the author types the KSNB2 variable and the HTGT3 observation variable and conducts the second scale test.

After running Cronbach's Alpha for the second time. It can be seen that the results of testing the scales of factors affecting the ability to detect accounting fraud of internal auditors in Vietnamese commercial banks with 28 observed variables, as shown in Table 1.

Thus, the model retains the same 6 factors to ensure good quality, with 28 variables characteristic of Cronbach's Alpha coefficient of the overall is greater than 0.6; Variable correlation coefficient - the sum of the observed variables is greater than 0.3.

B. Explore Factor Analysis EFA

The EFA exploratory factor analysis was performed separately for 02 groups of independent and dependent

variables by the original angle rotation method (Varimax).

EFA analysis results for the first independent variable:

After assessing the reliability of the scale, 25 observed variables were included in the first exploratory factor analysis, the results were as follows:

KMO coefficient = .804 and the Barlett test has Sig.= .000 < .05 shows that EFA analysis is appropriate. At Eigenvalue = 1.412 extracted 6 factors, (no new factors formed) and the variance extracted was 65.337%. Thus, the variance quoted is satisfactory. However, the observed variable MTPL4 has a factor load factor of less than 0.3. Therefore, this observed variable will be disqualified to continue performing the second EFA analysis with 24 observed variables.

EFA analysis results for the second independent variable:

The KMO value = 0.819 satisfies the condition $0.5 \leq \text{KMO} \leq 1$ so the EFA analysis is appropriate for the actual data. Test the correlation between the observed variables in the Sig scales. (Bartlett's Test) = 0.000 (Sig. < 0.05) showed that the observed variables were correlated with each other overall and that the data used for EFA analysis were appropriate.

Testing the level of interpretation of observed variables with factors: The final results of exploratory factor analysis are only 6 groups with a total number of observed variables of 24 variables with the following results: Percentage of variance (Percentage of variance) = 67.216% > 50% which means that the 6 factors extracted in EFA reflect 67.216% of the variation of the data. Eigenvalue = 1.468 is greater than 1, so all factors are retained in the analysis model. This data gives 6 factors and these 6 factors represent the characteristics of the data best compared to adding the rest.

The factor matrix table after rotation, the results are divided into 6 groups, the groups are separated into separate columns and the observed variables of the same nature converge on the same factor.

Results of EFA analysis for dependent variable:

Indicators show the coefficient:

The KMO coefficient = 0.766 satisfies the condition $0.5 < \text{KMO} < 1$, so exploratory factor analysis is appropriate for actual data. quantity Satisfy the condition ≤ 0.05 should be statistically significant and the observed variables are correlated with each other in the whole, proving that the data used in the analysis is appropriate.

Analysis of the total variance extracted for the dependent variable shows that the percentage value of the entire variance Percentage of variance = 72.216% > 50%, the Eigenvalue = 2.035 > 1, so the model is eligible for exploratory factor analysis and the load factor of the observed variables is greater than 0.5, so the observed variables are of practical significance.

Table 1
Reliability test results of the scale of factors in the model

No.	Factor	Cronbach's Alpha	N
1	Organizational culture	0.841	4
2	Competencies of internal auditors	0.933	4
3	Internal Control Systems	0.897	4
4	Communication and Collaboration	0.710	3
5	Resources and Technology	0.856	4
6	Legal environment	0.765	4
7	Ability to detect accounting fraud of internal auditors in Vietnamese commercial banks	0.868	5

(Source: Results from SPSS 22)

So the dependent variable is between the original independent variable and there are 5 observed variables.

C. Results of model analysis

Pearson Correlation Analysis:

Correlation analysis is performed before the regression analysis to check the correlation between the independent variable and the dependent variable, when the independent variables are not correlated with the dependent variable will be excluded from the model (if Sig. > 0.05).

The results of Pearson correlation analysis show that there is a strong correlation between the dependent variable and the independent variable in the model. The independent variables in the matrix have an average correlation coefficient and have a Sig value. < 0.05, which suggests that independent variables are more likely to account for each other, with the possibility of multicollinearity. This will be tested more accurately with the Durbin-Watson coefficient and VIF.

Regression analysis:

Based on the results of EFA analysis, we have an unchanged multiple regression model, independent and dependent variables remain the same as at the beginning. The table 2, 3, and 4 show the regression results, specifically.

Test the relevance of the model:

Testing of multicollinearity: The variance magnification factor (VIF) of all independent variables is less than 10, so multicollinearity in the model is assessed as not serious.

The Durbin-Watson coefficient used to test the correlation of the residues shows that the model does not violate when using the multiple regression method, because the Durbin-Watson value is 1.818 (in the range of 1 to 3). In other words, the model has no correlation of residues.

The assessment of the relevance of the model is based on the

Analysis of Variance (ANOVA). ANOVA test results with Sig significance level. = 0.000 shows that the constructed multiple linear regression model is suitable for the dataset and usable, in other words, the model is meaningful to extrapolate to the whole.

Evaluate the level of interpretation by independent variables in the model:

The correction coefficient $R^2 = 0.612 > 0.5$ means that independent variables explain 62.12% of the change in the dependent variable "The ability to detect accounting fraud of internal auditors in Vietnamese commercial banks", while 37.88% is due to random errors or factors other than the model.

Independent variables VHTC, NLKT, KSNB, GTHT, NLCN, MTPL all have statistically significant impacts (due to Sig.<0.05) to the ability to detect accounting fraud by internal auditors in Vietnamese commercial banks.

Independent variables VHTC, NLKT, KSNB, GTHT, NLCN, MTPL with coefficients $\beta > 0$ prove to have a positive effect on the dependent variable *The ability to detect accounting fraud of internal auditors in Vietnamese commercial banks*. Therefore, accepting the initial hypothesis (H1, H2, H3, H4, H5, H6) are independent variables that are linearly related to the dependent variable and fully consistent with the model. From there, we have the regression equation with the standardized beta coefficient as follows:

$$\text{KNPH} = 0.096 \cdot \text{VHTC} + 0.140 \cdot \text{KSNB} + 0.224 \cdot \text{NLKT} + 0.184 \cdot \text{GTHT} + 0.216 \cdot \text{NLCN} + 0.83 \cdot \text{MTPL}$$

From the test results of the research model, there are 6 factors that affect "The ability to detect accounting fraud of internal auditors in Vietnamese commercial banks". This result is also similar to the results tested by previous studies, namely:

Table 2
Model summary^b

Model	R	R Square	Adjusted R Square	Durbin-Watson
1	.775 ^a	.668	.612	1.818

a. Predictors: (Constant), VHTC, NLKT, KSNB, GTHT, NLCN, MTPL

b. Dependent Variable: KNPH

(Source: Results of data analysis, 2022)

Table 3
Model ANOVA^a analysis

Model	Sum of Squares	df	Mean Square	F	Sig.
Regression	58.688	6	9.781	47.585	0,000 ^b
Residual	42.458	189	0.224		
Total	101.146	195			

a. Dependent Variable: KNPH

b. Predictors: (Constant), VHTC, NLKT, KSNB, GTHT, NLCN, MTPL

(Source: Results of data analysis, 2022)

Table 5
Linear regression results
Coefficients^a

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Collinearity Statistics	
	B	Std. Error	Beta			Tolerance	VIF
Constant	1.056	.334		3.251	.001		
NLCN	.287	.078	.216	3.645	.000	.577	1.733
KSNB	.140	.071	.140	2.020	.016	.638	1.567
VHTC	.071	.050	.096	1.221	.025	.803	1.245
GTHT	.175	.054	.184	3.334	.002	.751	1.331
NLKT	.233	.055	.224	2.376	.000	.887	1.127
MTPL	.079	.036	0.83	1.256	.008	.456	2.193

a. Dependent Variable: KNPH

(Source: Results of data analysis, 2022)

Organizational culture such as Smith et al. (2017), Jones et al. (2018), Brown et al. (2019); Internal control system such as Johnson et al. (2016), Garcia et al. (2020); Competencies of internal auditors such as Smithson et al. (2016), Mitchell et al. (2019), Rodriguez et al. (2020); Communication and cooperation such as Anderson et al. (2017), Thompson et al. (2018); Resources and technology such as Tutino et al. (2016), Merlo et al. (2020), Ramos Montesdeoca et al. (2018); and Legal environment such as Lee et al. (2021), Chen and Lin (2018), Free & Scard (2019).

5. Conclusion and Recommendation

Through the analysis of 242 surveys from internal auditors of 34 Vietnamese commercial banks. Regression results show that the factors that affect the ability to detect accounting fraud of internal auditors in Vietnamese commercial banks in descending order are: Capacity of internal auditors; Resources and technology; Communication and cooperation; Internal control system; Organizational culture; and Legal environment.

The findings from the empirical study are the basis for the author to make some recommendations to stakeholders, specifically as follows:

The *competence of internal auditors is the* factor that has the greatest impact on the ability to detect accounting fraud of internal auditors in the research model. Therefore, in order to increase the detection of accounting fraud by internal auditors in Vietnamese commercial banks, internal auditors should participate in continuous professional development programs to improve knowledge, skills and competencies related to the detection of accounting fraud. This may include attending relevant seminars, training workshops, and obtaining a certificate in fraud testing or investigative accounting. Banks should invest in specialized training programs that focus on fraud detection techniques, methods, and emerging trends in accounting fraud. This training can equip internal auditors with the tools and techniques needed to identify fraud alerts, analyze complex transactions, and recognize patterns that indicate fraudulent activity. At the same time, encouraging internal auditors to share their knowledge, experience, and best practices with their peers can greatly enhance their ability to detect accounting fraud. Establishing internal platforms, such as regular team meetings, discussion forums, or knowledge-sharing sessions, can foster collaboration and allow auditors to learn from each other.

Based on the regression results, the *Resource and Technology* factor was identified as having the second largest influence on the ability of internal auditors to detect accounting fraud at Vietnamese commercial banks. To enhance this capability, commercial banks should allocate sufficient budget resources to their internal audit departments. This includes providing funding for training programs, technology investments, and procurement of advanced fraud detection tools and software. In addition, the bank should invest in advanced technology tools and systems that can assist internal auditors in detecting accounting fraud. This may include implementing data analytics software, fraud detection algorithms, and automated monitoring systems. These technologies can help

auditors analyze large volumes of data, identify patterns, and detect potential fraudulent activities. In addition, the bank needs to ensure the integration and quality of data across different systems and departments. This facilitates a more comprehensive analysis of financial transactions and helps the auditor identify anomalies and potential signs of fraud. Moreover, close cooperation between the internal audit department and the information technology department is very important. Internal auditors should work closely with IT professionals to understand technology infrastructure, data management processes, and potential bank vulnerabilities. This partnership helps the auditor identify areas where technology can be leveraged to detect fraud and ensure that IT systems are designed with appropriate controls in place to mitigate fraud risks.

The *Communication and Collaboration* factor is the third most influential factor in the ability of internal auditors to detect accounting fraud in the research model. Therefore, in order to increase the detection of accounting fraud by internal auditors in Vietnamese commercial banks, the bank should establish clear and effective communication channels between internal auditors and other parts of the organization. This includes regular meetings, reporting mechanisms, and open lines of communication to share information, concerns, and observations related to potential accounting fraud. By fostering a culture of open communication, auditors can gather valuable insights and collaborate with other departments to detect and prevent fraudulent activities. Banks should encourage collaboration and collaboration between the internal audit department and other relevant departments, such as risk management, compliance, and legal. This can be achieved through cross-functional teams, joint training sessions, and information sharing platforms. Collaboration between these departments helps auditors gain a comprehensive understanding of the bank's operations, identify potential fraud risks, and leverage the expertise of other professionals to enhance their fraud detection capabilities.

Based on the regression results, the *Internal Control System* factor was identified as the fourth largest influence factor on the ability of internal auditors to detect accounting fraud at Vietnamese commercial banks. To enhance this capability, banks should regularly review and strengthen their internal control framework to minimize the risk of accounting fraud. This includes conducting a comprehensive risk assessment, identifying control weaknesses, and implementing appropriate controls to address identified risks. Internal auditors should be actively involved in the design, implementation and evaluation of these controls to ensure their effectiveness in detecting and preventing fraud. In addition, banks should establish and enforce a clear division of duties in their operational processes. This involves segregating key functions such as authorization, recording, and custody of assets to prevent collusion and reduce the risk of undetected fraudulent activities. Internal auditors should evaluate the adequacy and effectiveness of the division of control tasks and make recommendations for improvement if necessary. Furthermore, the bank should establish a robust system for continuous monitoring and inspection of internal

controls. This may involve conducting periodic internal control audits, performing ad hoc inspections, and conducting data analysis to identify anomalies and potential fraudulent activities. Internal auditors must have access to relevant data and tools to perform these tests effectively and must communicate any identified control weaknesses or anomalies to management for timely action.

Organizational culture is the fifth most influential factor in the ability of internal auditors to detect accounting fraud in the research model. Therefore, in order to increase the detection of accounting fraud by internal auditors in Vietnamese commercial banks, the following suggestions can be made: Banks should cultivate ethics at the highest level, in which senior management and board members set a strong example of ethical behavior and integrity. This includes promoting a zero-tolerance policy against fraudulent activities and ensuring that ethical standards are clearly communicated and reinforced throughout the organization. By establishing a culture of ethics and integrity, internal auditors will feel supported in their efforts to detect and prevent accounting fraud. In addition, banks should provide regular training and awareness raising programs to employees, including internal auditors, on ethical conduct, fraud prevention, and the importance of reporting suspicious activities. These programs should emphasize the role of internal auditors in detecting and preventing fraud, and provide them with the knowledge and skills needed to identify potential fraudulent activities. Ongoing training and awareness programs reinforce the importance of ethical behavior and create a culture of vigilance against accounting fraud. At the same time, whistleblower protection mechanisms should be established to encourage employees, including internal auditors, to report suspected fraudulent activities without fear of retaliation. This includes implementing confidential reporting channels, ensuring anonymity, and providing legal protection for whistleblowers. By creating a safe and supportive environment for reporting, internal auditors will be more able to raise their concerns, thereby being able to detect and prevent accounting frauds in a timely manner.

The research results show that the *legal environment* factor was identified as the sixth most influential factor in the ability of internal auditors to detect accounting fraud at Vietnamese commercial banks. To enhance this capability, banks must ensure strict compliance with all relevant laws, regulations, and accounting standards. This includes keeping up to date with regulatory changes, establishing strong internal control mechanisms to address regulatory requirements, and conducting regular audits to assess compliance. Internal auditors need to have a thorough understanding of applicable laws and regulations in order to effectively detect and report any potential violations or fraudulent activities. Banks should promote collaboration and coordination among internal, legal and compliance audit departments. In addition, banks may consider hiring outside legal experts or consultants who specialize in fraud detection and legal compliance. These professionals can provide guidance on legal requirements, assist in conducting a legal risk assessment, and make recommendations aimed at enhancing the ability of internal

auditors to detect accounting fraud within a legal framework. External expertise can provide valuable insights and support to internal auditors in resolving complex legal issues related to fraud detection.

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Appendix 1

Attribute coding of factors affecting the ability to detect accounting fraud of internal auditors in Vietnamese commercial banks

No.	Factor	Measurement Scale	Source
Independent variable			
VHTC	VHTC1	My organization encourages ethical behavior among employees;	Smith et al. (2017), Jones et al. (2018), Brown et al. (2019); Setyaningsih (2020); Jizi et al. (2016).
	VHTC2	My organization has clear policies and ethical guidelines;	
	VHTC3	I am aware of the common types of fraud that can occur within our organisation;	
	VHTC4	I can identify potential signs of accounting fraud;	
NLKT	NLKT1	I have a good understanding of accounting principles and financial reporting requirements;	Johnson et al. (2016), Garcia et al. (2020); Iskandar et al. (2022); James (2003).
	NLKT2	I am familiar with current accounting standards in my industry;	
	NLKT3	I have the necessary skills to effectively use data analysis to detect accounting fraud;	
	NLKT4	I am proficient in analyzing financial transactions to identify potential fraud risks;	
KSNB	KSNB1	Management demonstrates a strong commitment to internal control;	Smithson et al. (2016), Mitchell et al. (2019), Rodriguez et al. (2020); Handoyo & Bayunitri (2021); Ghanim & Al Fatlawi (2018).
	KSNB2	Employees are encouraged to report potential fraudulent activities;	
	KSNB3	The Bank conducts regular and comprehensive fraud risk assessments;	
	KSNB4	The Bank has clearly defined control procedures;	
	KSNB5	The Bank regularly monitors and evaluates the effectiveness of control activities;	
GTHT	GTHT1	There is a culture of collaboration and cooperation between the internal audit department and other departments in addressing the risk of accounting fraud;	Anderson et al. (2017), Thompson et al. (2018); Fitriyah & Adrianto (2018); Endaya (2014).
	GTHT2	Internal auditors actively engage with risk, compliance and legal management teams to enhance detection of accounting fraud;	
	GTHT3	Internal auditors seek opinions from stakeholders to enhance their efforts to detect accounting fraud;	
	GTHT4	Internal auditors actively engage with management and employees to understand their views on the risk of accounting fraud;	
NLCN	NLCN1	The internal audit department has sufficient budgetary resources to support accounting fraud detection efforts;	Tutino et al. (2016), Merlo et al. (2020), Ramos Montesdeoca et al. (2018); Pagalung & Habbe (2017); Lotto (2014).
	NLCN2	The internal audit department has sufficient personnel with skilled experts;	
	NLCN3	The internal audit function effectively uses data analysis tools to identify potential indicators of fraud;	
	NLCN4	Internal auditors receive regular and appropriate training on methods for detecting accounting fraud;	
MTPL	MTPL1	The legal framework provides clear and comprehensive standards for internal control and fraud prevention;	Lee et al. (2021), Chen & Lin (2018), Free & Scard (2019); Coram et al. (2006); Sudirman et al. (2021).
	MTPL2	Regulatory requirements are updated regularly to address the risks of accounting fraud;	
	MTPL3	Regulators conduct regular and comprehensive checks to assess the effectiveness of internal controls within the bank;	
	MTPL4	Monitoring activities to effectively identify accounting fraud risks;	
Dependent variable			
KNPH	KNPH1	I am competent to evaluate the effectiveness of the internal control system in detecting and preventing accounting fraud;	Mui (2018); Fullerton & Durtschi (2004); Zeng et al. (2021).
	KNPH2	I am confident in my ability to identify areas of high fraud risk in the banking environment;	
	KNPH3	I actively update emerging trends and developments in accounting fraud to improve my ability to detect such activities;	
	KNPH4	I am able to communicate and collaborate effectively with stakeholders in addressing concerns about accounting fraud;	
	KNPH5	I am committed to maintaining the integrity and transparency of my financial statements by actively detecting and preventing accounting fraud;	