THE INFLUENCE OF THE INTERNAL CONTROL SYSTEM ON CRISIS MANAGEMENT SKILLS: EVIDENCE FROM VIETNAMESE COMMERCIAL BANKS IN HO CHI MINH CITY

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Abstract: ***This study provides the first empirical evidence in Vietnam linking Internal Control Systems (ICS) to behavioral crisis management. Analyzing data from 383 bank employees, the results demonstrate that a robust ICS, primarily driven by the Control Environment, significantly enhances resilience. These findings suggest that ICS functions as a strategic governance mechanism rather than a mere compliance tool.***

• Keywords: *internal control, crisis management skills, commercial banks, Ho Chi Minh City.*

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1. Introduction

Facing risks from global integration and Basel III compliance pressures, Ho Chi Minh City's banking sector requires robust Internal Control Systems (ICS) for operational safety. While international literature confirms ICS's role in crisis management, empirical evidence in Vietnam remains scarce. This study addresses this gap by examining the impact of ICS on the crisis management capabilities of commercial banks.

2. Literature review

2.1. The concept of crisis management

Crises are highly probable and invariably affect all organizations, impacting their sustainable development, reliability, and reputation. A crisis poses a significant threat to an organization's objectives. In responding to a crisis, an organization pursues several key goals. First, it must identify the cause of the crisis. Second, the organization must resolve the underlying cause and work to restore its reputation. Finally, it must mitigate the negative impacts of the crisis

Thus, a crisis represents a substantial threat to operations that can result in negative consequences if not managed appropriately. Effective crisis management helps maintain sustainability, enhance competitiveness, and minimize losses. The Internal Control System (ICS) plays a pivotal role in crisis response. Therefore, organizations must establish clear processes, define responsibilities, and adhere to governance principles to safeguard against risks. An effective ICS is considered to have a positive impact on the crisis management skills of institutions. It is crucial not only to establish these processes but also to ensure their effectiveness and protective capacity. Hence, organizations must maintain an effective ICS across all operational areas, particularly within crisis management. Effective Internal Control Systems (ICS) are posited to enhance organizational crisis management competencies. The significance lies not just in the implementation of these controls, but in guaranteeing their efficacy and resilience. Therefore, organizations must sustain an effective ICS throughout all operations, most notably in the context of crisis management.

2.2 Theories related to crisis management

Agency Theory

Agency theory addresses the relationship between principals (owners) and agents (managers) within an organization, as introduced by Mitnick (1992). The principal delegates operational authority to the agent to maximize their interests; however, this can lead to a conflict of goals. Consequently, when establishing control standards, internal control (IC) and auditing serve as crucial instruments. According to Jensen and Payne (2003), IC helps reduce agency costs by monitoring the agent's actions, ensuring transparent reporting, mitigating information asymmetry, and enhancing operational performance, thereby benefiting both parties. Agency theory is also utilized to explain the influence of the control environment, risk assessment, control activities, information and communication, and monitoring on crisis management.

Contingency Theory

Proposed by Drazin and Van de Ven (1985)ÿ-ÿH, contingency theory posits that an organization's optimal structure and effectiveness are dependent on its operating environment. Accordingly, an organization cannot achieve optimal performance

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without considering and adapting to its operational context. According to Jokipii (2010), firms must assess the characteristics of their environment and adjust their organizational structure to fit, in order to enhance and maintain performance. Within this framework, IC plays a significant role as an effective supportive tool in the organizational structure. This theory is critical for research, as the organizational environment directly influences the effectiveness and efficiency of management activities. This theory is employed to explain the relationship between factors that impact crisis management within the organization

2.3. Literature Review on Internal Control and Crisis Management

2.3.1. International studies

According to COSO (2013), the effectiveness of an Internal Control System (ICS) is contingent upon the functioning of its constituent components. The Basel Committee has noted that many bank failures are attributable to weaknesses in governance and leadership regarding the establishment and maintenance of internal control. An effective ICS facilitates the timely detection and prevention of errors and fraud in banking operations (Nyakarimi, Kariuki, & Kariuki, 2020). Consequently, internal control plays a vital and essential role in the banking sector.

A study by Ayagre, Appiah-Gyamerah, and Nartey (2014) on the ICS of banks in Ghana revealed that the control environment and monitoring activities are closely intertwined, thereby strengthening the entire control system within the organization. The control environment serves as the foundation, where the Board of Directors and senior management must establish a clear "tone at the top," emphasizing the importance of internal control throughout the organization. The effectiveness of the control environment is reflected in the processes of risk assessment, control activities, information and communication systems, and monitoring mechanisms. The monitoring component of internal control is tasked with assessing whether control measures are implemented as intended by the organization. If deficiencies are identified, they must be reported to the responsible individuals for timely remediation. Karagiorgos, Drogalas, and Dimou (2010) argue that a robust and well-organized ICS plays a critical role in ensuring the safety and stability of credit institutions and the banking system as a whole. Furthermore, when each component of the ICS operates effectively, there is reasonable assurance that control objectives will be met, contributing to overall stability.

Research by Kumari, Weerasooriya, and Athurupana (2019), analyzing the impact of internal control components on the financial performance of private banks in Sri Lanka, concluded that the control environment, risk assessment, information and communication, and monitoring are significant predictors of financial performance. Similarly, Pakurár, Haddad, Nagy, Popp, and Oláh (2019) also found a correlation between internal control and financial performance in Jordanian banks. Wang, Cui, and Jin (2022) demonstrated that an ICS, through its control activities, enhances resource allocation efficiency, reduces operational risk, and increases innovation output. During a crisis, these activities become vital, enabling the organization to rapidly reconfigure and reallocate resources (such as financial and human capital) to respond to the situation, maintain operations, and accelerate the recovery process. The study by Aksoy and Saglam (2020) established a strong positive correlation between the effectiveness of the ICS (including monitoring) and crisis management skills across pre-crisis, during-crisis, and post-crisis stages.

In summary, international studies collectively affirm that an ICS designed and operated effectively across all five COSO components provides a robust framework. This framework not only helps organizations prevent risks but also enables them to be proactive and agile in crisis management, thereby ensuring stability and sustainable development.

2.3.2. Studies in Vietnam

In Vietnam, Tran Vo Anh Khoa (2022) investigated credit risk management under Basel II at Orient Commercial Joint Stock Bank to analyze its status before and after implementation, subsequently proposing a suitable approach for the period leading up to 2025. Employing a qualitative approach, the research evaluated credit risk management through key indicators such as total outstanding loans, the non-performing loan (NPL) ratio, credit risk provisions, and the capital adequacy ratio (CAR) over the 2014–2021 period.

Bui Thi Lien (2021) utilized a qualitative method combined with the theory of internal control based on Basel principles to analyze credit activities at the Gia Dinh Branch of the Joint Stock Commercial Bank for Investment and Development of Vietnam (BIDV). The study assessed the current state of the Internal Control System (ICS), identified anomalies, investigated the causes of limitations in credit operations, and recommended solutions to address these shortcomings and improve the ICS for credit activities at this bank.

While international research on ICS in banks is diverse, studies in Vietnam primarily focus on two main directions:

- Identifying factors that affect the ICS in commercial banks.

- Assessing credit risk through the effectiveness of the ICS.

However, a research gap exists, as no studies have yet examined the impact of internal control on the crisis management skills of commercial banks within Ho Chi Minh City.

3. Quantitative research methodology

Based on data collected in 2024 from 383 employees working at 31 commercial banks in Ho Chi Minh City, selected via random sampling, the author analyzes the regression model using the Ordinary Least Squares (OLS) method. The study proceeds to conduct diagnostic tests for potential model deficiencies, followed by the estimation and interpretation of the model's significance.

The research model is grounded in the COSO (2013) framework and adapted from Aksoy and Saglam (2020). It comprises Crisis Management Skills (CM) as the dependent variable and five independent variables: Control Environment (CE), Risk Assessment (RA), Control Activities (CA), Information and Communication (IC), and Monitoring Activities (MA). Data were processed using SPSS 25 software through Cronbach's Alpha reliability testing, Exploratory Factor Analysis (EFA), and Ordinary Least Squares (OLS) multiple regression.

The regression equation for the model is specified as follows:

$$CM = \beta_0 + \beta_1 CE_i + \beta_2 RA_i + \beta_3 CA_i + \beta_4 IC_i + \beta_5 MA_i + \varepsilon_i$$

Where:

CM_i: The Risk Management Skills of the i-th commercial bank (Dependent Variable).

CE, RA, CA, IC, MA: These are the independent variables, representing the Control Environment, Risk Assessment, Control Activities, Information and Communication, and Monitoring, respectively.

β_0: The constant (intercept).

β_i: The coefficients of the respective independent variables.

ε_i: The error term (Residual).

Based on the theoretical frameworks established by Drazin and Van de Ven (1985)ÿÿR and Jokipii (2010), the following research hypotheses are proposed:

Hypothesis H1: A better control environment positively influences crisis management skills.

Hypothesis H2: A higher level of risk assessment is associated with higher crisis management skills.

Hypothesis H3: More effective control activities are associated with higher crisis management skills.

Hypothesis H4: A better information and communication system is associated with higher crisis management skills.

Hypothesis H5: A higher level of monitoring is associated with higher crisis management skills.

Given the strict confidentiality regulations and restricted access to personnel data within the banking sector, obtaining a complete population frame for probability random sampling was not feasible. Consequently, this study employed a convenience sampling technique. To mitigate potential selection bias and ensure representativeness, the survey was distributed through professional networks across a diverse range of 31 commercial banks in Ho Chi Minh City. The respondents were screened to ensure they possessed adequate experience and knowledge regarding the bank's internal controls and crisis response operations. The final valid sample size of 383 responses satisfies the stringent requirements for multivariate analysis as outlined by Tabachnick and Fidell (2007).

The data utilized for this study are primary. A questionnaire was designed based on a Likert scale, which was distributed to experts working at commercial banks (CBs) in the Ho Chi Minh City area. The study employed the method developed by Mitroff (1988), which investigates the impact of internal control on crisis management skills.

Subsequently, the data were processed using SPSS 25 software. The reliability of each scale was assessed using Cronbach's Alpha. Further analyses included exploratory factor analysis (EFA), linear correlation analysis, hypothesis testing, and multiple regression analysis for the research model.

4. Results and Discussion

4.1 Result

Scale reliability assessment

Cronbach's Alpha analysis was employed to evaluate the reliability of the scales. The results of this analysis are presented in **Table 1.**

Table 1. Scale Reliability Test Results

Factor	Number of items	Cronbach's Alpha Reliability	Scale Evaluation
Control environment (CE)	5	0.868	Acceptable
Risk assessment (RA)	3	0.813	Acceptable
Control activities (CA)	8	0.917	Acceptable
Information and communication (IC)	5	0.865	Acceptable
Monitoring activities (MA)	4	0.861	Acceptable
Crisis Management (CM)	5	0.860	Acceptable

Source: SPSS 25 analysis results

The Cronbach's Alpha analysis, detailed in Table 1, indicates that the reliability of all scales is acceptable. For the dependent variable scale, Crisis Management Skills, its constituent items (CM1, CM2, CM3, CM4, and CM5) all exhibited item-total correlations exceeding 0.3 (0.6, 0.595, 0.526, and 0.54, respectively). The overall Cronbach's Alpha coefficient for this scale is 0.86, surpassing the 0.6 threshold. Furthermore, the remaining independent variable scales also reported

Cronbach's Alpha coefficients greater than 0.6 and item-total correlations above 0.3, thereby meeting the prerequisites for Exploratory Factor Analysis (EFA).

Exploratory Factor Analysis (EFA)

To validate the appropriateness of the data for EFA, the study employed the KMO measure and Bartlett's Test of Sphericity. The analysis results confirm that the dataset satisfies the essential requirements for factor analysis. The KMO index of **0.918** exceeds the threshold of 0.5, demonstrating high sampling adequacy. Concurrently, Bartlett's test yielded a significance level of **0.000** ($p < 0.05$), providing evidence of significant correlations among the observed variables.

Multiple Regression Analysis

* Multiple Regression Results

A standard multiple regression was performed using SPSS 25. The independent variables were entered concurrently into the model. The outcomes of this analysis are summarized in Table 2.

Table 2. Multiple Regression Results

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Collinearity Statistics	
	B	Std. Error	Beta			Tolerance	VIF
(Constant)	.295	.151		1.949	.052		
Control Environment (CE)	.210	.040	.239	5.291	.000	.586	1.705
Risk Assessment (RA)	.164	.033	.197	5.017	.000	.780	1.283
Control Activities (CA)	.199	.035	.235	5.741	.000	.717	1.395
Information & Comm (IC)	.140	.033	.167	4.188	.000	.755	1.325
Monitoring Activities (MA)	.180	.034	.225	5.235	.000	.646	1.549

Source: SPSS 25 software results

Note. N = 383. Adjusted R^2 = .542; F(5, 377) = 91.51, p < .001.

Dependent Variable: Crisis Management Skills. B = Unstandardized coefficient; SE = Standard error; β = Standardized coefficient.

The regression analysis presented in **Table 2** indicates that the 5 factors CE, RA, CA, IC, and MA have a high statistical significance level ($p < 0.05$), indicating that these factors have a significant impact on Crisis Management skills.

The linear regression equation (using unstandardized coefficients) is established as follows:

$$CM = 0.295 + 0.210CE + 0.164RA + 0.199CA + 0.140IC + 0.180MA + \varepsilon_i$$

* Explanatory power of the model

The regression results detailed in Table 2 reveal an Adjusted R-squared value of 0.542. Consequently, 54.2% of the variance observed in the crisis management capabilities of commercial banks is attributable to the independent variables within this model.

* Overall model significance

Table 3. ANOVA

Model	Sum of Squares	df	Mean Square	F	Sig
Regression	74.669	5	14.934	91.510	.000[b]
Residual	61.524	377	.163		
Total	136.193	382			

Source: SPSS 25 software results

The Analysis of Variance (ANOVA) results in **Table 3** show a large F-statistic (F = 91.51) and a highly significant p-value (sig. = 0.000). This indicates that the constructed model is a good fit for the collected data, which also confirms the linear relationship between the independent and dependent variables.

4.2. Discussion

This study confirms that all five COSO components positively influence crisis management skills, aligning with Aksoy and Saglam (2020) but extending the findings to the complex context of Vietnam's banking sector. Notably, the Control Environment emerges as the strongest driver (β=0.239), supporting Ayagre, Appiah-Gyamerah et al. (2014) and Agency Theory's emphasis on the "tone at the top" in mitigating agency costs and guiding crisis behavior. Control Activities and Monitoring follow as critical operational defenses, consistent with Wang, Cui et al. (2022) regarding resource reallocation during shocks. Unlike prior Vietnamese studies Tran Vo Anh Khoa (2022) that focused on ex-post financial metrics (NPL, CAR), this research validates ICS as a proactive behavioral mechanism, proving that a robust control system functions as an organizational "immune system" against volatility.

5. Conclusion and Recommendations

5.1. Conclusion

This study, employing a quantitative approach with 383 responses from commercial banks in Ho Chi Minh City, identifies five key internal control factors influencing crisis management skills, ranked by significance: control environment, control activities, monitoring, risk assessment, and information and communication.

It is recommended that banks integrate crisis management processes into their Internal Control Systems (ICS) with clearly defined responsibilities and governance principles. As crisis management is imperative for survival, a systematically constructed and effective ICS is proven to enhance an organization's capability to handle crises and mitigate risks in a volatile environment.

5.2. Recommendations

The empirical results demonstrate that all five components of the Internal Control System (ICS) significantly contribute to the crisis management capabilities of commercial banks. To enhance resilience against financial market volatility and comply with Basel III standards, banking executives in Ho Chi Minh City should prioritize improvements in their ICS based on the magnitude of impact revealed by the regression analysis.

Prioritizing the Control Environment

With the strongest impact coefficient (β= 0.239), the Control Environment acts as the foundational

"immune system" of the bank.

- Establishing "Tone at the Top" regarding Crisis Governance: The Board of Directors and Senior Management must explicitly demonstrate that crisis management is not merely reactive "troubleshooting" but an integral part of corporate culture. Codes of Conduct should be updated to include specific provisions regarding responsibilities and authority during emergency situations.

- Fostering a Culture of Transparency: Banks should encourage a "non-punitive reporting" culture for minor operational errors. This facilitates the early detection of potential crisis precursors before they escalate, thereby minimizing agency costs associated with information asymmetry and concealment.

Standardizing Control Activities

Identified as the second most critical factor (β= 0.235), control activities must be designed to function seamlessly even under high-pressure conditions.

- Crisis Standard Operating Procedures (SOPs): Banks need to develop distinct control scenarios for crisis situations (e.g., emergency credit approval protocols, rapid liquidity lock-down procedures). These protocols enable the rapid reconfiguration and reallocation of resources (financial and human capital) to maintain operations, as suggested by Wang et al. (2022).

- Automated Control Checkpoints: Enhancing the application of technology (Fintech/AI) in transaction control points is essential to mitigate human error when staff decision-making is compromised by crisis-induced stress.

Enhancing Monitoring Activities

Monitoring ensures the control system remains effective when it matters most (β = 0.225).

- Transition to Continuous Auditing: Banks should shift from periodic auditing to Continuous Auditing to immediately detect vulnerabilities when the system is under stress. Deficiencies must be reported immediately to responsible individuals for timely remediation.

- Post-Crisis Evaluation: Following any incident, the internal control department must conduct an independent review to assess whether current processes functioned as designed, subsequently updating the system to prevent recurrence.

Implementing Proactive Risk Assessment

Although possessing a lower coefficient (β= 0.197), proactive risk assessment serves as an indispensable prerequisite.

- Rigorous Stress Testing: In the context of Basel III compliance pressures, banks must perform regular stress tests involving extreme hypothetical scenarios (e.g., systemic liquidity crises or widespread cyberattacks) to evaluate the system's endurance.

- Identifying Non-Financial Risks: The scope of risk assessment should be expanded to include non-financial factors such as reputational risk and media crises, as these are often catalysts that exacerbate crises in the modern banking environment.

Optimizing Information and Communication

Despite having the lowest coefficient (β= 0.167) effective communication is vital for safeguarding the bank's reputation.

- Emergency communication channels: Internal hotlines and early warning systems must be established to ensure that critical crisis information reaches top management in real-time, bypassing intermediate layers that might distort data.

- Unified messaging: Banks must ensure that data retrieved from the ICS is accurate and consistent to support external communications, thereby controlling public perception and mitigating negative impacts during a crisis

6. Limitations and future research

Despite the significant contributions, this study is not without limitations. First, regarding the sampling method, due to strict confidentiality regulations and restricted access to internal personnel data in the banking sector, the study employed a convenience sampling technique rather than probability sampling. Consequently, while the sample size of 383 respondents from 31 banks is statistically sufficient for analysis, the findings may possess a certain degree of selection bias and may not fully represent the entire population of banking employees in Vietnam. Future research could address this by expanding the geographic scope beyond Ho Chi Minh City to other major financial hubs (such as Hanoi or Da Nang) or employing stratified random sampling if access to personnel lists becomes feasible.

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