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## The influence of crisis management and management tools on firm performance: Evidence from manufacturing SMEs in Thailand

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### ABSTRACT

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This study aimed to evaluate the impact of variables that affect SME crisis management (CRI), management tools (INT), and contingency leadership (SIT) factors. The data was collected from 405 samples of SMEs in the manufacturing sector in Thailand. According to the results, the variables are related, and the model and hypothesis are aligned. Direct influences that affect SMEs' performance are factors for crisis management and management tools. Contingency leadership was an indirect influence and mediator between crisis management on firm performance. Management tools include the McKinsey 7s, the resource-based view, and value chain management. Crisis management factors include preparation, response, and post-situation rehabilitation. Lastly, the contingency of leadership factors must be considered when evaluating firm performance. It consists of traditional leadership, mindfulness leadership, and resilience leadership.

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### 1. Introduction

Business crises require proper planning, intervention, and preparation for survival and sustainability (Fink, 2013; Doern, 2014; Bank, 2017; Friedman, 2020). Natural disasters, political instability, trade wars, pestilences, and economic problems may result from these unplanned events (Coombs et al., 2017). Typically, enterprise crises involve a threat to the business, the element of surprise, and immediate action is necessary (Groh, 2014). Conducting a study to identify effective crisis management strategies may help mitigate entrepreneur closures (Al-Shehhi et al., 2020). The literature on crisis management addresses a specific tool for dealing with crises. Because disasters are chaotic and uncertain, it is not easy to understand how to manage them effectively. The Bank of Thailand cites several crises that have affected the world since the start of the 21st century, including epidemics. The economic situation in Thailand is also affected by these crises. Small and medium-sized enterprises (SMEs) have decreased due to a lack of liquidity and debt problems, which led some operators to close their businesses due to a lack of knowledge (Bank of Thailand, 2022). Among the factors limiting employees' ability to manage is a lack of promotion from relevant government agencies and experience handling appropriate crises. Studies on crisis management have determined that preparedness factors before a crisis occurs, managing organizational crises and their effects, responding to the situation, and recovering are fundamental factors (Friedman, 2020; Coombs et al., 2017; Davis & Post, 1988). The impact of critical managing situations on firm performance has been validated in many previous studies (Vrontis et al., 2021). The performance of a firm is also affected by factors related to internal management. Nevertheless, this research focuses on the management of crises, alongside other variables that affect firm performance, including crisis management, management tools, and contingency leadership (Wilaiwan, 2017).

### 2. Literature review

Through fascinating material from diverse literature, this review seeks to examine “firm performance in crises” comprehensively. It is important to conduct such a review, as recent research on firm performance remains dominated by empirical studies.

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## 2.1 Crises management (CRI)

When an unexpected event or threat from external factors affects the results of an entity, crisis management is implemented (Coombs et al., 2017; Morris & Goldsworthy, 2012). Crisis management aims to enable the business to escape the problem and return to normalcy, which includes planning and preparing before the crisis occurs, coping with the crisis, and rehabilitating afterward. A previous study of factor effects on firm performance in crises concluded that entrepreneurs should prepare a plan to deal with problems that may occur. Good planning will allow us to survive (Ahmed et al., 2020; Abubakar, 2020; Muozet et al., 2019, Hu et al., 2018). According to a study of crisis management as a response to situations and recovery from crises, responding to the crisis according to the pre-scenario response plan influences performance and affects business rehabilitation after the crisis.

## 2.2 The management tools (INT)

The purpose of this study was to examine three organizational management tools: McKinsey's 7s Model, Resource-Based View, and Value Chain Management.

**2.2.1 7s McKinsey Model:** Among the seven elements of the 7s model are strategy, structure, system, style, skills, and shared values that influence the firm's performance (Park et al., 2021; Gechkova & Kaleeva, 2020; Salvarli & Kayiskan, 2018; Ravanfar, 2015).

**2.2.2 Resource-based view:** Ensures that operations can outperform the competition. This strategy aims to enhance the reputation of the company's products, services, technology, and relationships, creating opportunities and reducing obstacles. In addition, it can increase profit margins in operating results. (Barney, 1986; Barney & Arekan, 2001). As Hunt and Lambe (2000) found, the adoption of a business to survive a crisis and an external environment that has changed rapidly and uncertainty now included image reputation, technology, innovation, financial resources, marketing capabilities, project management skills, and human resources to enhance the management potential of the organization. Studies have shown that RBV affects performance in critical situations, such as when focusing on the rapidly changing external environment and developing innovative technologies to adapt and respond accordingly, changing the environment and causing sustainability (Hoefl, 2021; Fearn et al., 2021).

**2.2.3 Value Chain Management (VL):** The concept of a value chain is intended to explain how the roles and functions of different departments within an organization interact with each other and support the organization in creating value for its customers. Starting with the introduction of raw materials into the production process and ending with the distribution to the customer, each activity contributes to the creation of value (Porter, 1985). During a crisis, value chain management is of paramount importance. The situation that arises may affect supply chain management. Since value chain management is an important management tool in the manufacturing industry, the researcher is interested in using it as a parameter to measure performance in this research (Toivonen & Siitonenb, 2016; Acero et al., 2020; Alsmairat, 2023).

## 2.3 The contingency of leadership (SIT)

In addition, crisis management requires good leadership to guide the organization to a good outcome. Several leadership roles have been studied in relation to situational management in the past. As a result, the study focuses on traditional leadership roles that are solely concerned with achieving work outcomes (Dikova & Veselova, 2021). Several studies have documented the effect of contingency leadership on mindfulness leadership (Glomb et al., 2011; Reb et al., 2015; Tulucu et al., 2022). The ability to manage crises situationally requires a leadership role that is not only traditional in nature, but also evolving over time because of rapidly changing external environmental factors which are complicated and uncertain (Bovsh et al., 2021; Hoefl, 2021; Fearn et al., 2021). Dikova and Veselova (2021) demonstrated that in an uncertain situation, the leader's role and decentralization to the relevant departments reduce the time and process of centralizing powers to increase firm efficiency. In addition, Reb et al. (2015) investigated the relationship between ideological leadership and subordinates within an organization. Mindful leadership enhances subordinates' awareness, reduces tension during crises, and increases the efficiency of the firm's performance. As well, Fearn's study (2021) revealed that a leader's resilience and agility are key to effective crisis management. The effective implementation of teamwork requires the practical participation of the individuals in the organization, emphasizing the importance of tailored procurement, including the use of technology systems, along with the recognition that both promote flexibility and facilitate the achievement of organizational objectives.

## 3. Conceptual framework and hypothesis developed

### 3.1 Crisis management

The crises management factors include planning, policymaking, resource management, and internal communication between customers and firms, which have a positive impact on sales and profits, as well as on growth, not only monetary, but also marketing growth, etc. All these factors are critical to the overall performance, including the preparation and handling of crises. According to the above discussion, it is suggested that:

**H<sub>1</sub>:** *Crisis management has a positive influence on firm performance.*

### 3.2 Management tools

The purpose of this study is to test three important management tools: value chain management; management with McKinsey 7s; and resource-based management. Several studies have demonstrated in the past that these management tools contribute to business performance, and that these management tools are still relevant today to manage the business in. According to the above discussion, it is suggested that:

**H<sub>2</sub>:** *The management tools have a positive influence on firm performance.*

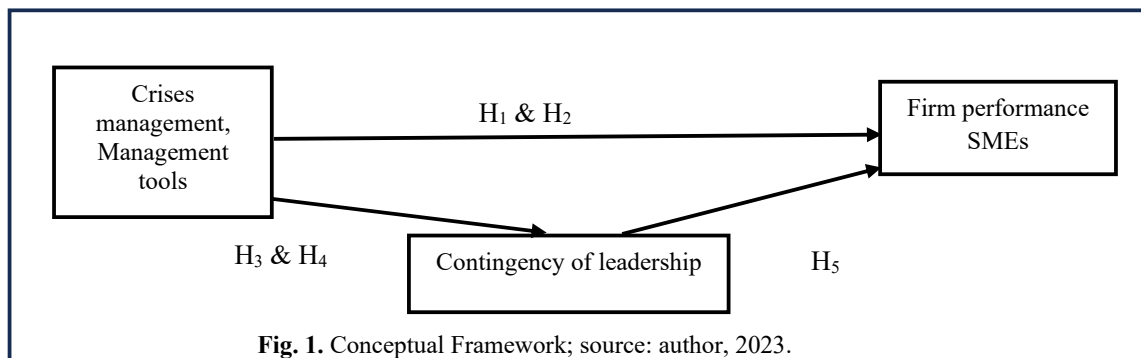
### 3.3 The contingency of leadership

The contingency of leadership variables affecting the firm's performance, by different studies all influence the performance of the firm in different circumstances. However, a study by Subramanian and Suresh (2022) found that the role of contingency leadership is associated with firm performance and is composed of two interesting variables, namely mindfulness and resilience. As far as the study's role as a mediator of crisis management and management tools is concerned, no previous studies have been conducted. As a result, the researcher is interested in testing whether it affects the performance of the firm in this study. Therefore, from the above evidence, it can be formulated as a research hypothesis as follows.

**H<sub>3</sub>:** *Crisis management has a positive influence on the contingency of leadership.*

**H<sub>4</sub>:** *Management tools have a positive on the contingency of leadership.*

**H<sub>5</sub>:** *The contingency of leadership has a positive influence on firm performance.*



## 4. Research methodology

To conduct the research, a survey method was used to survey respondents in the manufacturing sector in Thailand who were small and medium size entrepreneurs. Research is conducted in the following steps:

### 4.1 Sample and Data Collection

The sample for this study was drawn from the Department of Business Development (DBD) directory of Thai SMEs (Manufacturing Sector). A total of 104,759 SMEs were registered at the time of data collection, and they are still operating today. A simple random sampling method was used to select 2,500 companies from the manufacturing sector for this study. We collected the data through a self-administered online questionnaire survey. Companies with crisis experience in the country provided the data. The study's objectives were explained to them, as well as a guarantee of confidentiality and anonymity. Four hundred and five usable surveys were collected at the end of the data collection period. As a result of this amount, the response rate is equal to 8.10 percent.

### 4.2 Scale Development

The questionnaire was developed based on a previous study of measuring instruments. It was designed as a Likert scale (1-5) in which 1 and 5 indicate strongly disagreeing and agreeing, respectively (Warmbrod, 2014; Saunders et al., 2019).

### 4.3 Statistics and Data Analysis

To determine the characteristics and opinion levels of the respondents, descriptive statistics were first used to analyze the study data. Confirmatory Factor Analysis (CFA) was used to evaluate the suitability and validity of the structural equation model.

#### 4.4 Measurement Model Analysis

To determine whether the contents were accurate and comprehensive. For reliability analysis, Cronbach's alpha coefficients greater than 0.70 were selected (Hair et al., 2017). The composite reliability should be greater than 0.70, and the average extracted variance (AVE) should be greater than 0.50 (Hair et al., 2014). Furthermore, it examined discriminant validity using the square root approach of the average variance extract of the latent variable (Hair et al., 2017) to demonstrate the ability of variables within each measurement model to only measure components within the model.

### 5. Results

#### 5.1 Demographic Characteristics

The demographic characteristics of this study are presented in Table 1. An entrepreneur is selected based on a variety of factors, including his or her position within the organization, his or her education, the period of the organization's existence, and the firm's size. A description of the crisis experience and the problems that occurred during that time is also presented in the descriptive section.

#### 5.2 Multicollinearity Testing

According to the Multicollinearity test of the factors studied in this research; crisis management, management tools, and contingency of leadership, all the observed factors were highly accurate and valid in accordance with the specified criteria (Hair et al., 2019).

**Table 1**  
Demographic characteristics of respondents

Characteristics	N	%
<b>Position</b>		
<i>Business owner, partner</i>	225.0	63.00
<i>Executive manager</i>	150.0	37.00
<b>Education</b>		
<i>Under bachelor's degree</i>	100.0	24.70
<i>Bachelor's degree</i>	128.0	31.60
<i>Master's and higher degree</i>	177.0	43.70
<b>Establishment period</b>		
<i>Less than 5 years</i>	157.0	38.80
<i>5 to 10 years</i>	84.0	23.20
<i>10 to 15 years</i>	73.0	18.00
<i>More than 15 years</i>	81.0	20.00
<b>Firm Sized</b>		
<i>Small</i>	258.0	63.70
<i>Medium</i>	147.0	36.30
<b>Crises event</b>		
<i>Tom Yum Kung economic crisis: 1997</i>	82.0	11.10
<i>Bird Flu Outbreak: 2003 to 2006</i>	20.0	2.70
<i>Natural Disaster Tsunami: 2004</i>	17.0	2.30
<i>The Subprime Economic Crisis in the USA: 2008</i>	26.0	3.50
<i>The Great Flood in Thailand: 2011</i>	58.0	7.80
<i>Severe Drought El Niño Phenomenon: 2013</i>	40.0	5.40
<i>Political Turmoil in the Country: 2014</i>	101.0	13.60
<i>Corona Virus Epidemic 2019: 2019 to present</i>	397.0	53.60
<b>Problems in crises</b>		
<i>Lack of working capital.</i>	235.0	22.90
<i>Increased costs and operating expenses.</i>	226.0	22.00
<i>Decreased ability to pay the debt.</i>	130.0	12.70
<i>Unable to procure raw materials for production.</i>	83.0	8.10
<i>Labor shortage</i>	120.0	11.70
<i>Lack of supervision and support from relevant government agencies</i>	154.0	15.00

#### 5.3 Testing of Model Suitability

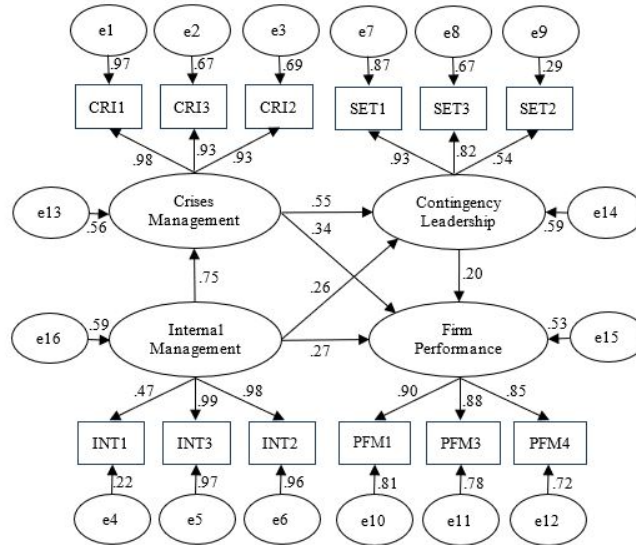
In the first examination, confirmation factor analysis (CFA) was used to assess the fitness and reliability of the model, and then to assess the validity and reliability of the constructs. The Chi-square for overall fit evaluation was 1.57 (<5), the Comparative Fit Index (CFI) was 0.998 (>0.90), The Goodness of Fit Index was 0.989 (>0.90), the Adjusted Goodness of Fit Index (AGFI) was 0.956 (>0.8), Root Mean Square Error of Approximation (RMSEA) was 0.032 (<0.05), Normal Fit Index (NFI) was 0.995 (>0.90), Incremental Fit Index (IFI) was 0.998 (>0.90), and Root Mean Square Residual (RMR) was 0.008 (<0.05). According to Hair et al. (2019) and Hu and Bentler (1999), the confirmation factor analysis is an assumption agreement that is highly valuable for structural equation modeling. Cronbach's alpha of 0.880 to 0.977 was obtained, and the data examined were reliability data. Based on the results of the average variance extracted (AVE) and the composite reliability (CR) for each factor, the validity of the factor was assessed. Shown in Table 2.

**Table 2**  
Factor loading, variance and reliability analysis.

Dimension and indication factors	$\lambda$	AVE	CR
<b>Crisis Management; Cronbach Alpha = 0.904</b>			
Preparation plan before crises.	0.98	0.826	0.934
Action in the crises.	0.94		
Rehabilitation after crises.	0.80		
<b>Management tools; Cronbach Alpha = 0.963</b>			
7s McKinsey model	0.49	0.727	0.881
Resource-based view	0.99		
Value chain management	0.98		
<b>Contingency of leadership; Cronbach Alpha = 0.880</b>			
Classic leadership	0.78	0.529	0.720
Mindfulness leadership	0.73		
Resilience leadership	0.52		
<b>Firm performance; Management tools; Cronbach Alpha = 0.977</b>			
Excellent performance	0.57	0.508	0.626
Average performance	0.62		
Poor performance	0.60		

5.4 The structural model analysis (Hypothesis Testing)

Using the structural equation model, the results of the analysis and testing of the crisis management strategy of SMEs (manufacturing) in Thailand were examined. Variables included Crisis Management (CRI), Management Tools (INT), Leadership Contingency (SIT), and Firm Performance (PFMC). All four overall models fit and passed the criterion of  $\chi^2/df = 1.417$ , CFI = 0.998, GFI = 0.989, RMSEA = 0.320, and RMR = 0.008. According to Byrne (2016), the empirical study was based on the consistency model (Fig. 2) (Rigdon, 1996).



Chi-Square = 26.926, df = 19 Sig. = .106 CMIN/df = 1.417, n = 405, CFI = .998  
NFI = .995, CFI = .989, AGFI = .956, IFI = .998, RMSEA = .32, RMR = .008

**Fig. 2.** The Structural Model Results (Diamantopoulos & Siguaw, 2000; Feinian et al., 2008)

Table 3 shows the outcome of structural equation model and hypothesis testing. The demonstration of CRI (H1;  $\beta = 0.34$ ) and INT (H2;  $\beta = 0.27$ ) have a positive influence on PFMC, so H1 & H2 were supported. The positive influence of CRI (H3;  $\beta = 0.55$ ) and INT (H4;  $\beta = 0.26$ ) on SIT were confirmed. The relation of SIT (H5;  $\beta = 0.20$ ) has a positive influence on PFMC was verified. All of hypothesis testing had t-value more than 1.96, and significant at the 1% level, as a result, those hypotheses were supported and validated by the theories.

**Table 3**  
Structural equation modeling fitting effect

Hypothesis	Beta value	t-value	P value	R <sup>2</sup>	Conclusion
H <sub>1</sub>	0.34	11.166	0.000***	53.0%	Supported
H <sub>2</sub>	0.27	10.899	0.000***	53.0%	Supported
H <sub>3</sub>	0.55	5.538	0.000***	59.0%	Supported
H <sub>4</sub>	0.26	4.687	0.000***	59.0%	Supported
H <sub>5</sub>	0.20	4.887	0.005*	53.0%	Supported

Note: \*\*\* indicated that P valued < 0.001. If P < 0.05 that means an accepted hypothesis.

## 6. Discussion

A study was conducted to investigate the impact of crisis management and management tools on Thai SMEs in the manufacturing sector. Following is a summary and discussion of the findings related to the following research objective:

A significant influence of crisis management on firm performance was observed at the level of 0.001, demonstrating that crisis management has an important role to play in the performance of an entity during a crisis, which consists of preparing, responding, and recovering. To implement management processes in business management, crisis management plays an important role for SMEs. As a result of these components, severe damage can be prevented or mitigated, which may negatively impact the performance of a company in the future. This research is consistent with a study by Muñoz et al. (2019) on the crisis management of small and medium-sized businesses in Chile after the 2015 and 2016 volcanic eruptions, which found that entrepreneurs should prepare a plan to support the crisis that will occur. In the event of a crisis, they will be able to survive if they have adequate planning in place. Moreover, it should respond to situations in accordance with a plan. The effectiveness of the implemented plan should be assessed after the situation has passed. Moreover, it can be used to cope with future crises. As a result of these empirical findings, entrepreneurs are required to implement them if they wish to survive and maintain in the current uncertain economic climate.

This study found that management tools, namely 7s McKinsey, RBV, and value chain, had a significant influence on firm performance. This indicates that the management tools tested in this study are significant for Thai SMEs manufacturing enterprises' performance. Although the original findings regarding RBV and value chain have been around for a long time, they remain relevant today. In the study of Gechkova and Kaleeva (2020), McKinsey's seven-skilled model was utilized to influence airport security management, strategy, systems, and skills relating to the study of Salvarli and Kayiskan (2018) in which strategic considerations for the analysis of the organization's current situation were incorporated into the model for the purpose of contributing to its management. It is possible to improve performance and achieve the organization's objectives by preparing an action plan based on the organization's objectives and analyzing the 7s McKinsey model. This is also consistent with the study by Demir & Kocaoglu (2019) using the 7s McKinsey model to evaluate firm readiness in the event of artificial intelligence disruption. The results showed that the seven McKinsey factors: strategy, share value, structure, skill, system, and staff affected the assessment. It is a criterion for improving the efficiency of an organization and determines the preparation process for digital business transformation. The study by Ravanfar (2015), an organizational structure analysis based on the McKinsey Models Study of Qeshm Airlines in Iran, was inconsistent with this finding.

Further, this study used a resource-based management approach, and the results indicated that this approach has a significant influence on firm performance, which is consistent with the study conducted by Michalisin et al. (2004) examining the resource base-view theory, which concluded that teamwork positively affects management services within an organization, and that human resources are of critical importance for business management. In addition, Runyan (2006) examined micro-entrepreneurs from the perspective of resource-based theory. Small businesses should consider the differences between tangible and intangible resources when it comes to success. The study collected data from small-scale businesses in rural and suburban communities in Michigan and Oklahoma, USA. As a result of the study, intangible resources, such as social costs and entrepreneurial attributes, are significant factors. Solid success can be achieved through it. In addition, intangible resources within the organization, including knowledge, information, and information systems, are essential resources and affect the business's performance, in line with the study conducted by Ali et al. (2019) found that economic, social, legal, and administrative factors (intangible resources) significantly influence women entrepreneurs' performance. The ability to achieve a competitive advantage without relying on tangible assets such as capital and machinery. The results of this research also have a significant impact on the performance of firms when considering the composition of the management tools within a value chain management system. This finding is aligned with the results of a previous study by Suwannaphusit and Chayomchai (2018) study on the relationship between value chain essential activity management and innovation capability and the performance of The Group A: One Tambon One Product (OTOP) enterprises in Thailand in the procurement of raw materials, production, distribution, marketing and sales, and customer service that affect the results of the operations of the A Group. According to the evidence presented in this study, classic theory, in particular the value chain, is still necessary in the management of crises. Even though the management tools studied in this study are 7s McKinsey, resource-based views, and value chain management, they are still valuable and valid for SMEs in Thailand as they increase firm performance, which suggests management tools practices can contribute to sustainable firm efficiency during crises.

Firm performance is influenced by the contingency of leadership at the 0.001 level, illustrating that the contingency of leadership is essential for the leader in times of crisis. Considering the elements of situational management factors which the researcher used in this study consisting of leadership factors, mindfulness factors, and resilience factors in management, the findings of this study indicate that leaders have a positive impact on a team's operational effectiveness. According to Dikova & Veselova's study of multinational companies operating in Russia, this is in line with other studies. As a result of an uncertain situation, cooperation among people in the organization was found to reduce time and processes (resilience leadership) and increase operational efficiency. It is also consistent with studies by Carleton et al. (2018) and Arendt et al. (2019) that mindfulness leaders have a direct influence on performance. A previous study by Fearn et al. (2021) found that the crisis procurement process resilience leadership role is the most effective way to handle a crisis. In this research, the

contingency of leadership has been shown to be a mediator between crisis management and firm performance, and it is also shown to be a mediator between management tools and firm performance. Both of those factors are significantly influenced by firm performance, according to the results of the research. Therefore, the business can survive a crisis by addressing the leadership role.

## 7. Conclusion

In Thailand's SMEs manufacturing sector, the findings of this study have enhanced the existing education to generate higher levels of firm performance. An effective firm performance during a crisis is dependent on crisis management and management tools. It is one of the most important factors necessary for a firm to have a good turnover during times of crisis. The inability of SMEs to manage their businesses during that period has resulted in the closure of many businesses in the past. There has been a substantial economic loss. To achieve sustainability in the future, SMEs should apply the findings to managing crises, which includes the role of a leader. The SME will be stronger and more capable of competing with other entrepreneurs in the future. This is if it can get out of the crisis and learn from the situation.

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