The Influence of Risk Management Practices on Operational Performance and Supply Chain Performance: A Moderation Effect of Inflation Rate

Ngoc-Hong DUONG[1]

Abstract

Purpose: Sustainable economic growth is a top priority for any country, and inflation is crucial in determining future economic circumstances. Few research exists regarding the impacts of risk management practices on performance outcomes in the supply chain with the mediating role of inflation rate. Hence, this study investigates the important role of risk management practices in the context of high inflation rate. **Research design, data and methodology:** The PLS-SEM model is applied to identify the effects of risk management practices on operational performance and supply chain performance. The author distributed online and offline surveys to administrators at various businesses. After applying the filtration criteria, 309 responses were retained for further data analysis. **Results:** This research demonstrates that risk management practice is critical and adds to supply chain performance success. Managers should enhance all risk management procedures to regulate and manage hazards in the supply chain. This allows managers to anticipate and identify potential threats with ease, particularly in high inflation rate situation. **Conclusions:** The outcomes of this study demonstrate how fully implemented risk management practices can improve operational performance and supply chain performance, as well as control the impact of inflation rate.

Keywords : Inflation rate, Operational performance, Risk management practices, Supply chain performance, Emerging markets.

JEL Classification Code: E31, G32, L23, L25.

1. Introduction

1.1. Research Overview

The current movement toward globalization has afforded businesses numerous opportunities and several obstacles. Multinational enterprises have established warehouse facilities, production plants, and transportation centers internationally for various reasons, including cost savings, access to sources of raw materials, specialized skills, human resource management, and competencies (Sahoo & Vijayvargy, 2021). Nevertheless, the globalization of supply chains also presents many difficulties, such as higher levels of complexity and several associated dangers (Norrman & Wieland, 2020; Kanike, 2023; Wicaksana, 2022). Therefore, global enterprises have maintained supply chain complexity through strongly integrated supply chains (Vanpoucke et al., 2017). In addition, the importance of the supply chain to overall economic growth has become increasingly apparent during the past decade. A strong supply chain mechanism is an important part of the economies since it makes a particularly significant contribution to the gross domestic product.

In recent years, threats to the benefits and positive effects of globally integrated supply chains include

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1 First Author. Lecturer, School of International Business and Marketing, University of Economics Ho Chi Minh City (UEH), Vietnam. Email: hongdn@ueh.edu.vn

opportunistic behavior of supply chain members, geopolitical risk, sovereign risk, inflation rate risk, and exchange rate risk (Willcocks & Lacity, 2024). All of these types of risks can prevent businesses from realizing the maximum performance potential of their supply chains. Various types of risk, for instance, significantly impact the success of outsourcing (Skowronski et al., 2022). Moreover, according to a recent study by Rostami et al. (2015), the effect of supply chain risk management (SCRM) on operational performance depends on differing levels of environmental uncertainty. Numerous events of recent times (such as the Covid-19 pandemic, the trade war between China – and the USA, and most recently, the Russia – Ukraine war) illustrate how disruptions to one entity or process in the supply chain can influence the operations of other members of the supply chain. The complete supply chain must be considered in all nations when deciding on and executing risk management measures.

Companies are increasingly investing in risk management tools such as mitigation practices and contingency planning to manage the various types of risk to which supply chains are exposed (Kleindorfer & Saad, 2005). In addition, companies have relied on supplier participation, selection evaluation, and supplier development activities (DuHadway et al., 2018) when implementing mitigation practices. On the other hand, contingency planning practices include securing excess capacity or holding inventory at strategic points in the supply chain (Ghadge et al., 2021). Due to the expansive nature of risk management practice and the wide range of activities involved, improving better ways to control risk is a crucial managerial responsibility (Manhart et al., 2020; Stank et al., 2015).

On the other hand, inflation has been a significant factor in the global economy over the past several years. The majority of BRICS, including Brazil, India, China, South Africa, and Russia, have seen significant inflation. Many issues have arisen as a result of an inflation rate that has consistently been much above the 2% objective in certain regions. In an inflationary economy, consumer goods and services prices continue to rise rapidly. Unfortunately, incomes cannot keep pace with growing costs, leading to a precipitous decline in currency value. There appears to be much market instability as consumer spending power declines. In addition, since people anticipate more inflation, the cost of raw materials rises more quickly than the cost of manufactured items.

Sustainable economic growth is a top priority for any country, and inflation is critical in determining future economic circumstances. Monetary policy analysis becomes more challenging to estimate and keep up with when inflation rates fluctuate, and any associated uncertainty is evidence of the implausibility of policy decisions. However,

firms find their ability to set prices is constrained when market rivalry increases. Many businesses, especially small and medium-sized enterprises, struggle during periods of inflation. Inflation has a significant effect on businesses' day-to-day operations. In the business world, companies can only function with their partners. Therefore, supply chain risk management is crucial to operational performance and supply chain performance in an inflationary environment.

1.2. Research Gap

There are several previous studies on the effects of SCRM on various performance measures, such as operational performance (Tarofder, 2017; Qi et al., 2017), logistical performance (Stank et al., 2015), and supply chain performance (Yuen, & Thai, 2017; Khanuja & Jain, 2020). However, little research exists regarding the impacts of SCRM on supply chain performance and operational performance. Furthermore, few research exists investigate the effect of inflation rate on supply chain performance and operational performance, particularly in emerging markets. As a result, the author will investigate whether companies that perform effective SCRM practices can achieve high-performance outcomes in a period of inflation. Therefore, more work is needed to explore this case further.

Using the SCRM concept and the relational view, this paper aims to investigate how risk influences performance outcomes in the supply chain. In particular, the author investigates how risk in the form of the "rule of law" at the country level influences the relationship between SCRM on performance outcomes in emerging markets. Moreover, the author investigates how the inflation rate can moderate the links between SCRM and supply chain performance in different industries. Therefore, in this study, the author tries to answer the following questions which refer to this research topic:

RQ1: Is risk management practice related to operational performance and supply chain performance?

RQ2: To what extent can the inflation rate influence the relationship between risk management practice, operational performance, and supply chain performance?

1.3. Research Contributions

This study significantly extends the existing body of knowledge by addressing critical gaps in the literature concerning the impacts of SCRM on performance outcomes, specifically in the context of emerging markets and inflationary periods. While previous research has primarily focused on operational, logistical, and supply chain performance. In addition, this study uniquely examines the

effects of SCRM under the specific economic condition of inflation.

By leveraging the SCRM concept and the relational view, this research explores how the "rule of law" at the country level acts as a moderating factor in the relationship between SCRM practices and performance outcomes in emerging markets. Additionally, it investigates the role of the inflation rate as a moderating variable in the link between SCRM and supply chain. The findings aim to provide actionable insights for companies operating in volatile economic environments, thereby contributing to both academic literature and practical applications in supply chain management.

The following structure applies to the remaining sections of this study. First, the key concepts of supply chain risk management, operational performance, inflation rate, and supply chain performance were examined. Based on the previous literature review, the author then developed a research framework and hypotheses development. Methodology and data analysis are presented in the next part. The author continuously discussed managerial implications and theoretical contributions following the research results and findings. At the end of this study, some limitations and suggestions for future research were provided.

2. Literature Review and Hypotheses Development

2.1. Inflation Rate

As described by Ellahi (2017), inflation is an ongoing increase in prices across the board. According to Akers (2014), the inflation rate is the rate at which the general level of prices increases or decreases as measured by a price index. The GDP Deflator and a Consumer Price Index (CPI) indicator are two typical proxies for inflation. The CPI tracks changes in the overall cost of standard goods and services, whereas the Gross Domestic Product Deflator monitors inflation more broadly. The CPI tracks changes in retail prices on a national scale. Inflation is present if the CPI is high or rising. Demand-pull and cost-push inflation are the two forms of inflation identified by economists. In a demand-pull inflation scenario, economic output falls, but aggregate demand for goods and services increases. In contrast, cost-push inflation arises when input costs for manufacturing rise. Rapid pay increases or increasing raw material prices typically bring this sort of inflation.

2.2. Risk Management Practice

According to Jüttner et al. (2005), the authors define supply chain risk as all risks associated with the transfer of information, basic materials, and finished goods from the initial suppliers to the end users. Prior research indicates that supply chain risk refers to "The negative deviation from the expected value of a certain performance measure, resulting in negative consequences for the focal firm" (Wagner & Bode, 2008) and "The potential variation of outcomes that influence the decrease of value-added at any activity cell in a chain" (Dong & Cooper, 2016). Moreover, it refers to recognizing and controlling potential risks to reduce vulnerability through mutually beneficial collaboration between those involved in the supply chain (Jüttner, 2005). SCRM has been defined as managing risks related to the supply chain through sharing and relationship building among members to ensure effectiveness and efficiency in the supply chain (Wicaksana, 2022). Previous research has also suggested that to reduce supply chain susceptibility within the supply network, members need to identify and manage risks through effective collaboration (Goh et al., 2007).

2.3. Operational Performance

Johnsen (2018) defined operational performance as the degree to which a company's product creation is efficient, processes are improved, quality standards are met, and lead times are kept short. Operational performance is essential for companies because it helps them increase the effectiveness of production processes and generate high-quality items, ultimately resulting in a more significant amount of revenue and profit. Meanwhile, Ellwood et al. (2017) propose that risk identification is one of the most essential factors in operational performance that contributes to competitive advantage. The phrase "risk identification" refers to an organization's capacity to predict future and possible risks that will result in effective operational performance (Pfeffer, 2010). As a result of efficient SCRM practices in the supply chain (Morais & Silvestre, 2018), these initiatives will likely affect operational performance by increasing product development efficiency, making process improvements, and reducing lead times. According to Roca & Searcy (2012), relating SCRM to operational performance may be challenging due to the potential of many findings in various areas and the diversity of metrics.

2.4. Supply Chain Performance

Grimm et al. (2004) explained that supply chain performance is the overall effort to meet the final customer's requirements. A study conducted by Sodhi (2015) used the stakeholder resource-based view (SRBV) to evaluate the relationships between SCRM and supply chain performance. As stated by SRBV, all stakeholders, including the company's customers, suppliers, and workers, are given equal consideration to ensure that each of their points of

view is considered. All stakeholders are considered to increase their utility, with different factors affecting their decisions and shaping their tastes (Sodhi, 2015). They will use their routines, resources, and abilities to accomplish their goals. Therefore, to improve the performance of the supply chain, SCRM practices should be applied to manage the risks and enable them to make the right decisions while simultaneously beneficial to the other stakeholders. Manuj et al. (2014) acknowledge that SCRM contributes to a company's performance by reducing operational loss, facilitating rapid response, and preventing supply chain disruptions. Therefore, to attain higher performance and cope with the unpredictability in the environment, businesses need to collect and process information (Lee et al., 2017).

2.5. Hypotheses Development

Risk management practice (supply chain risk management – SCRM), which includes risk detection, prevention, reaction, and recovery, is a firm's capability for acquiring and analyzing supply chain information. Consequently, as an information processing system, the SCRM aids in mitigating ambiguity (Lee et al., 2017) and improves operational performance (Kauppi et al., 2016). The author focused on four major performance characteristics in this study: quality, flexibility, delivery, and customer service performance (Yadav et al., 2016). SCRM enables the identification and mitigation of possible risk factors in the supply chain and operations, as well as the reduction of mistakes and reworks, resulting in increased efficiency and enhanced performance outcomes in the supply chain (Lee et al., 2017). In order to improve forecasting accuracy and shorten supply lead times, SCRM allows for rapid detection of possible hazards (Wieland & Wallenburg, 2012). SCRM can also enhance flexibility by addressing upstream and downstream risks (Jüttner & Maklan, 2011). Ultimately, improved customer service and satisfaction can be attained by preventing product or material defects (Zsidisin, 2003). As a result, the author proposes that SCRM facilitates reducing uncertainty and avoiding supply chain disruptions, thereby enhancing operational and supply chain performance. The author proposes these hypotheses:

H1: Risk management practice is positively associated with operational performance.

H2: Risk management practice is positively associated with supply chain performance.

The horizontal view of an integrated supply chain improves operational performance. The operational performance of a business is strengthened in terms of logistics services, including the capacity of a firm to deliver services such as just-in-time and inventory management to make items readily available to clients. Furthermore, it aids in fast-changing the distribution network to meet demand (Duong & Ha, 2021). It leads to effective and efficient supply chain performance. The capacity to minimize and control costs is referred to as cost competence. A company's design competency is its capacity to modify product design and create new items. The capacity to supply items with faster delivery is called delivery expertise. According to this research, operational performance can directly impact supply chain performance (Jüttner & Maklan, 2011).

Furthermore, the resources-based view theory (RBV) suggests that a business develops no substitutable, path-dependent, or unique capability with time, which is operational performance. Operational performance helps a company achieve and maintain a competitive advantage. Close collaboration with suppliers is required for a firm's deployment of supply chain management. Ataseven & Nair (2017) stated that the firm's long-term strategic partnerships determine the scope of its activity. Previous research emphasizes the influence of supply chain entity and stakeholder performance on overall supply chain performance (Klassen & Vachon, 2003). Vachon & Klassen (2006) proved the firm's performance and its influence on the entire supply chain performance. Other empirical research investigated the link between the firms' operational performance and supply chain performance by implementing sustainable measures in the operations of the focal companies (Husgafvel et al., 2015). Hence, the author hypothesizes:

H3: Operational performance is positively associated with supply chain performance.

Currently, a new class of models with a correlation between inflation and economic growth explains that the relationship between them is non-linear, and thus there is a strength here. The availability chain plays the most significant role in this relationship between inflation and the economic process. While Bruno & Easterly (1998) demonstrate that the inflation-growth correlation is present, they do so by basing their cross-section regressions on annual observations, with the correlation weakening as longer-term time averages are used, as shown by the work of Barro (1995). Jali et al. (2017) show that supply chain and inflation have a relationship. Huyen (2018) used the VAR model to investigate the relationship between exchange rates and output. He also investigated the relationship between exchange rates and inflation in Vietnam. The authors drew some conclusions from the quantitative findings, such as that the most influential factor on the growth of the gross domestic product (GDP) is itself and price, not the exchange rate. Gokal & Hanif (2004) examined a variety of financial theories in order to reach a consensus on the expansion and

development relationship for the Fijian economy. Their findings indicate a weak correlation between growth and expansion, whereas the change in yield gap has a significant impact. From GDP growth to expansion, the two factors had a unidirectional causal relationship. Inflation, however, harms the supply chain. Due to the negative impact, the effectiveness of the availability chain is reduced.

In recent years, the Covid-19 pandemic, the war between Ukraine and Russia, and the financial crisis have led to high inflation rates worldwide. Rising prices cause consumers to tighten their wallets, which affects demand and creates uncertainty, making it difficult for supply chain professionals to plan. The second is the instability of the labor market. Third is geopolitical uncertainty, political tensions, and conflicts that have created many future supply chain bottlenecks and uncertain factors. Furthermore, the energy shortage problem leads to higher energy prices and rising costs, causing companies to cut production and complicate supply chain planning. Economists predict that businesses will respond and tackle the challenge with efforts to innovate and optimize supply chains. Inflation makes it difficult for businesses to access loans due to rising lending rates, making it difficult to expand production investment. Inflation also causes wage costs to increase, and workers may quit their jobs if the demand for wages is not met.
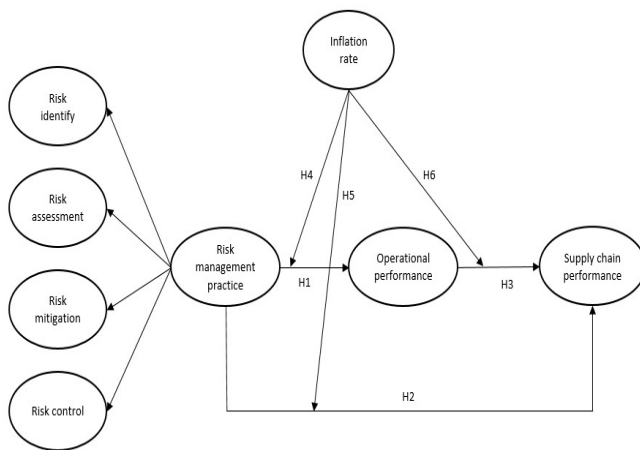
Figure 1: The Research Framework

As a result, the author proposes these hypotheses:

H4: The inflation rate will moderate the relationship between risk management practice and operational performance.

H5: The inflation rate will moderate the relationship between operational and supply chain performance.

H6: the inflation rate will moderate the relationship between risk management practice and supply chain performance.

3. Methodology

3.1. Design Questionnaire

The measurements of the dependent variables' relevant subjects were drawn from research that had been published on topics that were connected. Adapted from El Baz & Ruel (2021), the measurement for Risk management practice consists of four factors and 15 items in total: risk identification (4 items), risk assessment (4 items), risk mitigation (3 items), and risk control (4 items). In addition, Operational performance (4 items) was quantified using data from Kim & Thapa (2018). Supply chain performance (3 items) was adopted by Mani et al. (2020). Lastly, the Inflation rate (5 items) was adopted by Musarat et al. (2020). All revised measurement items used a 7-point Likert scale (ranging from Strongly disagree to Strongly agree) for these measurement items.

3.2. Sample size

According to Hair *et al* (2011), the minimum sample size to use EFA is 50, preferably 100 or more. In this research, the final questionnaire has 27 questions using a 7-level Likert scale (corresponding to 27 observed variables of different factors), these 27 questions are used to analyze in EFA. Applying a 5:1 ratio, the minimum sample size will be $27 \times 5 = 135$, if the ratio is 10:1, the minimum sample size is $27 \times 10 = 270$. This sample size is larger than 50 or 100, so the author needs minimum sample size to perform EFA between 135 and 270 depending on the selection ratio based on survey ability.

3.3. Sampling Method

In this study, the author will employ non-profitability sampling. In the non-probability method, the researcher selects study participants at random. This form of sampling is not a fixed or predetermined procedure for selection. Consequently, it is difficult for all elements of a society to have equal odds of being included in a survey (Yin, 2003). Furthermore, since neither the sample nor its selection criteria are unknown, this method is efficient. In addition, researchers generate hypotheses through non-probability sampling. This technique expedites the return of data and provides the framework for future research (Denzin & Lincoln, 2000).

3.4. Participants and Data Collection

The author distributed both online and offline surveys. The survey respondents are medium and large enterprises in Vietnam. All enterprises must have operated for at least

five years and invested at least $1 million in capital. The author utilized these criteria to ensure that all businesses are operationally mature and have adequate supply chain risk management knowledge. The author only selects individuals with at least five years of experience in their current position, as they will have sufficient knowledge and a comprehensive understanding of their organization's culture. The author received 318 responses; after applying the filtration criteria, 309 responses were retained for further data analysis (see Table 1).

Table 1: Sample Characteristics

Characteristics	Frequency (n = 309)	Percent (100%)
Company's operation time		
5 to 10 years	115	37.2
11 to 15 years	84	27.2
16 to 20 years	62	20.1
Above 20 years	48	15.5
Company's capital investment		
Medium enterprise: 1-5 million USD	172	55.7
Large enterprise: More than 5 million USD	137	44.3
Industry		
Insurance	49	15.9
Tourist & Service	56	18.1
Finance & Banking	59	19.1
Transportation & Logistics	65	21
Necessaries & Agriculture	80	25.9
Respondent's working experience		
5 to 10 years	143	46.3
11 to 15 years	113	36.6
16 to 20 years	31	10.0
Above 20 years	22	7.1
Respondent's position in the company		
Middle manager	181	58.6
Executive and top manager	128	41.4

According to Table 1, the study sample includes 309 companies with diverse characteristics. Regarding operation time, 37.2% have operated for 5-10 years, 27.2% for 11-15 years, 20.1% for 16-20 years, and 15.5% for over 20 years. Capital investment splits into 55.7% medium enterprises (1-5 million USD) and 44.3% large enterprises (over 5 million USD). Industry representation includes Insurance (15.9%), Tourist & Service (18.1%), Finance & Banking (19.1%), Transportation & Logistics (21%), and Necessaries & Agriculture (25.9%). Respondents' working experience is 46.3% with 5-10 years, 36.6% with 11-15 years, 10% with 16-20 years, and 7.1% with over 20 years. Positions held are 58.6% middle managers and 41.4% executives or top managers. This diverse sample supports a comprehensive analysis of SCRM practices across various contexts.

4. Results

4.1. Descriptive Statistics, Reliability, and Discriminant Validity

First, a factor analysis was conducted, and items with a factor loading greater than 0.7 were retained (Hair et al., 2011). For the reliability test, both composite reliability (C.R.) and Cronbach's Alpha must be greater than 0.7 to ensure high reliability of the measurements (Bagozzi, 2011). Convergent validity is confirmed when the average variance extracted (AVE) for all constructs is greater than 0.50 (Hair et al., 2011). Table 2 presents the results of the descriptive statistics and reliability measurements.

Table 2: Outer Loadings

	IF	OPR	RAS	RCT	RID	RMI	SCP
IFR1	0.915						
IFR2	0.933						
IFR3	0.917						
IFR4	0.919						
IFR5	0.903						
OPR1		0.877					
OPR2		0.902					
OPR3		0.826					
OPR4		0.858					
RAS1			0.814				
RAS2			0.822				
RAS3			0.792				
RAS4			0.749				
RCT1				0.823			
RCT2				0.859			
RCT3				0.897			
RCT4				0.915			
RID1					0.828		
RID2					0.731		
RID3					0.730		
RID4					0.802		
RMI1						0.873	
RMI2						0.888	
RMI3						0.812	
SCP1							0.892
SCP2							0.900
SCP3							0.865

Note: IFR – Inflation rate, OPR – Operational performance, RAS – Risk assessment, RCT – Risk control, RID – Risk identification, RMI – Risk mitigation, SCP – Supply chain performance.

In addition, Cronbach's Alpha, C.R. (composite reliability), and AVE were utilized to assess the reliability of the reflective data (extract of average variance). Table 3 shows that all indicators of constructs had loadings greater

than 0.70. Cronbach's Alpha and C.R. exceeded 0.70 (DeVellis & Thorpe, 2021).

Table 3: Construct Reliability and Validity

	Cronbach's Alpha	rho_A	Composite Reliability	Average Variance Extracted (AVE)
IF	0.954	1.021	0.964	0.842
OPR	0.889	0.896	0.923	0.750
RAS	0.805	0.808	0.873	0.632
RCT	0.897	0.900	0.928	0.764
RID	0.776	0.786	0.856	0.599
RMI	0.820	0.821	0.893	0.736
SCP	0.862	0.865	0.916	0.784

The author used the Fornell-Larcker criterion and the Heterotrait-Monotrait ratio (HTMT) (Roemer et al., 2021). As shown in Table 4, the discriminant validity of the constructs was adequate as measured by the square root of each construct's AVE (diagonal elements).

Table 4: Correlations between Research Constructs

|	IFR	OPR	RAS	RCT	RID	RMI	SCP
IFR	0.918						
OPR	0.016	0.866					
RAS	-0.061	0.547	0.795				
RCT	0.026	0.655	0.604	0.874			
RID	-0.027	0.504	0.611	0.646	0.774		
RMI	0.045	0.645	0.689	0.662	0.557	0.858	
SCP	-0.017	0.725	0.714	0.662	0.584	0.633	0.886

All HTMT scores were below the 0.90 threshold. Thus, discriminant validity was not an issue in this investigation (Hair et al., 2023). As a result, the concepts under investigation will have more discriminant validity.

4.2. Common Method Bias

The author employs two methodologies recommended by (Podsakoff et al., 2003) to determine if our data is devoid of CMB. This test determined that CMB was not a significant issue, as a single component identified by this method explains only 45% of the variation below the 50% threshold. In addition, the CMB is evaluated by evaluating the VIF created for each component. All VIF values in the model were less than 3.3, indicating that CMB was not a concern in this study (Kock, 2015).

4.3. Hypothesized Model Testing

The author evaluated the structural model using SmartPLS 3.0 (Ringle et al., 2015) based on the importance of the calculated path coefficient and R-squared (Hair et al., 2023). The author checked the model with 5,000 bootstrap samples, as recommended by Hair et al. (2011), to confirm that the estimated path coefficients are stable. The PLS-SEM result is displayed in Figure 2.
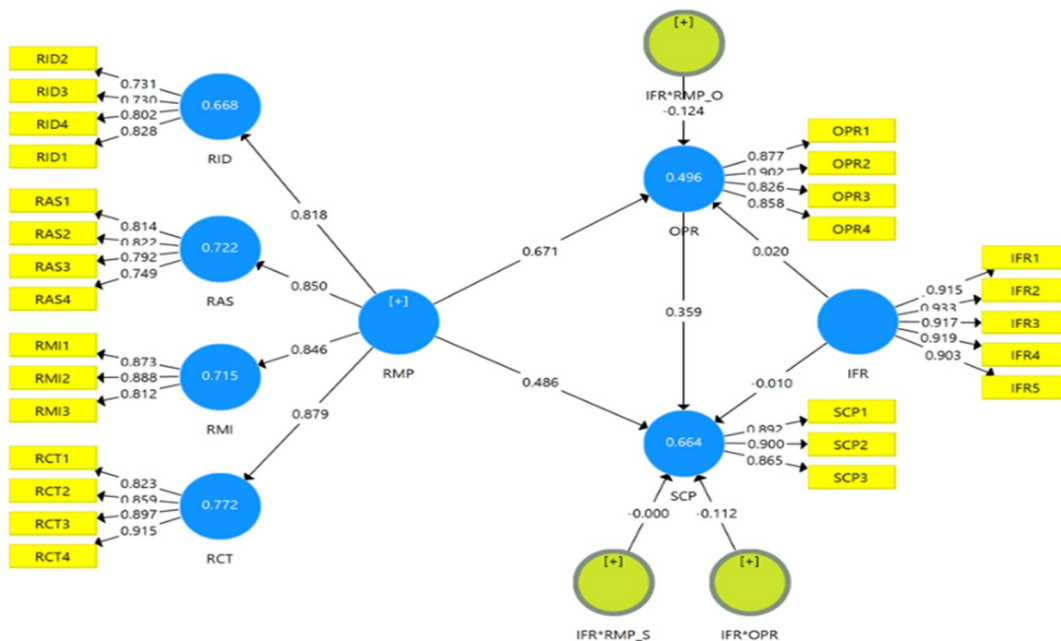
Figure 2: The Results of PLS-SEM

In accordance with Table 5, the study's model fit indices reveal that the model explains a substantial portion of the variance in both operational performance and supply chain performance. The R-squared values for OPR and SCP are 0.501 and 0.670, respectively, indicating that 50.1% of the variance in OPR and 67% of the variance in SCP can be explained by the model. The adjusted R Square values, which account for the number of predictors in the model, are slightly lower at 0.496 for OPR and 0.664 for SCP, reinforcing the robustness of the findings. These high R Square values demonstrate the strong explanatory power of the model, underscoring the importance of effective SCRM practices in enhancing both operational and supply chain performance outcomes.

Table 5: R-squared Values

	R Square	R Square Adjusted
OPR	0.501	0.496
SCP	0.670	0.664

According to Table 6, the results indicated that H1 was supported as Risk management practice is positively related to Operational performance ($\beta H1=0.671$, $pH1<0.05$). In addition, Risk management practice is positively related to Supply chain performance ($\beta H2=0.486$, $pH2<0.05$). Similarly, Operational performance is positively related to Supply chain performance ($\beta H3=0.359$, $pH3<0.05$). On the other hand, Inflation rate will moderate the relationship between Risk management practice and Operational performance. The relationship may weaken at a high inflation rate ($\beta H5=-0.124$, $pH5<0.05$). Likewise, the Inflation rate will moderate the relationship between Operational and Supply chain performance. The relationship may weaken at a high inflation rate ($\beta H4=-0.112$, $pH4<0.05$). In contrast, the Inflation rate has no impact on the relationship between Risk management practice and Supply chain performance ($\beta H6=0.000$, $pH6>0.05$).

Table 6: The Results of PLS-SEM

	p-value	Beta	t-value	Result
H1	0.671	0.000	15.187	Supported
H2	0.359	0.000	4.730	Supported
H3	0.486	0.000	6.194	Supported
H4	-0.124	0.021	2.072	Supported
H5	-0.112	0.038	2.308	Supported
H6	0.000	0.998	0.002	Not Supported

5. Dicussions

The results indicate strong support for the proposed hypotheses. Specifically, Risk Management Practice is positively related to Operational Performance and to Supply Chain Performance. Additionally, Operational Performance is positively related to Supply Chain Performance. However, the study also found that the Inflation Rate moderates the relationship between Risk Management Practice and Operational Performance, weakening it at higher inflation rates. Similarly, the Inflation Rate moderates the relationship between Operational and Supply Chain Performance, with the relationship weakening at higher inflation rates. Conversely, the Inflation Rate does not impact the relationship between Risk Management Practice and Supply Chain Performance. These findings highlight the complex interplay between economic conditions and risk management efficacy, providing critical insights for supply chain managers and policy-makers. As a result, this study offers both theoretical contributions and practical implications.

5.1. Theoretical Contributions

This research adds several insightful insights to the existing literature and practices in supply chain management. First, our research demonstrates that risk management practice positively affects performance outcomes in the supply chain. This result is consistent with previous research on supply chain risk management (Kauppi et al., 2016; Riley et al., 2021; Schoenherr & Swink, 2012). In addition, our research has demonstrated that when companies consistently exchange information with their major suppliers and customers, operational performance is enhanced by minimizing bullwhip effects, anticipating potential risks, and being aware of the most recent customer demands (Lee et al., 2017). Outside collaboration can significantly improve supply chain performance when organizations deal with uncertainties and hazards in the supply chain.

Moreover, the empirical finding highlights the significance of risk management practices in achieving supply chain performance. Supply chain risk management between companies and their strategic suppliers is essential for successful and efficient goal attainment (Duong & Ha, 2021). Therefore, our findings corroborate those of other studies on supply chain performance (Kauppi et al., 2016; Zhao et al., 2013). Information and data can be transferred rapidly and adequately by establishing internal connections (Riley et al., 2021). As a result, there is increased comprehension amongst stakeholders in the supply chain.

Inflation and the success of the construction sector are linked, and this has an influence on economic growth. Based on the literature, a conceptual framework for better comprehension of this scenario has been established. Not only can the inflation rate affect the overall business, but

the industry's growth rate may also affect the economy of the country and the inflation rate (Khan et al., 2017). The inflation rate affects GDP, and GDP occasionally influences country inflation rates (Mubarik, 2005). Inflation reduces GDP while increasing consumption costs (Khan et al., 2018).

5.2. Managerial Implications

This research offers various managerial insights into how risk management practice may improve operational and supply chain performance. This study indicated that supply chain risk management merits greater emphasis from management. Managers in the supply chain must enhance their work performance and abilities to handle risks and uncertainties better. Managers need a deeper comprehension of the significance of risk management practices and how they may contribute to supply chain performance. According to this research, managers should work more closely with their partners, including upstream suppliers and consumers, and aggressively urge them to respond quickly with predictable risks and inflation rates. The efficiency of the supply chain as a whole will increase dramatically as a result.

In addition, managers should enhance all risk management procedures to regulate and manage hazards in the supply chain. This allows managers to anticipate and identify potential threats with ease. The best way for businesses to manage risks and boost their performance is to adopt collaborative methods both internally and with their strategic partners. If we can improve our internal communications, we can better glean and collect data from other sources.

Lastly, commodity prices often increase sharply when inflation increases, especially energy groups (crude oil, gas) (Nusair & Olson, 2019). According to many studies from large-sized enterprises, commodity prices and inflation have a positive relationship. It is reasonable to invest in a group of enterprises producing and trading in goods with the expectation of price increases in an inflationary environment when investing in commodity price indexes is unsuitable. Besides, when the price of raw materials increases, businesses with closed production and business chains will benefit from increased output prices.

6. Limitations and Future research

Despite the progress made in this study, there are still specific gaps that need to be filled by future research. Supply chain risk management encompasses a wide range of topics, and we have covered only a subset of them here. Therefore, environmental hazards, political risks, and micro-risks may

be investigated in further studies. Practical guidelines for managers in a variety of settings might be gleaned from these threats. The limited number of countries sampled may be due to the study's reliance on data from a single country (Vietnam). The impact of supply chain risk management practice on operational and supply chain performance deserves further attention from researchers, who should consider conducting a cross-country study.

In conclusion, this study demonstrates that risk management practice is critical and adds to supply chain performance success. Inflation is one of the most influential factors in national economies. Besides, inflation has an effect, for better or worse, on every sector of the economy. According to this study, inflation affects industries and, in turn, can devastate a country's overall economic growth. However, companies apply risk management practices can control the negative effect of inflation on their overall performance. Therefore, authorities, policy-makers, and supply chain managers should work more closely with their partners, including upstream suppliers and consumers, and aggressively urge them to respond quickly with predictable risks and inflation rates. The efficiency of the supply chain as a whole will increase dramatically as a result.

Acknowledgment

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Appendixes

Appendix 1: Final Questionnaire

Constructs	Measurements	Authors
IFR1	Inflation impacts the economic growth	Musarat et al. (2020)
IFR2	Inflation impacts the interest rates	
IFR3	Inflation impacts supply chain performance	
IFR4	Inflation impacts firm performance	
IFR5	Inflation impacts the CPI	
OPR1	The company has improved its product/service quality	Kim & Thapa (2018)
OPR2	The company has increased delivery reliability	
OPR3	The company has reduced total costs	
OPR4	Improved profits	
RAS1	In the course of our risk analysis, we look for the possible sources of supply chain risks	El Baz & Ruel (2021)
RAS2	In the course of our risk analysis, we evaluate the probability of supply chain risks	
RAS3	In the course of our risk analysis, we analyze the possible impact of supply chain risks	
RAS4	In the course of our risk analysis, we classify and prioritize our supply chain risks	
RCT1	In the course of our risk analysis, we demonstrate possible reaction strategies	
RCT2	Our risk management processes are very professionally designed	
RCT3	We have managed to minimize the frequency of occurrence of supply chain risks over the last three years	
RCT4	We have managed to minimize the impact of the occurrence of supply chain risks over the last three years	
RID1	We are comprehensively informed about basic possible risks in our supply chain	
RID2	We are constantly searching for short-term risks in our supply chain	
RID3	In the course of our risk analysis for all suppliers and SC partners, we select relevant observation fields for supply risks	
RID4	In the course of our risk analysis for all SC partners, we define early warning indicators	
RMI1	In the course of our risk analysis, we demonstrate possible reaction strategies	
RMI2	In the course of our risk analysis, we evaluate the effectiveness of the possible reaction	
RMI3	Supply chain risk management is an important activity in our company	
SCP1	Increased customer satisfaction with fulfilment	Mani et al. (2020)
SCP2	Achieved compressed order lead time	
SCP3	Increased customer service level	