The Effects of Dynamic Capabilities on Operational Performance: An Empirical Study from Manufacturing Enterprises in Vietnam

Huynh, Cong Minh and Vo, Long Kiet

Becamex Business School, Eastern International University, Binh Duong Province, Vietnam

15 November 2023

The Effects of Dynamic Capabilities on Operational Performance: An Empirical Study from Manufacturing Enterprises in Vietnam

Long Kiet Vo
Becamex Business School, Eastern International University, Binh Duong Province, Vietnam
Email: kiet.vo.bbs20@eiu.edu.vn

Cong Minh Huynh
Becamex Business School, Eastern International University, Binh Duong Province, Vietnam
Email: minh.huynh@eiu.edu.vn
ORCID ID: 0000-0001-8169-5665

Abstract

This research investigates the complex impact of supply chain dynamic capabilities through various dimensions (including cooperation, integration, agility, and responsiveness) on operational performance at the manufacturing enterprises in Vietnam. The results highlight the crucial importance of cooperation in promoting innovation, integration in facilitating decision-making processes, agility in navigating unpredictable circumstances, and responsiveness in serving the needs of customers. The aforementioned observations have significant ramifications for both the academic and industrial sectors. We offer valuable empirical support for researchers to conduct more in-depth inquiries, along with providing practical strategies for businesses to optimize their supply chain operations. This study also makes a valuable contribution to the developing discipline of supply chain management by elucidating the mechanisms through which dynamic capabilities drive operational excellence in a swiftly changing industrial environment.

Key words: *Collaboration capability, Integration capability, Responsiveness capability, Agility capability, Dynamic capability.*
JEL Classification: L10; L20; M10

1. Introduction

The function of supply chain management is crucial for organizations to maintain competitiveness in the contemporary and interconnected business landscape. The notion of supply chain dynamic capabilities has garnered significant interest as a pivotal element in augmenting operational performance and attaining a sustained competitive advantage (Wu & Pagell, 2010). Supply chain dynamic skills pertain to an entity's capacity to perceive and adapt to shifts in the market, foster innovation, and engage in collaborative efforts within the supply chain to enhance operational performance. The concept in question has received extensive scholarly attention on a worldwide scale, as well as within particular national settings, such as Vietnam as shown by Nguyen et al. (2023). This research underscores the importance of comprehending the effects of supply chain dynamic capacities on operational performance. Furthermore, the study conducted by Wagner and Bode (2008) demonstrates that the implementation of supply chain dynamic capabilities may augment an organization's capacity to respond to disturbances and manage risks. Hence, it is imperative for organizations to allocate resources towards the enhancement and fortification of their dynamic supply chain skills in order to sustain competitiveness within the contemporary and swiftly evolving business landscape.

Extensive global research has yielded significant empirical data that supports the existence of a favourable correlation between supply chain dynamic capabilities and operational performance. In a recent study conducted by Kareem and Kummitha (2020), the researchers examined the effects of supply chain dynamic capabilities on the operational performance of manufacturing enterprises in China. The research conducted by the authors revealed that companies with elevated degrees of dynamic capabilities demonstrated enhanced operational performance in several aspects, including cost efficiency, delivery speed, and customer happiness. In a similar vein, a research investigation carried out by Kache et al. (2019) within the European environment yielded comparable findings, demonstrating that companies with more robust supply chain dynamic capacities exhibited superior operational performance in relation to flexibility, responsiveness, and innovation. The aforementioned findings underscore the need of cultivating and augmenting the dynamic capacities of supply chains in order for enterprises to get a competitive edge and foster sustainable growth within the current highly dynamic business landscape. Furthermore, Munir, Jajja, Chatha, and Farooq (2020) conducted a study to examine the correlation between dynamic skills and operational success within the specific context of

Spanish manufacturing enterprises. The results of the study demonstrated a significant correlation between dynamic capabilities and operational performance metrics, namely in terms of productivity and quality.

It is crucial to comprehend the correlation between supply chain dynamic capabilities and operational performance, particularly within the Vietnamese context. Vietnam, being a nation with a rapidly growing economy and a highly sought-after destination for foreign investments, accentuates the significance of this understanding. The expansion of Vietnam's manufacturing industry may be attributed to several factors such as globalization, evolving client tastes, and intensified rivalry. Research undertaken in Vietnam has provided insights into the influence of supply chain dynamic capabilities on operational performance within the unique setting of this region. Phan et al. (2019) conducted a study to investigate the correlation between dynamic skills and operational performance within the context of Vietnamese manufacturing enterprises. The results of their study revealed a statistically significant and beneficial relationship between dynamic capabilities and operational performance indicators, including cost savings, delivery time, and flexibility. Nevertheless, Vietnam continues to face certain deficiencies, such as insufficient investment in technology and innovation, restricted availability of financial resources, and inadequate infrastructure. The aforementioned problems have the potential to impede the capacity of Vietnamese manufacturing enterprises to effectively use dynamic capabilities and attain maximum operational performance.

Despite the fact that research has been conducted on the connection between supply chain dynamic capabilities and operational performance, there is a knowledge gap in regard to this connection specifically in Vietnam. By carrying out this research, we hope to make a significant contribution to the existing body of knowledge and offer insightful new perspectives on the influence of supply chain dynamic capabilities on operational performance in the context of Vietnam (Hadrawi, 2019). In addition, the findings of this study can potentially inform supply chain management practices in Vietnam and assist companies in improving their operational performance. Both of these benefits can be gained from the findings of this study. This research has the potential to serve as the foundation for further research on the subject in other economies that are still emerging.

It has been demonstrated that supply chain dynamic capabilities have a positive impact on operational performance indicators like cost efficiency, delivery speed, and customer satisfaction

(Suharto, 2023). We can determine how businesses in Vietnam can improve their operational performance by developing and enhancing these capabilities if we investigate the relationship between supply chain dynamic capabilities and operational performance in Vietnam and find out how the two are related to one another. Specifically, the investigation will focus on Vietnam.

A sustainable competitive advantage can be achieved for organizations through the implementation of efficient supply chain management and the cultivation of dynamic capabilities (Kazmi & Ahmed, 2021). We will be able to identify business strategies that companies can implement to achieve a competitive advantage in the market if we investigate the impact that Vietnam's dynamic capabilities of supply chains have on operational performance. In addition, the implementation of these tactics can assist businesses in better adjusting to shifts in the market while simultaneously improving their overall performance. For instance, businesses may decide to make investments in technology and automation in order to streamline the operations of their supply chains and increase operational efficiency.

To maintain their competitive edge in today's rapidly evolving business environment, companies need to be quick on their feet and flexible in their thinking. Businesses are given the ability to detect and react to shifts in the market, as well as to innovate and collaborate within the supply chain, thanks to supply chain dynamic capabilities (Naway & Rahmat, 2019). By analyzing the impact that dynamic capabilities of the supply chain have on operational performance in Vietnam, we can gain a better understanding of how businesses can successfully adapt to the rapidly changing economic environment in the country.

Existing research has provided useful insights into the impact that dynamic capabilities of supply chains have on operational performance; however, there are still gaps that need to be addressed. To begin, the vast majority of research have concentrated their attention on the broad relationship that exists between dynamic capabilities and operational performance, while ignoring the particular aspects and indications that pertain to operational performance. In order to address this gap, research conducted by Yang, et al. (2022) explored the influence of supply network flexibility on operational performance. Supply chain flexibility is a critical component of dynamic capabilities. According to the findings of the study, there is a favorable connection between supply chain flexibility and operational performance metrics such as cost effectiveness, customer service, and delivery reliability. In a similar vein, Eckstein et al. (2014) conducted research in which they investigated the effect that operational performance has on supply chain integration, which is

another facet of dynamic capacities. The research showed that there is a beneficial connection between supply chain integration and operational performance indicators like product quality and delivery reliability.

Furthermore, the majority of the available research has focused on analyzing the impact of supply chain dynamic capabilities on operational performance in a worldwide context. On the other hand, unique country contexts, such as that of Vietnam, have received a relatively small amount of attention. It is crucial to investigate the connection between dynamic skills and operational performance within the context of this particular setting in Vietnam because the country is home to a number of components, including cultural aspects, market dynamics, and unique traits. For example, Tuan et al. (2010) conducted a study in the setting of Vietnam and showed that supply chain dynamic capacities positively influenced operational performance. This influence extended to dimensions of performance such as cost management, responsiveness, and quality. In addition, a study that was conducted by Tran et al. (2017) looked into the effect that collaboration within supply chains had on the operational performance of Vietnamese manufacturing companies. Supply chain collaboration is a crucial component of dynamic capacities. According to the research, there is a beneficial connection between supply chain and according to the findings of the research, there is a beneficial connection between supply chain and operational performance. This is due to the fact that businesses that engage in collaborative relationships with both their customers and their suppliers have a tendency to have better operational performance. According to the findings of the study, collaboration had a good impact on many different dimensions of operational performance. These aspects included reduced costs, greater quality control, and increased responsiveness to the needs of customers. This demonstrates how important it is to cultivate good relationships within supply chains in order to achieve optimal performance in operational areas.

In this study, we examine the complex impact of supply chain dynamic capabilities through various dimensions (including cooperation, integration, agility, and responsiveness) on operational performance at the manufacturing enterprises in Vietnam. Specifically, we focus on Binh Duong province, recognized as Vietnam's industrial hub, which garners significant interest from scholars in the field of business management (Dam and Huynh, 2022; Ho and Huynh, 2022; Nguyen and Huynh, 2022; Nguyen and Huynh, 2023; Phan and Huynh, 2023). In addition, we evaluate these influential factors of dynamic capability in contributing to the operational performance in

manufacturing industry in Vietnam. Results from our study are expected to have significant ramifications for both academia and industry Initially, we offer valuable empirical support for researchers to conduct more in-depth inquiries, along with providing practical strategies for businesses to optimize their supply chain operations. Additionally, this study contributes significantly to the evolving field of supply chain management by illuminating the intricate ways in which dynamic capabilities foster operational excellence in a rapidly evolving industrial landscape.

2. Literature review

2.1. Review of the previous studies/ theories

2.1.1 Overview of previous studies/ theories

The link between supply chain dynamic capabilities and operational success has been the subject of a great deal of research. By reviewing the available research, Vanpoucke et al. 2014 concluded that certain supply chain management strategies positively associated with competitiveness. In the world of supply chain management, the Resource-Based View (RBV) theory highlights how having unique skills and strategies, especially dynamic abilities in managing supply chains, can really boost a company's success. This theory says that companies with these special capabilities can stand out and do better than others. The research backs this up, saying that when companies use smart supply chain strategies, especially those backed by dynamic capabilities, they become more competitive. So, companies that work on building and using their special abilities are more likely to do better than their rivals and have long-lasting success. Hence, the significance of dynamic capabilities and other supply chain management strategies in enhancing company outcomes was underlined.

In a similar case, studies have shown that companies with robust supply chain dynamic capabilities have a greater chance of surviving market shifts and shocks examined the effect of dynamic capabilities in the supply chain on operational performance using a capability lifecycle perspective. This research provides more support for the hypothesis that more dynamically capable companies also have stronger operational performance.

Supply chain KPIs have also been researched in relation to the impact of dynamic capabilities. (Ju et al., 2016) investigated the link between supply chain dynamic capacities and

operational performance in the setting of organizational ambidexterity. Think of the Ambidexterity Theory as a balancing act. It says that organizations need to balance trying new things (exploration) and doing things they already know well (exploitation) to do their best. When it comes to supply chains, this means that having dynamic capabilities helps companies find the balance between being innovative and being efficient. The research supports this idea, showing that having this balance, called organizational ambidexterity, helps connect dynamic supply chain skills to how well a company performs. As a result, businesses that can find this balance between adapting to changes and using their resources well are likely to do really well. Organizational ambidexterity was determined to be the medium via which the favorable effects of supply chain dynamic capabilities on operational performance may be realized.

Wang, Chen, and Gong (2020) also investigated the impact of supply chain management strategies on organizational performance including Supply Chain Management Theories, and they are all about how well a company manages its supply chain activities. These theories say that doing this well is super important for being really good and successful. They suggest strategies like being flexible, working together, and being responsive in the supply chain. The research agrees with these ideas, showing that when companies use these strategies, especially when they use dynamic capabilities, they do better in many ways. This means that companies that put these ideas into action are in a good position to improve how they work and how well they do compared to others. Without any doubt, effective supply chain management strategies have been linked to increased operational performance and a competitive advantage, with dynamic capabilities playing a central role.

Studies have been carried out on a worldwide, regional, and even neighborhood level. Competitive Advantage Theories are like the secret strategies of a business. They talk about how a company can do things differently and stand out in the market. The research agrees with these ideas, showing that when companies use smart supply chain strategies, like dynamic capabilities, they can really stand out from the crowd. This is like having a special card that makes you unique, and it means these companies can do better than their competition. So, by using these smart strategies in their supply chain, companies can be special and do well in their market. To illustrate the universal applicability of supply chain management solutions, Fu et al. 2022 contextualized their research on a global scale. In addition, research shows that businesses who use supply chain management approaches see a rise in productivity, savings, and happy clients. Businesses may see

increased revenues and sustained success as a result of these advantages. While studies on Vietnam are only getting started, they are growing rapidly. The impact of supply chain management strategies on Vietnamese enterprises were studied by Tencati, Russo, and Quaglia in 2010 based on Organizational Effectiveness and Efficiency Theories These and it makes a company work-well and be efficient. They say that if a company manages its processes and operations well, it can get what it wants. The research agrees, showing that by improving supply chain management, especially using dynamic capabilities, companies can work better and achieve their goals. The research is focusing on Binh Duong province in Vietnam, where businesses can use these insights to improve how they manage their supply chains and how they do in general. This means that by following these ideas, businesses can become more effective and productive in their operations. The importance of supply chain skills was underlined via their research into the Vietnamese environment, where they found a positive correlation between supply chain management techniques, operational performance, and customer happiness.

Even with the insights gained from this research, the impact of supply chain dynamic capabilities on operational performance in Binh Duong province, Vietnam remains little understood. As far as we can tell, there is a dearth of literature that specifically addresses this link. This study aims to rectify the dearth of literature on the subject by investigating the correlation between supply chain agility and organizational effectiveness in Vietnam's Binh Duong province. This research has the potential to help companies in the area improve their supply chain management and overall productivity by using the lessons learned.

2.1.2 Fundamental concepts

2.1.2.1 Dynamic Capability

In today's extremely unpredictable and competitive business climate, firms absolutely require dynamic supply chain skills in order to successfully adapt and survive in the market. These competencies make it possible for firms to successfully adapt to shifts in the market, demands from customers, and disruptions, which ultimately leads to enhanced operational performance and a sustained advantage over other businesses. In addition, having expertise in a dynamic supply chain enables businesses to boost customer satisfaction while simultaneously optimizing their inventory management and lowering their expenses. If a company lacks these competencies, there

is a significant danger that it would slip behind its competitors and lose market share. In light of this, making investments in the development and improvement of supply chain competencies is essential for achieving long-term success in the competitive marketplace of today.

Dynamic supply chain skills give businesses the ability to swiftly modify their operations in response to shifting market circumstances and the demands of their customers. This enables businesses to remain competitive in today's global economy. Supply chain flexibility, which is a crucial element of dynamic capabilities, can positively affect operational performance, according to the findings of a study by Wieland et al. (2016). These positive influences include a reduction in lead times and an increase in delivery reliability.

Fostering Collaboration and Integration Throughout the Supply Chain Network Dynamic supply chain capabilities require creating an environment that encourages cooperation and integration across all links of the supply chain. According to the findings of research carried out by Patabandige et al. (2022), collaborative practices, which are made possible by dynamic capabilities, improve operational performance among supply chain partners by facilitating better information exchange, coordination, and decision-making collectively.

Innovation and Adaptability: The possibilities offered by a dynamic supply chain encourage innovation and flexibility, which in turn makes it possible for businesses to launch new goods, procedures, and technology. According to the findings of a study conducted by Teece (2018), dynamic skills play an important part in fostering innovation, improving operational performance, and providing firms with the ability to obtain a competitive edge in dynamic marketplaces.

Risk Management and Resilience: Dynamic supply chain skills contribute to both the risk management and the resilience of supply chains. According to research carried out by Kareem et al. (2020b), the significance of dynamic skills in improving operational performance by successfully managing supply chain risks, minimizing interruptions, and maintaining business continuity was brought to light.

In conclusion, an organization's operational performance may benefit greatly from dynamic supply chain capabilities since they allow for more adaptability, responsiveness, collaboration, innovation, and resilience. When companies put resources into building and improving these skills, they improve their operations, give themselves a leg up in the market, and

set themselves up for sustainable growth in the face of a dynamic and competitive business environment.

2.1.2.2 Operational performance

Companies in today's fast-paced economy work tirelessly to gain a competitive edge and improve their overall performance (Rajaguru and Matanda, 2019). An organization's Capability to compete and profit in the market is directly tied to the quality of its internal operations, which is measured by its operational performance (Hong et al., 2019). The successful translation of operational capabilities into competitive advantages of businesses is just one aspect of operational performance. According to Ju et al., 2016; Saleh, et al., 2018; Gambi et al., 2015, it may be evaluated in terms of productivity, quality, cost, delivery, flexibility, and customer satisfaction. In order to pinpoint problem areas and make the most efficient use of available resources, businesses must regularly evaluate their operational performance. Comparing the company's performance to that of its peers and the industry average might shed light on how it stands in the marketplace. We are now making an effort to learn about the connections between and effects on operational performance from dynamic supply chain capabilities.

2.2. Hypothesis development

2.2.1 Supply chain collaboration capability's contribution to operational performance

Knowledge acquisition, knowledge development, learning Capability, risk sharing, and cooperative communication are advantages of supply chain cooperation that previous research has suggested (Cao et al., 2010). Using a collaboration index, Simatuang and Sridharan (2005) discover that supply chain cooperation has a favorable effect on operational performance. A collaborative advantage, according to Cao and Zhang (2011), helps supply chain partners increase synergies and provide better results. According to Jimenez et al. (2018), working with third parties in the supply chain encourages both little and big breakthroughs. They also imply that environmental and social sustainability are additional advantages of supply chain collaboration beyond operational and financial success. Particularly, supply chain collaboration may lessen waste, boost resource utilization, and enhance working conditions for employees. Stank et al. (2001) argued that collaborations both within and outside of an organization are necessary for optimal performance. Working together may improve profits, cut down on expenses, and boost

communication across departments. For this reason, the following hypotheses are tested in the present investigation:

H1: Collaboration capability has a significant positive impact on operational performance.

2.2.2 Supply chain integration capability's contribution to operational performance

According to Chen et al. (2009) & Wu et al. (2009), supply chain integration skills developed with organizational procedures have a high probability of helping a company accomplish its performance goals (2006). This is because enhanced resource coordination and better decisions can result from increased communication and collaboration across many departments and partners made possible by supply chain integration. Delivering higher-quality goods in shorter amounts of time may also assist cut costs, boost productivity, and increase happy customers. In addition, a company's supply chain integration competency is its ability to restructure its processes and resources in order to improve its operational performance. Oh et al. (2016) claim that supply chain integration boosts firm performance by mitigating the "bullwhip effect" in the supply chain and facilitating the rapid adaptation of businesses to shifting market conditions. Flynn et al. (2010) provide a thorough analysis of how supply chain integration improves business operations. They found a robust relationship between supply chain integration and financial and operational success, suggesting that companies which make the effort to do so are more likely to succeed financially and operationally. In addition, supply chain integration may improve communication and decision-making by increasing collaboration across different divisions within an organization. When compared to supplier integration, the link between internal and customer integration and improved performance was shown to be greater. Thus, we propose the following:

H2: Integration capability has a significant positive impact on operational performance.

2.2.3 Supply chain agility capability contributes to operational performance

Focusing on supply chain risk can help businesses become more flexible and resilient in today's unpredictable business climate (Tang and Tomlin, 2008). In order to reduce risk and guarantee continuous operations, an organization's Capability to integrate its suppliers is just as important as its ability to integrate its employees and its customers. To improve operational performance and

maintain market competitiveness. The responsiveness of a business to changes in the market is directly tied to the flexibility of its supply chain. With this ability, a business can better respond to opportunities and protect itself from threats in an increasingly uncertain marketplace (Van Hoek et al., 2001). Companies must place a high value on supply chain management and invest in tools that promote real-time visibility and communication throughout the supply chain network. Companies may do more to prepare for disruptions and keep their supply chains robust by building connections with their suppliers and developing backup plans. In 2000, Eisenhardt and Martin found. Increasing a company's supply chain's agility capability, or its responsiveness to changes, has been shown to have positive consequences in a number of studies according to (Oh et al., 2018; Chakravarty et al., 2013; Blome et al., 2013). In addition, Vinodh et al. (2011) contend that an agile supply chain can improve operational performance by allowing for a more rapid response to external supply disruption, which has major advantages for the company's internal operations, including a decrease in quality and a quickening of delivery times. Thus, we postulate that:

H3: Agility capability has a significant positive impact on operational performance.

2.2.4 Supply chain responsiveness contributes to operational performance

Businesses in the current era place a premium on the agility of their supply chains to respond to changing market conditions (Williams et al., 2013). This is especially true in sectors characterized by intense rivalry and frequently shifting consumer preferences. Thus, businesses that invest in agility capabilities are more likely to achieve success in the marketplace. The responsiveness of a company's supply chain may be gauged by its ability to adapt quickly to shifts in demand and supply, customer demand, production and delivery volumes, and product mix, volume, and delivery. Businesses that are able to respond swiftly and adapt to changing circumstances are better able to weather the effects of calamities like natural disasters and worldwide pandemics on their operations and their consumers. Companies may gain an edge in today's fast-paced business climate by prioritizing agility investments, allowing them to respond quickly to market changes and maintain market dominance. We think these adjustments will lead to enhanced performance outcomes including decreased manufacturing costs, increased customer satisfaction, and decreased turnaround times (Yu et al., 2016). The positive impacts of a responsive supply chain on business outcomes have also been demonstrated by studies (Mandal et al., 2016; Prajogo and Olhager, 2016). Thus, we postulate that:

H4: Supply chain responsiveness capability has a significant positive impact on operational performance.

2.3. Research framework

Based on the above hypotheses and Kareem et al. (2020), we propose the research framework as follows:

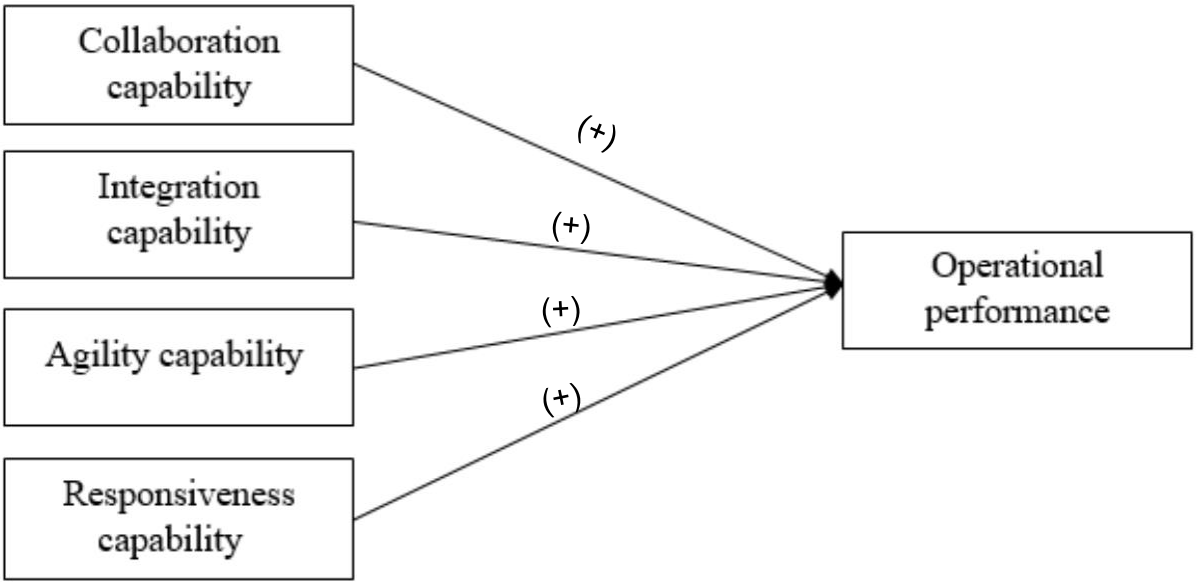

Figure 1 Conceptual model, adopted from Kareem et al. (2020).

3. Data and research methodology

The quantitative method is used in this study, which is based on a questionnaire survey and then analyzes to determine the effect of various dimensions of supply chain dynamic capabilities such as cooperation, integration, agility, and responsiveness on operational performance at the manufacturing enterprises in Vietnam, focusing on Binh Duong province. We opt for convenience sampling due to its ease of access and proximity. This approach offers numerous benefits such as simplicity, cost-effectiveness, and widespread availability.

Our data collection involves 232 manufacturing enterprises located in Binh Duong province. We employ a dual method, utilizing online Google Forms and face-to-face surveys, to gather information. The survey comprises two main sections. The initial section encompasses 5 questions centered on participants' personal details, encompassing Job title, Industry categories, Age of firm, Sales, and Number of employees. The subsequent section includes 26 questions

aiming to gauge both dependent and independent variables. To assess agreement and disagreement, we utilize a five-point Likert scale, ranging from 1 (indicating strong disagreement) to 5 (representing strong agreement). Tables 1, 2, and 3 exhibit the survey questionnaire sections pertaining to demographic variables, dependent, and independent variables, respectively.

Table 1. Demographic variables

No	**Variables**	**Code**	**Item Measurement**	**Scale**
1	Job title	JT	What is your job title?	1= "Supply chair supervisors” 2- "Supply chain managers" 3- "Supply chain directors" 4-"Others"
2	Industry categories	IC	What is your industry category?	1= “Apparel manufacturing" 2="Food manufacturing" 3= “Furniture manufacturing" 4= “Others"
3	Age of firm	AOF	What is your age of firm?	1= "Less than 5 years" 2= “6 to 10 years" 3= “11 to 15 years" 4= "More than 15 years"
4	Sales (million USS)	SA	How much sales does your company generate?	1= “Less than $10” 2= “$11 to $50” 3= “$51 to $100” 4= “$101 to $200” 5- " More than $200"

5	Number of employees	NOE	How many employees do your company have?	1= “Less than 50 workers" 2= “50 to 100 workers" 3= “101 to 200 workers" 4= “201 to 500 workers" 5= " More than 500 workers"

Table 2. Dependent variable

Operational performance (OP)			
No	**Code**	**Item Measurement**	**Source**
1	OP1	Our company’s efficiency in meeting needs and expectations.	Rajaguru & Matanda, (2001), Yu et al. (2018), and Flynn et al. (2010).
2	OP2	Our company’s efficiency in adapting to fluctuating consumer demand.	
3	OP3	Our company’ efficiency of always making deadline	
4	OP4	Our company’s effectiveness in producing work at a constant, high standard.	
5	OP5	Customers will notice a faster order processing time	

6	OP6	Lowering overhead expenses	
7	OP7	Lowering in inventory costs	

Table 3 Independent variables

No	Code	Item Measurement	Source
Collaboration Capability (CC)			
1	CC1	We have a partnership agreement at company.	Rajaguru & Matanda, (2017), Aslam et al. Ju et al. (2016), (2018), Oh et al. (2019), Wu et al. (2006), and Hong et al. (2019).
2	CC2	We work closely with partners to make decisions together.	
3	CC3	We work closely with partners to solve problems together.	
4	CC4	We have strong relationships with our business partners.	
5	CC5	We create strategic plans in conjunction with the organizations that we work with.	
Integration capability (IC)			
1	IC1	We ensure that data are standardized with partners	Rajaguru & Matanda, (2017),

2	IC2	We assure information system integration with partners	Aslam et al. Ju et al. (2016), (2018), Oh et al. (2019), Wu et al. (2006), and Hong et al. (2019).
3	IC3	We eliminate repetition with associates.	
4	IC4	We guarantee compatibility of data with partners	
4	IC5	We consistently forecast and schedules activities with our partner	
Agility capability (AC)			
1	AC1	We adapt services or products swiftly to changing client needs	Rajaguru & Matanda, (2017), Aslam et al. Ju et al. (2016), (2018), Oh et al. (2019), Wu et al. (2006), and Hong et al. (2019).
2	AC2	We fast to respond to changes in the market	
3	AC3	We react to significant increases and decreases in demand quickly	
4	AC4	We adjust product portfolio as per market requirement	
5	AC5	We respond to competitors' strategy change more quickly than our competitors	
Responsiveness capability (RC)			

1	RC1	We respond quickly to changing consumer needs	Rajaguru & Matanda, (2017), Aslam et al. Ju et al. (2016), (2018), Oh et al. (2019), Wu et al. (2006), and Hong et al. (2019).
2	RC2	We ensure feedback to suppliers more quickly and effectively	
3	RC3	We response to the quality strategy of competitors more quickly and effectively	
4	RC4	We respond quickly to changing scope of supply	
5	RC5	We responsee to the risk of the supply chain more quickly and effectively.	

4. Results and discussions

4.1. Reliability test

To ensure consistency and evaluate the measurement of dimensions within both independent and dependent variables, Cronbach's alpha will be utilized for a reliability test. A desirable correlation between measurements and variables typically falls within the range of 0.60 to 0.94 for alpha (Taber, 2018). Any measurement displaying an alpha value below 0.60 will be considered unreliable and subsequently eliminated. In addition, according to Field (2009), the values of Corrected Item-Total Correlation are the correlations between each item and the total score, and must be 0.3 or higher. The reliability test results for all variables can be found in Tables 4a-b, 5a-b, 6a-b, 7a-b, and 8a-b.

4.1.1. Operational Performance (OP)

Table 4a. Reliability Statistics for OP

Cronbach's Alpha	N of Items
.879	7

Table 4b. Item-Total Statistics for OP

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Squared Multiple Correlation	Cronbach's Alpha if Item Deleted
OP1	21.61	14.836	0.663	0.455	0.862
OP2	21.61	15.087	0.640	0.415	0.865
OP3	21.65	15.016	0.620	0.406	0.868
OP4	21.56	14.889	0.692	0.484	0.858
OP5	21.55	14.855	0.688	0.476	0.859
OP6	21.58	15.068	0.663	0.469	0.862
OP7	21.48	15.203	0.681	0.485	0.860

The provided tables present the data pertaining to Cronbach's alpha and item-total statistics of operational performance. The results indicate that Cronbach's alpha coefficient (0.879) above the threshold of 0.6, suggesting a high level of internal consistency. Additionally, all items exhibit adjusted item-total correlations beyond 0.3, further supporting their reliability. Thus, the Operational Performance successfully fulfils the criterion of reliability testing, and no items have been excluded.

4.1.2. Collaboration Capability (CC)

Table 5a. Reliability Statistics for CC

Cronbach's Alpha	N of Items
0.886	5

Table 5b. Item-Total Statistics for CC

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Squared Multiple Correlation	Cronbach's Alphaif Item Deleted
CC1	11.99	12.190	0.716	0.513	0.864
CC2	11.90	12.289	0.698	0.490	0.868
CC3	12.05	11.720	0.771	0.602	0.851
CC4	11.94	11.936	0.705	0.502	0.867
CC5	11.94	11.863	0.736	0.555	0.859

The Cronbach's Alpha of CC is 0.886, higher than 0.6 and all the five items have the Corrected Item-Total Correlation bigger than 0.3. Therefore, the CC variables can be used in factor analysis.

4.1.3. Integration Capability (IC)

Table 6a. Reliability Statistics for IC

Cronbach's Alpha	N of Items

.897	5

Table 6b. Item-Total Statistics for IC

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Squared Multiple Correlation	Cronbach's Alpha if Item Deleted
IC1	12.98	12.800	0.761	0.591	0.871
IC2	12.97	13.107	0.716	0.521	0.881
IC3	12.91	12.831	0.787	0.628	0.865
IC4	12.93	13.199	0.705	0.507	0.883
IC5	12.96	12.929	0.760	0.581	0.871

The Cronbach' Alpha of Delivery quality is 0.8974, being higher than 0.6; and all the five items have the Corrected Item-Total Correlation bigger than 0.3. Therefore, the IC variables will be used in factor analysis.

4.1.4. Agility Capability (AC)

Table 7a. Reliability Statistics for AC

Cronbach's Alpha	N of Items
.756	5

Table 7b: Item-Total Statistics for AC

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Cronbach's Alpha if Item Deleted
AC1	15.18	8.214	.571	.687
AC2	15.13	8.848	.477	.723
AC3	15.21	8.908	.534	.702
AC4	15.12	8.936	.506	.712
AC5	15.12	8.771	.500	.714

The Cronbach's Alpha of AC is 0.756 and bigger than 0.6. As well as all the five items of AC have bigger than 0.3, so all the items can be used in factor analysis.

4.1.5. Responsiveness Capability (RC)

Table 8a. Reliability Statistics for RC

Cronbach's Alpha	N of Items
.899	5

Table 8b. Item-Total Statistics for RC

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Squared Multiple Correlation	Cronbach's Alpha if Item Deleted
RC1	13.12	13.662	0.762	0.583	0.874
RC2	13.18	13.863	0.709	0.508	0.886
RC3	13.13	13.793	0.780	0.619	0.871
RC4	13.18	13.950	0.707	0.507	0.886
RC5	13.17	13.318	0.793	0.634	0.867

The Cronbach's Alpha of RC is 0.899, being bigger than 0.6. Moreover, the Corrected Item-Total Correlations of 5 items are bigger than 0.3 so all the items will be analyzed in EFA analysis.

4.2. Exploratory Factor Analysis (EFA)

According to Leech et al. (2005), researchers have the flexibility to establish the criterion for "high" loadings in Exploratory Factor Analysis (EFA) within a range of 0.30 to 0.50. In this study, items with loadings equal to or exceeding 0.50 were selectively maintained for analysis. Hence, during the processing of data using SPSS, any factor loading over 0.50 would be presented in the output.

Furthermore, it is worth noting that according to Hair et al. (1995), it is considered permissible to remove two adjacent factor loadings when the resulting value exceeds 0.3. Furthermore, the KMO coefficient is employed to assess the appropriateness of factor analysis, with the requirement that the KMO value falls between the range of 0.5 to 1 ($0.5 < KMO < 1$). In the context of Bartlett's Test, it is important to note that the significance level (Sig) should not exceed a certain threshold.

According to Taherdoost et al. (2014), a significance level of less than 0.05 indicates statistical significance. According to the study conducted by Leech et al. (2005), the Total variation Explained table provides information on the distribution of variation among potential causes. Each component must have an eigenvalue that is equal to or greater than 1. If the eigenvalue is less than 1, it is considered to be rejected. Furthermore, it is imperative that the cumulative percentage of variation attains a minimum threshold of 50%. Given the nature of the study model that aims to

examine the mediation effect, it is necessary to include all variables in the exploratory factor analysis test simultaneously.

4.2.1. Dependent variable (Operational Performance)

Table 9a. KMO and Bartlett's Test for the dependent variable

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		0.911
Bartlett's Test of Sphericity	Approx. Chi-Square	680.107
	df	21
	Sig.	0.000

Based on the provided table, the KMO value is 0.911, exceeding the threshold of 0.5. Additionally, the Bartlett's Test of Sphericity (Sig.) yields a value of 0.000, indicating statistical significance below the 0.05 threshold. Consequently, the operational performance variable is deemed suitable for exploration using factor analysis. This also implies that the items exhibit a correlation with one another within a certain factor.

Table 9b. Total Variance Explained for the dependent variable

	Initial Eigenvalues			Extraction Sums of Squared Loadings		
Component	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	4.069	58.132	58.132	4.069	58.132	58.132
2	0.631	9.011	67.143			
3	0.532	7.607	74.749			
4	0.523	7.471	82.221			
5	0.451	6.447	88.667			
6	0.422	6.033	94.700			
7	0.371	5.300	100.000			

Extraction Method: Principal Component Analysis.

There is over 1 component with Eigenvalues 1 and variance extracted is 58.132% which is higher than 50%. Therefore, the interpretation of factors is relatively good.

Table 9c. Component Matrix[a] for the dependent variable

Component Matrix[a]	
	Component
	1
OP4	0.786
OP5	0.782
OP7	0.778
OP6	0.764
OP1	0.761
OP2	0.742
OP3	0.723
Extraction Method: Principal Component Analysis.	
a. 1 components extracted.	

In Table 9c, 7 items are collected into 1 component, all the observed variables have Factor Loading coefficient greater than 0.5. Therefore, all items above used for measuring satisfaction are accepted and can be used for next steps.

4.2.2. Independent variables (CA, IC, AC, RC)

Table 10a. KMO and Bartlett's Test for Independent variables.

KMO and Bartlett's Test		
Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		0.929
Bartlett's Test of Sphericity	Approx. Chi-Square	2745.490
	df	190
	Sig.	0.000

It can be seen in Table 10a that the KMO value of independent variables is 0.929. In addition, the Sig value of Bartlett’s test of Sphericity is 0.000 which is smaller than 0.05. Therefore, this outcome of the independent variables in appropriate for conducting EFA

Table 10b. Total Variance Explained Independent variables.

Extraction Method: Principal Component Analysis.

Total Variance Explained									
	Initial Eigenvalues			Extraction Sums of Squared Loadings			Rotation Sums of Squared Loadings		
Component	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	8.170	40.852	40.852	8.170	40.852	40.852	3.574	17.870	17.870
2	2.319	11.593	52.445	2.319	11.593	52.445	3.552	17.760	35.630
3	1.939	9.694	62.139	1.939	9.694	62.139	3.493	17.467	53.096
4	1.627	8.133	70.272	1.627	8.133	70.272	3.435	17.176	70.272
5	0.543	2.715	72.987						
6	0.510	2.551	75.538						
7	0.487	2.433	77.972						
8	0.447	2.235	80.207						
9	0.444	2.218	82.425						
10	0.413	2.066	84.490						
11	0.396	1.979	86.469						
12	0.384	1.921	88.390						
13	0.350	1.752	90.142						
14	0.333	1.667	91.809						
15	0.315	1.577	93.386						
16	0.307	1.537	94.922						
17	0.294	1.468	96.390						
18	0.259	1.294	97.684						
19	0.238	1.191	98.875						
20	0.225	1.125	100.000						

The findings from the exploratory factor analysis (EFA) indicate that the first four components have Eigenvalues greater than 1, specifically at 8.170, 2.319, 1.939, and 1.627, respectively. This pattern is consistent with the number of variables that were included in the study. Furthermore, it is worth noting that the Total Variance Explained exceeds the threshold of 50% (specifically, 70.272% > 50%), thus surpassing the prescribed standard and being deemed acceptable. Hence, it may be inferred that four distinct components account for a significant proportion of the overall variation, specifically 70.272%.

Table 10c. Rotated Component Matrix[a] for Independent variables

Rotated Component Matrix[a]				
	Component			
	1	2	3	4
RC3	0.831			
RC5	0.814			
RC1	0.782			
RC2	0.771			
RC4	0.767			
IC1		0.822		
IC3		0.808		
IC4		0.767		
IC2		0.758		
CC3			0.819	
CC4			0.791	
CC5			0.785	
CC1			0.784	
CC2			0.760	
AC4				0.807
AC3				0.784
AC1				0.779
AC5				0.771
AC2				0.708
Extraction Method: Principal Component Analysis. Rotation Method: Varimax with Kaiser Normalization.[a]				
a. Rotation converged in 6 iterations.				

Table 10c shows that the loadings of all 19 items distributed across four components are greater than 0.5 (ranking from 0.708 to 0.831). RC3, IC1, CC3, and AC4 have the strongest contribution to RC, IC, CC, and AC, respectively.

4.3. Regression

We estimate the impact of four independent variables (Collaboration Capability, Integration Capability, Agility Capability, Responsiveness Capability) on the dependent variable

(Operational Performance) by employing the Multiple linear regression. Results are presented in Tables 11, 12, and 13.

Table 11. Model Summary[b]

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson
1	,701[a]	0.491	0.482	0.4600	2.167
a. Predictors: (Constant), RC, CC, IC, AC					
b. Dependent Variable: OP					

Regression model is created by four factors: Collaboration Capability (CC), Integration Capability (IC), Agility Capability (AC), and Responsiveness Capability (RC). The Adjusted R Square is 0.482 meaning that there is 48.2 percent of the change of the dependent variable is explained by four independent variables. The value of Durbin – Watson equals 2.167, in the range of 1.5 to 2.5, which means there is no auto-correlated problem in this statistical model.

Table 12. ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	46.281	4	11.570	54.686	,000[b]
	Residual	48.027	227	0.212		
	Total	94.308	231			
a. Dependent Variable: OP						
b. Predictors: (Constant), RC, CC, IC, AC						

In Table 12, the Sig value from the F-test indicates the sequence of independent variables significantly anticipates towards the dependent variable, in which, the Sig. must be less than 0.05 (Leech et al., 2005). As the table shown above, The ANOVA acquires an F-test value of 54.686 and is significant ($p<0.001$). The results of this outcome demonstrate that the combination of the predictors dramatically predicts customer satisfaction.

Table 13. Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients			Collinearity Statistics	
		B	Std. Error	Beta	t	Sig.	Tolerance	VIF
1	(Constant)	1.486	0.147		10.116	0.000		
	CC	0.209	0.042	0.279	4.983	0.000	0.716	1.396
	IC	0.143	0.042	0.198	3.430	0.001	0.670	1.493
	AC	0.114	0.045	0.151	2.559	0.011	0.641	1.560
	RC	0.201	0.040	0.287	4.959	0.000	0.668	1.497
a. Dependent Variable: OP								

Table 13 shows that the value of VIF of independent variables is smaller than 2 so there is no multicollinearity in the multiple linear regression model. As given in Table 13, the t value and the Sig. (p) of each independent variable indicates whether that variable is significantly contributing to the equation for predicting dependent variable from the whole set of predictors (Leech, Barrett, & Morgan, 2005). According to Field (2009), when Sig. of one predictor is equal or less than 0.05, this predictor has a significant impact on the dependent variable. There are all four independent variables that have Sig. values satisfying the condition of less than 0.05. Therefore, these factors have significant influence on the Operational Performance. The findings can be seen as follows:

Hypothesis H1 - Collaboration capability (CC) has a significant positive impact on operational performance. This hypothesis is supported by correlation (sig = 0.000 < 0.05) and multiple regression (sig = 0.000 < 0.05) and beta coefficient (0.79). Thus, H1 is accepted and the result also shows that CC has a strong positive association with OP.

Hypothesis H2 - Integration capability (IC) has a significant positive impact on operational performance. This hypothesis is supported by correlation (sig = 0.000 < 0.05) and multiple regression (sig = 0.001 < 0.05) and beta coefficient (0.198). Thus, H2 is supported.

Hypothesis H3 - Agility capability (AC) has a significant positive impact on operational performance. This hypothesis is supported by correlation (sig = 0.000 < 0.05) and multiple

regression (sig =0.011 < 0.05) and beta coefficient (0.151). Thus, H3 is accepted and the result also shows that AC has the lowest positive association with OP.

Hypothesis H4 - Supply chain responsiveness capability (RC) has a significant positive impact on operational performance. This hypothesis is supported by correlation (sig =0.000 < 0.05) and multiple regression (sig = 0.000 < 0.05) and beta coefficient (0.287). Thus, H4 is accepted and the result also shows that RC has the strongest positive association with OP.

Additionally, RC has the highest standardized coefficients Beta (0.287), which indicates that this predictor has the strongest impact on OP. Next, CC ranks second with $\beta = 0.279$. Following that are IC (third) and AC (fourth) with $\beta = 0.198$ and $\beta = 0.151$ respectively. Details are given in Table 14.

Table 14. Summary

Hypothesis		**Beta**	**Sig.**	**Hypothesis test result**
H1	Collaboration capability has a significant positive impact on operational performance.	0.297	0.000	H1 is supported
H2	Integration capability has a significant positive impact on operational performance.	0.198	0.001	H2 is supported
H3	Agility capability has a significant positive impact on operational performance.	0.151	0.011	H3 is supported
H4	Supply chain responsiveness capability has a significant positive impact on operational performance.	0.287	0.000	H4 is supported

4.4. Discussion

The findings of this study strongly support the positive impact of collaboration capability on operational performance. This aligns seamlessly with prior research conducted by Simatuang and Sridharan (2005), where the favorable effect of supply chain collaboration on operational performance was established. Furthermore, the study by Jimenez et al. (2018) illuminated the multifaceted benefits of collaborative efforts, transcending financial success to encompass

sustainability and innovation. Cao et al. (2010) also emphasized the advantages of supply chain collaboration in terms of knowledge sharing, risk mitigation, and communication efficiency. Importantly, our study quantifies this impact through the beta coefficient of 0.297, underscoring the substantial contribution of collaboration to operational performance enhancement. Businesses fostering collaborative practices across supply chain partners are poised for heightened productivity, cost-efficiency, and customer satisfaction. In the dynamic landscape of Vietnam, especially Binh Duong province, where synergistic collaborations hold increasing importance, this finding resonates. The robust relationship observed underscores the significance of cultivating strong partnerships with supply chain stakeholders. It can be inferred that effective collaboration strategies can propel businesses in Binh Duong province towards operational excellence.

Our findings solidly confirm the positive impact of integration capability on operational performance. This finding echoes the assertions of Chen et al. (2009) and Wu et al. (2009), emphasizing the benefits of coordinated coordination and communication across diverse supply chain partners. The beta coefficient of 0.198 underscores the meaningful contribution of integration to operational performance enhancement. This underscores the pivotal role of a well-structured supply chain in facilitating streamlined decision-making, efficient resource coordination, and prompt customer response. Companies prioritizing integration stand to gain improved cost-efficiency, reduced lead times, and heightened customer satisfaction. Within the context of Vietnam's rapid industrial expansion, effective communication and collaboration across various departments and partners are paramount. The study accentuates the value of investing in supply chain integration for businesses in Binh Duong province. By doing so, businesses can adeptly navigate market shifts, mitigate the "bullwhip effect," and emerge as competitive leaders in an evolving market scenario.

The results of this study provide crucial insights into the significance of agility capability in influencing operational performance. This mirrors previous research by Tang and Tomlin (2008), which underscored the importance of addressing supply chain risks and enhancing flexibility. This concurs with Van Hoek et al. (2001), who emphasized the role of supply chain flexibility in navigating volatile market conditions. Importantly, our study quantifies this association through a beta coefficient of 0.151, highlighting a substantial contribution. This emphasizes that businesses equipped with agile supply chains are primed to swiftly respond to market fluctuations, seize opportunities, and adeptly manage risks. These capabilities translate into

improved product quality, expedited delivery times, and overall enhanced operational efficiency. Given Vietnam's dynamic context, especially in Binh Duong province, characterized by uncertainties, this insight gains even more prominence. The capability to respond rapidly to market shifts and manage disruptions emerges as a critical advantage for businesses in the region. The positive correlation observed between agility capability and operational performance underscores the urgency for businesses in Binh Duong province to prioritize investments in strategies enhancing agility. Such efforts are poised to empower these businesses to navigate risks, capitalize on opportunities, and maintain competitiveness amid the ever-evolving business environment.

The robust findings of this study establish a compelling connection between supply chain responsiveness capability and operational performance. This finding echoes the insights from Williams et al. (2013) and Yu et al. (2016), both emphasizing the pivotal role of a responsive supply chain in effectively addressing market changes. The beta coefficient of 0.287 underscores the strength of this association. This underscores the value of a supply chain's Capability to adeptly adapt to fluctuations in demand and supply, ensuring consistent customer satisfaction even amidst disruptions. In the evolving landscape of Binh Duong province, where industries are rapidly maturing and market conditions are capricious, the ability to promptly adjust to changing circumstances becomes indispensable. The results accentuate that businesses with heightened supply chain responsiveness are better equipped to navigate disruptions, thereby ensuring streamlined operations and customer satisfaction. This finding's implications extend beyond manufacturing costs and customer satisfaction, indicating a holistic enhancement of business performance.

5. Conclusion and implication

This research investigates the complex impact of supply chain dynamic capabilities through various dimensions (including cooperation, integration, agility, and responsiveness) on operational performance at the manufacturing enterprises in Vietnam, focusing on Binh Duong province. The results highlight the crucial importance of cooperation in promoting innovation, integration in facilitating decision-making processes, agility in navigating unpredictable circumstances, and responsiveness in serving the needs of customers. Remarkably, responsiveness capability is found to have the strongest impact on operational performance, followed by collaboration capability, integration capability, and agility capability.

Our findings are expected to have significant ramifications for both academia and industry Initially, we offer valuable empirical support for researchers to conduct more in-depth inquiries, along with providing practical strategies for businesses to optimize their supply chain operations. Additionally, this study contributes significantly to the evolving field of supply chain management by illuminating the intricate ways in which dynamic capabilities foster operational excellence in a rapidly evolving industrial landscape.

References

Blome, C., Schoenherr, T., & Rexhausen, D. (2013). Antecedents and enablers of supply chain agility and its effect on performance: a dynamiccapabilities perspective. *International Journal of Production Research*, 51(4), 1295–1318. http://doi.org/10.1080/00207543.2012.728011

Bowen, K., & Guo S. (2011). *Structural equation modeling*. Oxford University Press.

Brown, A., & Moore, T. (2012). Confirmatory factor analysis. In H. Hoyle (Ed.), *Handbook ofstructural equation modeling* (pp. 190-211). The Guilford Press.

Cao, M., Vonderembse, M.A., Zhang, Q. and & Ragu-Na- than, T.S. (2010). Supply chain collaboration: conceptualization and instrument development, *International Journal of Production Research*, 48(22), 6613-6635. https://doi.org/10.1080/00207540903349039

Chakravarty A., Grewal R., & Sambamurthy V. (2013). Information technology competencies, organizational agility, and firm performance enabling and facilitating roles. *Information Systems Research*, 24(4), 976–997. https://doi.org/10.1287/isre.2013.0500

Chen, H., Daugherty, P., and Roath, A. (2009). Defining and operationalizing supply chain process integration capabilities, *Journal of Business Logistics*, 30(1), 63-84. http://doi.org/10.1002/j.2158-1592.2009.tb00099.x

Comrey, L. (1973). *A first course in factor analysis*. New York: Academic Press.

Dam, D.D & Huynh, C.M. (2022). Factors Influencing Consumers' Purchase Intention toward Accommodation via Lodging Websites: Evidence from Binh Duong Province of Vietnam. MPRA Paper No. 113517. https://mpra.ub.uni-muenchen.de/113517/

Eckstein, D., Goellner, M., Blome, C., & Henke, M. (2014a). The performance impact of supply chain agility and supply chain adaptability: The moderating effect of product complexity. *International Journal of Production Research*, *53*(10), 3028–3046. https://doi.org/10.1080/00207543.2014.970707

Eckstein, D., Goellner, M., Blome, C., & Henke, M. (2014b). The performance impact of supply chain agility and supply chain adaptability: The moderating effect of product complexity. *International Journal of Production Research*, *53*(10), 3028–3046. https://doi.org/10.1080/00207543.2014.970707

Eisenhardt, K. M., & Martin, J. A. (2000). Dynamic Capabilities: What Are They? Strategic Management Journal, 21(10/11), 1105–1121. http://www.jstor.org/stable/3094429

Fisher, J., & Marshall, P. (2009). Understanding descriptive statistics. *Australian Critical Care*,*22*(2), 93-97. https://doi.org/10.1016/j.aucc.2008.11.003

Flynn, B., Huo, B., & Zhao, X. (2010). The impact of sup- ply chain integration on performance: a contingency and configuration approach. *Journal of Operations Management*, 28(1), 58-71. https://doi.org/10.1016/j. jom.2009.06.001

Fu, Q., Rahman, A. A. A., Jiang, H., Abbas, J., & Comite, U. (2022). Sustainable supply chain and business performance: The impact of strategy, network design, information systems, and organizational structure. *Sustainability*, *14*(3). https://doi.org/10.3390/su14031080

Gambi, L. D., Boer, H., Gerolamo, M. C., Jorgensen, F., & Carpinetti, L. C. (2015). The relationship between organizational culture and quality techniques, and its impact on operational performance. *International Journal of Operations & Production Management, 35*(10), 1460-1484. https://doi.org/10.1108/IJOPM-12-2013-05633

Hadrawi, H. K. (2019). The impact of firm supply performance and lean processes on the relationship between supply chain management practices and competitive performance. *Uncertain Supply Chain Management*, 341–350. https://doi.org/10.5267/j.uscm.2018.7.003

Hair, J., Black, C., Babin, J., Anderson, E., & Tatham, L. (2006). *Multivariate data analysis* (6th ed.). Pearson University Press.

Ho, T.T & Huynh, C.M. (2022): Green Purchase Intention: An Investigation from Vietnamese Young Consumers. *MPRA Paper No. 112355*. https://mpra.ub.uni-muenchen.de/112355/

Hong, J., Liao, Y., Zhang, Y., & Yu, Z. (2019). The effect of supply chain quality management

practices and capabilities on operational and innovation performance: Evidence from Chinese manufacturers. *International Journal of Production Economics*, 212, 227-235. https://doi.org/10.1016/j.ijpe.2019.01.036

Hong, J., Zhang, Y., & Ding, M. (2018). Sustainable supply chain management practices, supply chain dynamic capabilities, and enterprise performance. *Journal of cleaner production*, *172*, 3508-3519. https://www.sciencedirect.com/science/article/abs/pii/S0959652617312635

Jimenez-Jimenez, D., Martínez-Costa, M. and & San- chez Rodriguez, C. (2019). The mediating role of supply chain collaboration on the relationship between information technology and innovation. *Journal of Knowledge Management*, 23(3), 548--567. https://doi.org/10.1108/JKM-01-2018-0019

Ju, K. J., Park, B., & Kim, T. (2016). Causal relationship between supply chain dynamic capabilities, technological innovation, and operational performance - Management and production engineering review - PAS Journals. *Management and Production Engineering Review*.

Kareem, M. & Kummitha, H. (2020). The Impact of Supply Chain Dynamic Capabilities on Operational Performance. *Organizacija, 53*(4) 319-331. https://doi.org/10.2478/orga-2020-0021

Kazmi, S. W., & Ahmed, W. (2021). Understanding dynamic distribution capabilities to enhance supply chain performance: A dynamic capability view. *Benchmarking: An International Journal*, *29*(9), 2822–2841. https://doi.org/10.1108/bij-03-2021-0135

Lee, S. Y. (2016). Responsible supply chain management in the Asian context: the effects on relationship commitment and supplier performance. *Asia Pacific Business Review*, *22*(2), 325-342. https://doi.org/10.1080/13602381.2015.1070012

Mandal, S., Sarathy, R., Korasiga, V.R., Bhattacharya, S. and & Dastidar, S.G. (2016). Achieving supply chain resilience: The contribution of logistics and supply chain capabilities. *International Journal of Di- saster Resilience in the Built Environment*, 7(5), 544- 562. https://doi.org/10.1108/IJDRBE-04-2016-0010

Marshall, G. & Jonker, L. (2010). An introduction to descriptive statistics: A review and

practical guide. *Radiography*, *16*(4), e1-e7. https://doi.org/10.1016/j.radi.2010.01.001

Munir, M., Jajja, M. S. S., Chatha, K. A., & Farooq, S. (2020). Supply chain risk management and operational performance: The enabling role of supply chain integration. *International Journal of Production Economics*, *227*, 107667. https://doi.org/10.1016/j.ijpe.2020.107667

Naway, F. A., & Rahmat, A. (2019). The mediating role of technology and logistic integration in the relationship between supply chain capability and supply chain operational performance. *Uncertain Supply Chain Management*, 553–566. https://doi.org/10.5267/j.uscm.2018.11.001

Nettleton, D. (2014). *Pearson correlation - An overview*. Science Direct. https://www.sciencedirect.com/topics/computer-science/pearson-correlation

Nguyen, P.D., & Huynh, C.M. (2023). Sustainable E-commerce Logistics for Customer Satisfaction: Evidence from Vietnam. *MPRA Paper No. 115976.* https://mpra.ub.uni-muenchen.de/115976/

Nguyen, M.T., & Huynh, C.M. (2022). The impact of employer branding on job application intention: Evidence from business undergraduates in Vietnam. *MPRA Paper No. 112927*. https://mpra.ub.uni-muenchen.de/112927/

Nguyen, X. H., Nguyen, L. T., & Pham, M. A. (2023). Influence of green supply chain management on business performance of Vietnamese electronic firms. *International Journal of Research and Review*, *10*(2), 753–771. https://doi.org/10.52403/ijrr.20230291

Oh, S., Ryu, Y. U., & Yang, H. (2019). Interaction effects between supply chain capabilities and information technology on firm performance. *Information Tech- nology and Management*, 20, 91–106. https://doi. org/10.1007/s10799-018-0294-3

Patabandige, G. M. J., & Galahitiyawe, N. W. K. (2022). Mediating role of supply chain traceability and supply chain visibility on environmental performance led by sustainable supply chain collaboration. *International Journal of Management Concepts and Philosophy*, *15*(4), 349. https://doi.org/10.1504/ijmcp.2022.126685

Phan, A. C., Nguyen, H. A., Trieu, P. D., Nguyen, H. T., & Matsui, Y. (2019). Impact of supply chain quality management practices on operational performance: Empirical evidence from manufacturing companies in Vietnam. *Supply Chain Management: An International*

Journal, *24*(6), 855–871. https://doi.org/10.1108/scm-12-2018-0445

Phan, T.V., & Huynh, C.M. (2023). The Effect of Logistics Services Quality on Consumer Satisfaction in Fresh Food E-Commerce: Evidence from the South of Vietnam. MPRA Paper No. 117627. https://mpra.ub.uni-muenchen.de/117627/

Prajogo, D., Oke, A., and & Olhager, J. (2016). Supply chain processes: linking supply logistics integration, supply performance, lean processes and competitive performance, *International Journal of Operations & Production Management*, 36(2), 220-238. https://doi.org/10.1108/IJOPM-03-2014-0129

Rajaguru, R., & Matanda, M. J. (2019). Role of compatibility and supply chain process integration in facilitating supply chain capabilities and organizational performance. *Supply Chain Management: An International Journal*, *24*(2), 301-316. https://doi.org/10.1108/SCM-05-2017-0187

Stank, T.P., Keller, S.B., & Daugherty, P.J. (2001). Supply chain collaboration and logistical service performance. *Journal of Business Logistics*, 22(1),29–48. http://doi. org/ 10.1002/j.2158-1592.2001.tb00158.

Suharto, S. (2023). Supply chain ambidexterity, business performance and mediating role of lean and agile supply chain strategies. *Uncertain Supply Chain Management*, *11*(2), 557–564. https://doi.org/10.5267/j.uscm.2023.2.009

Tang, C., & Tomlin, B. (2008). The power of flexibility for mitigating supply chain risks. *International Journal of Production Economics*, 116(1), 12-27. https://doi. org/10.1016/j.ijpe.2008.07.008

Teece, D. J. (2018). Business models and dynamic capabilities. *Long Range Planning*, *51*(1), 40–49. https://doi.org/10.1016/j.lrp.2017.06.007

Tencati, A., Russo, A., & Quaglia, V. (2010). Sustainability along the global supply chain: The case of Vietnam. *Social Responsibility Journal*, *6*(1), 91–107. https://doi.org/10.1108/17471111011024577

Tuan, N. P., & Yoshi, T. (2010). Organizational capabilities, competitive advantage and performance in supporting industries in Vietnam. *Asian Academy of Management Journal*, *15*(1)
https://www.researchgate.net/publication/44035889_ORGANISATIONAL_CAPABILIT

IES_COMPETITIVE_ADVANTAGE_AND_PERFORMANCE_IN_SUPPORTING_INDUSTRIES_IN_VIETNAM

Ursachi, G., Horodnic, A., & Zait, A. (2015). How reliable are measurement scales? External factors with indirect influence on reliability estimators. *Procedia Economics and Finance, 20*, 679-686. https://doi.org/10.1016/s2212-5671(15)00123-9

Van Hoek, R.I., Harrison, A. and & Christopher, M. (2001). Measuring agile capabilities in the supply chain, *International Journal of Operations and Pro- duction Management*, 21(1/2), 126–147. http://doi. org/10.1108/01443570110358495

Vanpoucke, E., Vereecke, A., & Wetzels, M. (2014). Developing supplier integration capabilities for sustainable competitive advantage: A dynamic capabilities approach. *Journal of Operations Management, 32*(7–8), 446–461. https://doi.org/10.1016/j.jom.2014.09.004

Vaske, J., Beaman, J., & Sponarski, C. (2016). Rethinking internal consistency in Cronbach's Alpha. *Leisure Sciences, 39*(2), 163-173. Retrieved from https://doi.org/10.1080/01490400.2015.1127189

Wagner, S. M., & Bode, C. (2008). AN EMPIRICAL EXAMINATION OF SUPPLY CHAIN PERFORMANCE ALONG SEVERAL DIMENSIONS OF RISK. *Journal of Business Logistics*, *29*(1), 307–325. https://doi.org/10.1002/j.2158-1592.2008.tb00081.x

Wieland, A., Handfield, R. B., & Durach, C. F. (2016). Mapping the landscape of future research themes in supply chain management. *Journal of Business Logistics*, *37*(3), 205–212. https://doi.org/10.1111/jbl.12131

Williams, B., Roh, J., Tokar, T., & Swink, M. (2013). Leveraging supply chain visibility for responsiveness: the moderating role of internal integration. *Journal of Operations Management*, 31(8), 543-554. https://doi.org/10.1016/j.jom.2013.09.003

Wu, F., Yeniyurt, S., Kim, D., & Cavusgil, T. (2006). The impact of information technology on supply chain capabilities and firm performance: A resource-based view. *Industrial Marketing Management*, 35, 493–504. https://doi.org/10.1016/j.indmarman.2005.05.003

Wu, Z., & Pagell, M. (2010). Balancing priorities: Decision-making in sustainable supply chain management. *Journal of Operations Management*, *29*(6), 577–590. https://doi.org/10.1016/j.jom.2010.10.001

Yang, Y., Zheng, Y., Xie, G., & Tian, Y. (2022). The influence mechanism of strategic partnership on enterprise performance: Exploring the chain mediating role of information sharing and supply chain flexibility. *Sustainability*, *14*(8). https://doi.org/10.3390/su14084800

Yu, W., Chavez, R., Jacobs, M. A., & Feng, M. (2018). Data-driven supply chain capabilities and performance: A resource-based view. *Transportation Research*, Part E 114, 371–385. https://doi.org/10.1016/j.tre.2017.04.002