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THE IMPACT OF STRATEGIC AGILITY ON OPERATIONAL RESPONSIVENESS AND FIRM PERFORMANCE OF IMPORT, EXPORT, AND LOGISTICS ENTERPRISES

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Abstract

The purpose of this research was to study the impact of strategic agility comprising technology capability, collaborative innovation, organizational learning, and internal alignment on operational responsiveness and firm performance of import, export and logistics enterprises. The research methodology was quantitative research with survey method by using questionnaires for data collection. The respondents were 400 importers, exporters, and logistics service providers located in the Bangkok Metropolitan Region. Samples were selected using non-probability sampling with a purposive sampling technique. Descriptive statistics used for data analysis included frequency, percentage, mean, and standard deviation. Due to hypothesis testing, inferential statistics used were Pearson's Product Moment Correlation Coefficient and Partial Least Squares-Structural Equation Modeling. The findings indicated that strategic agility had the strongest positive effect on operational responsiveness and firm performance, and operational responsiveness mediated the effect of strategic agility on firm performance at a significance level of 0.001. Besides, operational responsiveness had positive and significant effect on firm performance at a significance level of 0.001.

Keywords: Strategic Agility, Operational Responsiveness, Firm Performance, Import and Export, Logistics Enterprises

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Introduction

In the era of the digital economy, where the business environment is highly dynamic, continuous changes occur both externally at the regional level and within the industry. This dynamic landscape necessitates businesses to focus on competitive advantage, emphasizing improvements in speed and operational efficiency. However, not every company can successfully transform its operations into sustainable performance, even if they invest in enhancing competitiveness by improving speed and operational efficiency. Challenges may arise due to unforeseen environmental changes and unexpected challenges. Therefore, firms should not only aim for operational efficiency but also consider the importance of building agility and adaptability to increased challenges. Lee (2004) highlights that firms need to concentrate on creating agility and adaptability as they seek to be successful in the rapidly changing business environment.

Agility in business research has various interpretations, categorized into two perspectives. One perspective is general agility which focuses on external factors that help firms rapidly improve operations to cope with fluctuating, unpredictable market conditions and sudden changes in customer demands (Braunscheidel & Suresh, 2009). On the other hand, strategic agility involves not only the ability but also the strategy that collaborates with systems, operational processes, or holistic management approaches resulting from multiple capabilities (Cao & Dowlatshahi, 2005; Li et al., 2008; Brannen & Doz, 2012). Firms with agility must not only possess operational flexibility but also demonstrate agility in crafting new strategies to rapidly respond to environmental changes.

The alternative perspective on agility holds greater appeal, as coping with the ever-changing business landscape requires institutions to introduce innovative ideas and undergo transformations. To thrive in this dynamic environment, institutions must adopt a comprehensive approach, integrating novel concepts and adaptive behaviors across various facets, including products, services, processes, technology, and management techniques (Daft, 1978). Nevertheless, the majority of existing empirical investigations define agility as a primary capability and utilize scales commonly associated with flexibility, including manufacturing lead time, delivery speed, customization, and responsiveness. For instance, Gerwin (1993) interprets flexibility and responsiveness as the capacity to swiftly modify a firm's objectives to align with new conditions.

Information technology plays a pivotal role in enhancing organizational competitiveness, particularly for small and medium-sized enterprises (SMEs) (Nugroho, 2015). Policies promoting a digital economy aim to leverage technology across sectors (Mohanarajan, 2016). In industries like import, export, and logistics, strategic agility is vital for adapting to customer demands and improving competitive advantage. Researchers explore its impact on operational responsiveness and firm performance in these sectors to drive efficiency. Entrepreneurs in the import, export, and logistics service industries needed to employ strategic agility to achieve flexible operations, concentrating on enhancing competitive advantages. This involved adapting and adjusting to customer requirements for efficient operational outcomes. Strategic agility, encompassing technology capability, collaborative innovation, organizational learning, and internal alignment, and operational responsiveness had a significant impact on firm performance. Therefore, researchers were interested in studying the impact of strategic agility on operational responsiveness and firm performance of import, export and logistics enterprises. This research aimed to provide insights for driving more efficient operations in the industry.

Literature Reviews

Strategic Agility

The research partially employed the concept of strategic agility (Doz & Kosonen, 2008; Brannen & Doz, 2012). Doz & Kosonen (2008) explained that strategic agility results from

strategic sensitivity, leadership unity, and resource fluidity. On the other hand, Brannen & Doz (2012) viewed strategic agility as the ability to develop strategic alternatives and make reasoned and timely decisions. According to Kumkale (2016), strategic agility serves as a mechanism for establishing a competitive advantage within the organization. Păunescu et al. (2018) support the significance of value creation for the business environment, and Adamik et al. (2018) show the importance of achieving the competitive advantage.

Shin et al. (2015) developed a theoretical framework related to strategic agility, utilizing data from field interviews, triangulation for construct development, and empirical research. The study identified four foundational dimensions of strategic agility consisting of technology capability, collaborative innovation, organizational learning, and internal alignment. First of all, technology capability is crucial for adapting to evolving customer needs (Saha et al., 2017; Sheel & Nath, 2019; Monyei et al., 2021), with prior literature indicating a positive correlation between strategic agility and technology capability (Lu & Ramamurthy, 2011; Panda & Rath, 2021). Information technology plays a strategic role in enhancing agility (Zaheer & Zaheer, 1997), as confirmed by Shin et al. (2015). In terms of collaborative innovation, it involves flexible process configuration to meet diverse customer needs (Roberts & Grover, 2012), aligning with the concept of collaborative work process innovation (Lee et al., 2010). Shin et al. (2015) found a positive relationship between strategic agility and collaborative work process innovation. Organizational learning, including creativity and knowledge replication, enhances organizational intelligence (Bahrami et al., 2016), contributing to improved task performance (Braunscheidel & Suresh, 2009). Strategic agility necessitates fostering employee capabilities through a flexible work environment (Li et al., 2008), aligning with the findings of Shin et al. (2015) on the positive influence of strategic agility on organizational learning. Internal alignment, crucial for SMEs (Pett & Wolff, 2007), involves ensuring unity and agreement among leaders and units (Robinson & Stern, 1998). Shin et al. (2015) demonstrated a positive relationship between strategic agility and internal alignment. Overall, the study of Shin et al. (2015) highlights the importance of these dimensions in fostering strategic agility, which is vital for organizational adaptability and competitiveness.

Operational Responsiveness

Operational responsiveness refers to an organization's ability to swiftly adapt to business uncertainties (Nenavani & Jain, 2023; Santosa & Triwulandari, 2023). Hoyt et al. (2007) identified key factors enabling this responsiveness, including environmental scanning and flexible manufacturing. Numerous research has investigated the correlation between supply chain responsiveness and operational performance, specifically in the setting of supply chain uncertainty (Mbah & Okwo, 2022; Nenavani & Jain, 2023; Santosa & Triwulandari, 2023). These studies have shown that supply chain responsiveness may serve as a mediator, mitigating the influence of uncertainty on operational performance. Proactive risk management protects the firm’s assets, reputation, resilience, and long-term success (De Araújo Lima et al., 2020). Furthermore, McLean et al. (2022) have highlighted strategic supplier connections, customer relationships, and capacity planning as crucial elements which significantly influence supply chain responsiveness (Nenavani & Jain, 2022). Operational responsiveness can be enhanced through communication, workforce planning, and technology (Sahi et al., 2019). Industries like export-import rely on it for managing uncertainties (Ando & Iriyama, 2009).

The pursuit of strategic agility by the top management was associated with improving the company’s responsiveness in its operations (Swafford et al., 2006; Braunscheidel & Suresh, 2009). Operational responsiveness represented a high level of flexibility to meet customer and market demands (Gerwin, 1993; Choi & Krause, 2006). Therefore, it emerged as the most evident outcome in the pursuit of strategic agility, as indicated by all possible performance metrics. In addition, Inman et al. (2011) and Whitten et al. (2012) hypothesized the positive influence of agility or flexibility on operational performance. In other words, Inman et al.

(2011) found a positive relationship between the agile manufacturing of a company and its operational performance, contributing to the company's improved marketing performance. Furthermore, the study by Whitten et al. (2012) revealed that the triple-A supply chain paradigm, consisting of agile, adapt, and align elements, positively influenced the operational performance of the supply chain, acting as a mediating variable between the triple-A supply chain and financial performance. Shin et al. (2015) concluded that strategic agility had a significantly positive impact on operational responsiveness. Therefore, the following hypothesis was proposed for this research:

H1: Strategic agility significantly impacts operational responsiveness.

Firm Performance

Firm performance, assessed over previous and ongoing periods, encompasses financial, operational, and client retention aspects (Herciu & Șerban, 2018; Dwivedi et al., 2021). Financial performance encompasses the evaluation of a company's strategies and activities in terms of money, assessing its profitability and financial stability throughout a defined timeframe. This assessment entails various dimensions, including production and productivity, profitability, liquidity, leverage, asset utilization, and growth (Kuo et al., 2020; Novatiani, 2021; Panigrahi, 2019). Operational performance refers to the total efficacy and efficiency of a company's operations in accomplishing its goals and objectives (Liew et al., 2022; Wang et al., 2018). Customer retention involves various factors like performance expectancy, satisfaction, loyalty programs, CRM, service, marketing, sales, product quality, and pricing (Sohail et al., 2023; Thomas et al., 2023). Key performance determinants include liquidity, leverage, firm size, operational strategy, profitability, solvency, governance factors like board size and ownership structure (Bariyyah & Malau, 2023; Khan & Mahmood, 2023).

The research investigates the relationship between strategic decision-making practices and operational and financial performance. Swafford et al. (2006) and Vickery et al. (2010) link supply chain agility to financial performance. Tallon & Pinsonneault (2011) investigate agility's effect on financial performance under environmental volatility. Sud-on (2014) supports the positive impact of agile capabilities on operational performance. Customer retention, especially in B2B markets, is crucial for SMEs, as emphasized by Choi & Krause (2006). Shin et al. (2015) found that strategic agility, aimed at responding to unpredictable market shifts and customer demands, significantly enhances customer retention for SMEs. Therefore, the following hypothesis was proposed for this research:

H2: Strategic agility has a significant impact on firm performance.

The Mediating Role of Operational Responsiveness

The conceptual framework, rooted in the structure-conduct-performance (SCP) paradigm of industrial organization (Scherer & Ross, 1990), faces limitations in capturing the nuances of firms' behaviors due to their varying sizes, resources, and strategies (Barney, 1991; McWilliams & Smart, 1993). Business research has shifted towards examining how strategy influences performance through conduct and resources (Barney, 1991). Operational responsiveness, crucial for adapting to dynamic business environments, has been linked to improved performance (Nenavani & Jain, 2023; Santosa & Triwulandari, 2023), particularly in industries facing changing customer needs and market disruptions (Ando & Iriyama, 2009; Sahi et al., 2019). Shin et al. (2015) proposed a strategic agility framework, testing operational responsiveness as a mediator between strategic agility and firm performance (LeBreton et al., 2009), emphasizing its role in enhancing customer retention. However, its impact on financial performance remains inconclusive (Shin et al., 2015). Consequently, the following hypotheses were therefore proposed for this research:

H3: Operational responsiveness has a significant impact on firm performance.

H4: Strategic agility has a significant impact on firm performance through operational responsiveness.

Conceptual Framework

The conceptual framework had been drawn as shown in figure 1 below:

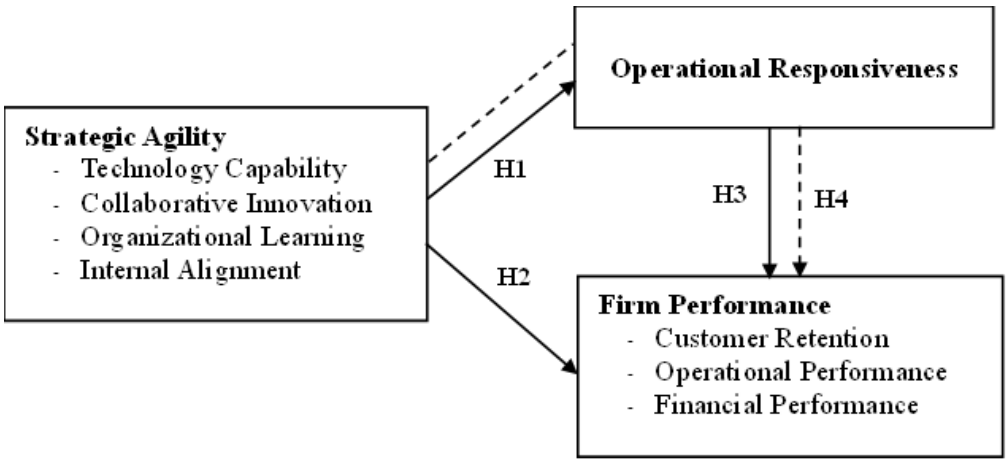

Figure 1 Conceptual Model

Research Methodology

Population and Samples

The population utilized in this research comprised importers, exporters, and logistics service providers in the Bangkok Metropolitan Region, including Bangkok, Samut Prakan, Nonthaburi, Pathum Thani, Nakhon Pathom, and Samut Sakhon; however, the exact population size was unknown. The sample size determination employed Cochran's (1953) formula, resulting in a calculated total sample of 385 participants. However, for structural equation modeling statistics, a minimum sample size of 400 is recommended by Yuan & Bentler (2000) and Savalei & Bentler (2005). Therefore, additional samples were collected to meet this criterion, resulting in a total sample size of 400 importers, exporters, and logistics service providers. Samples were selected using non-probability sampling with a purposive sampling technique.

Data Collection

The research methodology was quantitative research conducted by using survey method. The questionnaires were used as the research instrument for data collection, and they were distributed to importers, exporters, and logistics service providers in the Bangkok Metropolitan Region. The questionnaires were divided into four sections as follows. Section 1-3 were five-point Likert scale questions regarding strategic agility, operational responsiveness, and firm performance ranging from 1 = strongly disagree to 5 = strongly agree. Section 4 consisted of closed-ended questions regarding company general information, such as type of enterprise, total employee, and experience in this industry.

Data Analysis

Descriptive statistics used in quantitative data analysis included frequency, percentage, mean, and standard deviation. Due to hypothesis testing, inferential statistics used were Pearson's Product Moment Correlation Coefficient, and Partial Least Squares-Structural Equation Modeling (PLS-SEM).

Research Results

The results of the research showed that most of respondents were exporters (38.0%), had the total employees between 50-100 employees (58.8%), and had experience in this industry for approximately 6-10 years (51.0%). The research results further revealed that most of the respondents had agreements toward overall strategic agility at the agree level with the mean of

3.92, comprising average means of 3.82 on technology capability, 3.94 on collaborative innovation, 3.94 on organizational learning, and 3.98 on internal alignment, respectively. Besides, most of the respondents had agreements toward operational responsiveness at the agree level with the mean of 4.03. The respondents had agreements toward overall firm performance at the agree level with the mean of 4.02, comprising average means of 3.98 on customer retention, 4.00 on operational performance, and 4.08 on financial performance, respectively.

Validity and Reliability: The researchers had experts in related fields inspected the accurateness and consistency of contents and questions and recommended the improvement and revision. Cronbach's alpha and composite reliability were investigated to measure construct reliability as shown in Table 1.

Table 1 Factor Loading, Cronbach's Alpha Coefficient (CA), Composite Reliability (CR) and Average variance extracted (AVE) for Measurement Model

Latent Variable	Indicators	Loads	CA	CR	AVE
Strategic Agility (SA)			**0.97**	**0.97**	**0.91**
Technology Capability (TC)	TC1	0.90	0.86	0.91	0.78
	TC2	0.86			
	TC3	0.89			
Collaborative Innovation (CI)	CI1	0.90	0.85	0.91	0.77
	CI2	0.86			
	CI3	0.87			
Organizational Learning (OL)	OL1	0.90	0.88	0.92	0.74
	OL2	0.83			
	OL3	0.84			
	OL4	0.87			
Internal Alignment (IA)	IA1	0.90	0.84	0.90	0.76
	IA2	0.86			
	IA3	0.85			
Operational Responsiveness (OR)	OR1	0.83	**0.86**	**0.91**	**0.78**
	OR2	0.91			
	OR3	0.91			
Firm Performance (FPerf)			**0.94**	**0.94**	**0.89**
Customer Retention (PCR)	PCR1	0.83	0.84	0.90	0.76
	PCR2	0.88			
	PCR3	0.89			
Operational Performance (POP)	POP1	0.80	0.92	0.93	0.70
	POP2	0.83			
	POP3	0.85			
	POP4	0.87			
	POP5	0.85			
	POP6	0.84			
Financial Performance (PFP)	PFP1	0.82	0.89	0.92	0.65
	PFP2	0.77			
	PFP3	0.66			
	PFP4	0.79			
	PFP5	0.89			
	PFP6	0.90			

In Table 1, in terms of composite reliability, all factor loading values ranged from 0.66 to 0.91, which were more than the recommended value of 0.50; hence, the constructs in the research model are acceptable (Bagozzi & Yi, 2012). The Cronbach's alpha coefficient of each construct ranged from 0.84 to 0.97, meaning that all constructs are acceptable according to the recommended threshold value of 0.70 (Fornell & Larcker, 1981). The value of AVE was in the range of 0.65 to 0.91, which exceeded the minimum threshold value of 0.50, confirming convergent validity.

Table 2 Discriminant Validity

Variables	Strategic Agility	Operational Responsiveness	Firm Performance
Strategic Agility	0.95		
Operational Responsiveness	0.91	0.94	
Firm Performance	0.91	0.87	0.88

Note: The value in main diagonal were square roots of AVE.

In Table 2, the discriminant validity was tested, and the square roots of AVEs were more than the minimum threshold of 0.70, and all values were more than the correlations among the latent constructs (0.87-0.95); thus, it is valid.

Analysis of Structural Model and Hypothesis Testing

From the structural model in this research, the direct effects indicated that R^2 of the dependent variable, or firm performance was 0.839 indicating that 83.9% of firm performance variance was explained by independent variables. For the indirect effects, R^2 of the mediating variables as operational performance was 0.820.

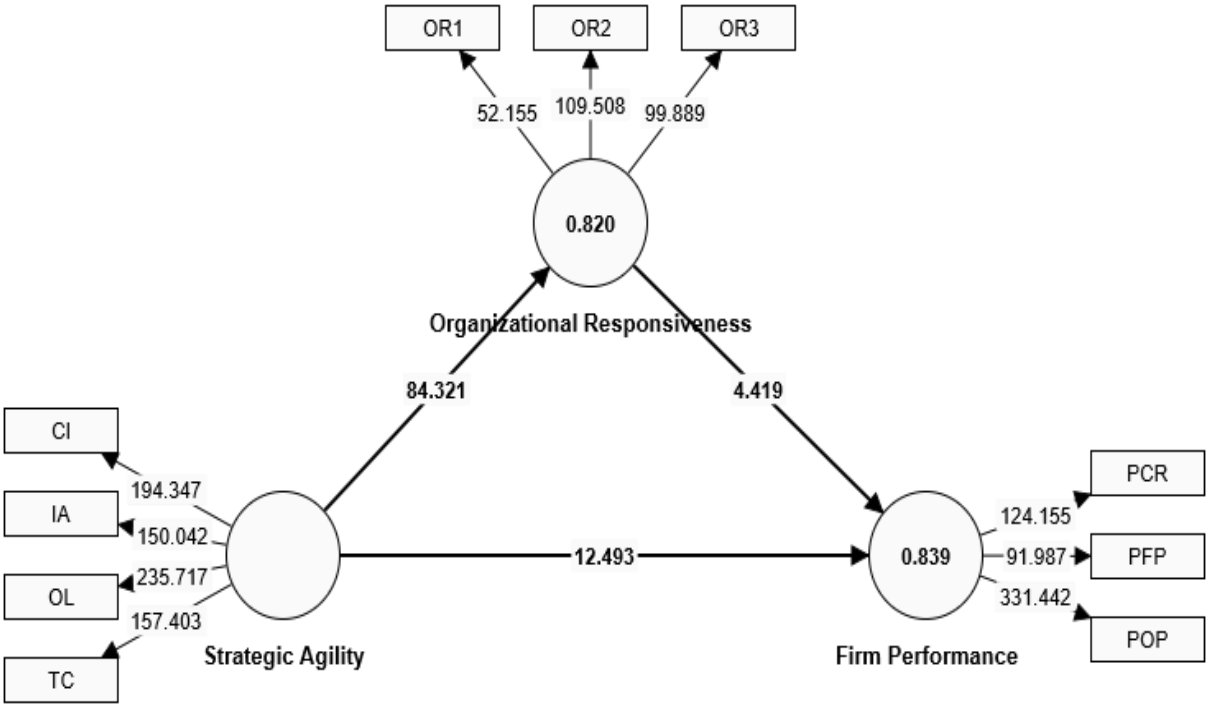

Figure 2 The results of testing the structural model of the theoretical framework

Table 3 Structural Model

Hypothesis	Standardized Estimate (β)	T Statistics	P-Values	Results
H1: Strategic Agility → Operational Responsiveness	0.905	84.321	0.000***	Supported
H2: Strategic Agility → Firm Performance	0.681	12.493	0.000***	Supported
H3: Operational Responsiveness → Firm Performance	0.253	4.419	0.000***	Supported
H4: Strategic Agility → Operational Responsiveness → Firm Performance	0.229	4.447	0.000***	Supported

Note: *p < .05; **p < .01; ***p < .001 (two-tailed test)

The results of structural model in Table 3 showed that strategic agility had the strongest positive effect on operational responsiveness ($\beta = 0.905$, $p < 0.001$) and firm performance ($\beta = 0.681$, $p < 0.001$), so H1 and H2 were supported. The results also revealed that operational responsiveness had positive and significant effect on firm performance ($\beta = 0.253$, $p < 0.001$), so H3 was supported. Finally, the results also revealed that strategic agility had positive and significant effect on firm performance through operational responsiveness ($\beta = 0.229$, $p < 0.001$), so H4 was supported.

Conclusion & Discussion

The results of this research, which examined H1 and H2, indicate that strategic agility has the most significant beneficial impact on both operational responsiveness and firm performance. Strategic agility is of utmost importance in import, export, and logistics firms. It enables these businesses to promptly adjust to shifting market dynamics, consumer needs, and regulatory requirements (Brannen & Doz, 2012). These firms may enhance their operational responsiveness and boost firm performance by swiftly adjusting and readjusting their business strategies (Tallon & Pinsonneault, 2011; Vickery et al., 2010). Strategic agility enables these businesses to recognize and exploit new possibilities, negotiate obstacles, and consistently enhance their operating procedures (Sud-on, 2014). Moreover, strategic agility enables import, export, and logistics firms to efficiently adapt to alterations in the competitive environment. In order to retain a strong position in the market, it is crucial to swiftly adapt and react to the emergence of new rivals and the continuous evolution of current competitors. Strategic agility allows firms to swiftly adapt their strategies and operations in order to counter competitive challenges, thereby helping them to sustain a competitive advantage in the market (Robinson & Stern, 1998; Doz & Kosonen, 2008). Consequently, this results in improved operational agility, which is crucial for satisfying client requirements and providing exceptional services (Sohail et al., 2023; Thomas et al., 2023).

Another point from the examination of H3 also demonstrated that operational responsiveness has a favorable and substantial impact on the performance of the firm. Operational responsiveness is crucial for organizations to adapt to the rapidly evolving business landscape (Nenavani & Jain, 2023; Santosa & Triwulandari, 2023). In the present globalized and interconnected world, businesses in this sector encounter evolving customer demands, market disruptions, and regulatory limitations. These organizations possess the ability to quickly adjust their supply chain, inventory, and transportation operations in order to meet the demands of the market. The adaptability is achieved via operational responsiveness (Nenavani & Jain, 2023). Besides, this adaptability enhances customer satisfaction, reduces costs, and enhances performance (Shin et al., 2015). Moreover, operational responsiveness plays a crucial role in

the effective management and mitigation of risks for import, export, and logistics firms. These businesses face geopolitical instability, natural disasters, and disruptions in their supply chains. By being responsive, organizations are able to promptly recognize and address potential hazards, formulate backup strategies, and minimize the impact of unforeseen events on their activities (Nenavani & Jain, 2023; Santosa & Triwulandari, 2023). Implementing proactive risk management strategies safeguards the firm's assets, reputation, resilience, and long-term viability (De Araújo Lima et al., 2020). Operational responsiveness enhances innovation and efficiency in import-export and logistics firms. Organizations that are operationally responsive may achieve a competitive advantage by continuously optimizing, embracing new technologies, and enhancing current procedures (Ando & Iriyama, 2009; Sahi et al., 2019). Operational responsiveness enhances ongoing improvement and effectiveness, leading to improved corporate performance via the use of advanced tracking and tracing technologies, optimization of warehouse management, and enhancement of supplier communication and collaboration (Sahi et al., 2019).

Furthermore, the findings of the H4 indicate that strategic agility has a positive and significant influence on firm performance through operational responsiveness. A firm characterized by strategic agility demonstrates greater proficiency in identifying and adjusting to changes in the market, consumer demands, and competitive forces (Lee et al., 2010). By combining strategic agility with operational responsiveness, firms are able to quickly and efficiently execute changes, thereby improving their capability to take advantage of opportunities and reduce risks. Consequently, this may result in enhanced firm performance in relation to increased revenue, profitability, and market competitiveness (Kuo et al., 2020; Novatiani, 2021; Panigrahi, 2019). Besides, operational responsiveness enables firms to consistently adjust and optimize their plans in response to immediate feedback and market advancements (Liew et al., 2022; Wang et al., 2018). The process of strategy adaptation and operational execution enables organizations to respond effectively to evolving market conditions, thereby improving their long-term competitiveness and performance (Doz & Kosonen, 2008; Herciu & Șerban, 2018).

Limitation

The researchers' focus in this research was on strategic agility, operational responsiveness, and firm performance from import, export, and logistics enterprises in the Bangkok Metropolitan Region ignoring those in other industries. Since the data were collected from 400 respondents using some specific enterprises, the generalization of the results could be limited. Other variables, such as organizational commitment, organizational leadership or organizational culture were not included in this research. As this research was cross-sectional, data were collected at one specific time point. In addition, the hypotheses were tested utilizing quantitative research approach, while the qualitative approach techniques such as in-depth interview or focus group were excluded from the research.

Recommendations

The findings from this research indicated that strategic agility had direct effects on operational responsiveness and firm performance, and also it showed indirect effects on firm performance though operational responsiveness as a mediating variable. Therefore, one practical implication of this research is the significance of allocating resources toward technology and innovation. Firms must constantly enhance their systems and procedures to guarantee their ability to promptly adapt to market fluctuations. This may include integrating sophisticated logistics management software, using data analytics to enhance visibility in the supply chain, and embracing emerging technologies like automation and artificial intelligence. Furthermore, the research might provide insights into the importance of organizational culture and leadership in promoting strategic agility and operational responsiveness. For a business to be agile and responsive, it is very important to have effective communication, cooperation, and empowerment of people. Leaders must establish a culture that fosters innovation, risk-taking,

and the ability to learn from setbacks. This is crucial for adjusting to a swiftly changing environment.

The research was limited to the only import, export, and logistics industry. In order to generalize the results, future research may consider extending the study to the other industries. This way can help the researchers to compare the results and conclude explicit phenomena. In addition, this research was purely on quantitative research, thus the other approaches such as mixed method or purely qualitative research can be possibly employed for future research. Lastly, this research was limited to variables covering strategic agility had direct effects on operational responsiveness and firm performance. Further research could extend to other variables such as organizational commitment, organizational leadership, or organizational culture.

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