Studi Ilmu Manajemen dan Organisasi (SIMO)
ISSN: 2745-7826, Vol 7, No 3, 2026, 395-411 https://doi.org/10.61401/simo.v7.n3.p395-411.2026

Exploration, Exploitation, And Supply Chain Risk Management: Driving Manufacturing Financial Performance

Sandriana Marina[1*], Dian Anom Baskoro[2], Nashrullah Nashrullah[3], Yogi Ashari[4]
Institut Transportasi dan Logistik Trisakti, Jakarta, Indonesia[1,2,3,4]
sandrianamarina09@gmail.com[1*], anom.baskoro2016@gmail.com[2], irul033029@gmail.com[3], yogi.ashari@gmail.com[4]

Article History
Received on 01 July 2026
1st Revision on 03 August 2026
2nd Revision on 28 August 2026
3rd Revision on 04 September 2026
4th Revision on 07 September 2026
Accepted on 14 September 2026

Abstract

Purpose: This study examines the effect of supply chain ambidexterity, including exploration and exploitation practices, on financial performance through Supply Chain Risk Management (SCRM) as a dynamic capability in manufacturing firms in developing economies. It investigates the direct effects of exploration and exploitation on SCRM and financial performance, as well as the mediating role of SCRM.

Methodology: A quantitative approach was applied using purposive sampling involving 92 managers and decision-makers from manufacturing firms listed on the Indonesia Stock Exchange. Data were collected through a structured questionnaire measuring supply chain exploration, exploitation, SCRM, and financial performance using a 5-point Likert scale. The data were analyzed using Partial Least Squares Structural Equation Modeling (PLS-SEM) with SmartPLS 4.

Results: The findings indicate that supply chain exploration positively and significantly influences SCRM and financial performance, and that SCRM significantly mediates the relationship between exploration and financial performance. In contrast, supply chain exploitation does not significantly affect SCRM or the financial performance.

Conclusions: This study demonstrates that innovation-oriented supply chain practices are more effective than efficiency-focused approaches in addressing uncertainty and improving financial outcomes.

Limitations: This study focuses only on Indonesian manufacturing firms, limiting generalization.

Contributions: This study extends the supply chain management literature by positioning SCRM as a dynamic capability that translates exploration practices into superior financial performance. Practically, it provides insights for managers to prioritize adaptive strategies in developing resilient supply chains.

Keywords: *Exploitation,Exploration, Financial Performance, Risk Management, Supply Chain*

How to Cite: Marina, S., Baskoro, D. A., Nashrullah, N., & Ashari, Y. (2026). Exploration, Exploitation, And Supply Chain Risk Management: Driving Manufacturing Financial Performance. *Studi Ilmu Manajemen dan Organisasi*, 7(3), 395-411.

1. Introduction

Globalization has increased the need for supply chains to be more responsive and adaptive to rapidly changing market dynamics and encouraged companies to adopt digital technologies for real-time decision-making across geographically dispersed networks (Hofmann, Sternberg, Chen, Pflaum, & Prockl, 2019). A study by Ambulkar, Ralston, Polyviou, and Sanders (2023)emphasized that, amidst industry and market volatility, companies must integrate risk management with ambidexterity, reflecting exploration and exploitation capabilities, as a critical strategy for maintaining market performance during supply chain disruptions. This is in line with the opinion of Teece, Pisano, and Shuen (1997) which emphasizes dynamic adaptive capabilities in the face of surges in demand, supply disruptions, and unexpected changes in global conditions. Disruptions in the supply chain are operational disruptions that occur not as a "black swan" like the COVID-19 pandemic described by Taleb (2010), but rather routine events such as delivery delays, supply shortages, and production problems that can be anticipated and managed through risk management and increased operational capabilities.

A study by Gligor, Feizabadi, Russo, Maloni, and Goldsby (2020) proposed the Triple-A Supply Chain concept, namely Agility, Adaptability, and Alignment, as a crucial approach to address various global challenges in maintaining competitive advantage. This is applied in a highly dynamic and uncertain business environment, requiring companies to build supply chains that are not only efficient but also resilient and strategic. This concept aligns with Christopher (2016), Tang (2006), Wieland and Marcus (2012), the emphasis on resilience, survival, integration, and response strategies in the supply chain as key to facing disruption and creating sustainable competitive advantage (Christopher, 2016; Tang, 2006; Wieland and Marcus, 2012).

In the context of supply chain disruption, Naimy, Chedid, and Bitar (2024) noted that it is not only a logistical challenge but can also have a direct impact on financial performance. This opinion is supported by Ivanov and Dolgui (2020), who stated that maintaining financial stability through long-term adaptation is necessary by strengthening the role of agility and resilience in maintaining financial performance (Gölgeci & Kuivalainen, 2020), as well as strategic supply chain risk management to protect the company's value (Sodhi, Son, & Tang, 2012; Nathania, & Wijaya, 2024).

Furthermore, an ambidextrous strategy that balances exploration to generate innovation and exploitation to create efficiency has been shown to accelerate organizational effectiveness (Annamalah, Paraman, Ahmed, Pertheban, Marimuthu, & Venkatachalam, 2023). This approach is also supported by March (1991), who emphasizes the importance of this balance for organizational learning and sustainability. This concept is reinforced by Tushman (2004), who describe an ambidextrous organization as a model capable of implementing both strategies simultaneously to achieve competitive advantage. Furthermore, Christopher and Peck (2004), Lee and Rha (2016) highlight the role of flexibility and resilience in the supply chain as key factors that enable companies to adapt and survive amidst market changes and operational disruptions.

In the manufacturing industry, pressure from dominant supply chain partners drives companies to implement adaptive strategies that maintain efficiency while fostering innovation. In this context, an ambidextrous approach, integrating exploration and exploitation simultaneously, is increasingly relevant. Tao, Li, Ray, and Rebolledo (2022) found that manufacturers tend to respond to supplier dominance through an exploration strategy, while customer pressure is addressed through an exploitation approach. In practice, these two strategies are often implemented simultaneously, reflecting an organization's adaptive capacity to face competitive pressures. Although previous research has extensively discussed exploration, exploitation, and Supply Chain Risk Management (SCRM), research integrating all three into a single conceptual model remains limited (Benitez et al., 2020). Previous studies have mainly examined supply chain exploration, exploitation, or risk management as separate strategic dimensions, providing limited understanding of how these capabilities interact to improve financial performance. Furthermore, empirical evidence from manufacturing firms in developing countries remains limited, despite their greater exposure to supply chain uncertainty and operational risks. Most studies are fragmented and do not explicitly analyze the

mediating role of Supply Chain Risk Management (SCRM) in linking supply chain ambidexterity to financial performance (Alikhani, Torabi, & Altay, 2019).

Furthermore, the research context is predominantly conducted in developed countries and technology-intensive industrial sectors (Allen & Helms, 2006). Therefore, examining this relationship in the Indonesian manufacturing context provides an important perspective on how firms in emerging economies develop supply chain capabilities under uncertain business conditions. The limited number of studies focusing on the manufacturing industry in developing countries represents a significant gap, given that the business environment in developing countries is characterized by higher risk exposure and different supply chain structures. Therefore, Ivanov and Dolgui (2020), (Sodhi et al., 2012), Tao et al. (2022) studies explain the lack of understanding of how the simultaneous implementation of supply chain exploration and exploitation strategies impacts financial performance amid supply chain disruptions, particularly in the manufacturing sector. This study aims to fill this gap by developing an integrative model that examines the influence of exploration and exploitation on financial performance, with SCRM as a mediating variable. Unlike previous studies that primarily focus on direct relationships, this study positions SCRM as a strategic mechanism that explains how supply chain capabilities are translated into improved financial performance. Thus, this research contributes to the supply chain management literature by providing an integrated model linking supply chain ambidexterity, risk management capability, and financial outcomes. Thus, the contribution of this research includes developing the literature on supply chain ambidexterity and SCRM, as well as providing managerial implications for strengthening company competitiveness amidst global uncertainty.

2. Literature Review and Hypotheses Development

Companies must continuously learn and adapt to ever-changing business environments. According to organizational learning theory (Fiol & Lyles, 1985), organizational learning is a systematic process aimed at improving organizational actions by acquiring knowledge and understanding. This process is crucial in the context of supply chain globalization, where disruptions are increasingly complex and unpredictable (Truong, & Hara, 2018; Labiro, & Widjaja, 2024).

Dynamic capabilities theory provides an important theoretical foundation for explaining how organizations develop and adjust their capabilities in response to environmental uncertainty (Teece, Pisano, & Shuen, 1997). From this perspective, supply chain exploration and exploitation represent two strategic capabilities that enable firms to sense environmental changes, seize opportunities, and reconfigure resources to maintain their competitiveness (Gold & Schleper, 2017). Exploration allows firms to develop new knowledge and innovative responses, whereas exploitation enables them to optimize existing resources and improve operational efficiency . Therefore, both capabilities are expected to influence supply chain risk management and ultimately contribute to improved financial performance of the firm. Businesses must continuously modify their operating strategies through exploration and exploitation practices, making these dynamics crucial for supply chain risk management (Sulistyawati, Setyadi, & Nawir, 2022).

2.1 Supply Chain Exploration, Exploitation, and Supply Chain Risk Management

The uncertainty that occurs in the flow of materials, information, and finances has driven SCRM as a strategic component in creating modern business continuity (Chu, Park, & Kremer, 2020; Tao, Li, Ray, & Rebolledo, 2022) . In practice, SCRM focuses not only on activities to detect and mitigate risks but also encompasses activities with an adaptive and responsive approach that can anticipate dynamic and rapid environmental changes. Therefore, companies must adopt a managerial strategy that is not only reactive but also proactively integrates exploration and exploitation in supply chain risk management . From the perspective of dynamic capabilities theory, exploration enables firms to sense emerging supply chain risks by acquiring new knowledge, developing innovative solutions and improving adaptive responses. Therefore, exploration capability is expected to strengthen SCRM practices, particularly in uncertain manufacturing environments.

The two approaches of exploration and exploitation are not mutually exclusive dichotomies but rather complementary strategic dimensions in forming a holistic and resilient risk management system (Cao, Elking, & Gu, 2023). Within the ambidexterity framework, organizations that can balance exploration and exploitation simultaneously demonstrate greater organizational agility in the face of disruption . Exploration plays a crucial role in detecting new risks and designing innovative strategic responses, while exploitation provides efficient operational capabilities through the utilization of proven and stable resources (Cao et al., 2023; Singh, & Hong, 2020).

More specifically, exploration in the supply chain context encompasses various activities, such as observing external environmental dynamics, cross-functional knowledge collaboration, and experimenting with new business models (Dyer, Gregersen, & Christensen, 2011; Tao et al., 2022). This approach aims to strengthen a company's adaptive and innovative capacity in the face of uncertainty and enable the development of proactive strategies to anticipate potential risks that have not yet been explicitly identified (Singh & Hong, 2020). Therefore, exploration practices are positively correlated with the effectiveness of supply chain risk management, particularly in responding to rapid and unpredictable environmental changes.

On the other hand, exploitation emphasizes internal process optimization, operational efficiency, and the maximum utilization of available resources. This strategy is particularly relevant in the context of operational risk management, where system stability and process reliability are key factors in mitigating the impact of risks (Kristal, Huang, & Roth, 2010; Ojha, Acharya, & Cooper, 2018). Exploitation enables organizations to create structured and reliable risk control systems and supports short-term efficiency in managing operational disruptions . A study by Ambulkar, Ralston, Polyviou, and Sanders (2023) supports this view by showing that exploitation directly contributes to strengthening a company's operational structure, which indirectly increases the company's capacity to efficiently manage external risks. In this context, Singh and Hong (2020) assert that exploitation positively contributes to the development of effective SCRM practices.

Referring to various empirical findings and previous theories, it can be concluded that both exploration and exploitation significantly influence the shaping of adaptive and efficient supply chain risk management practices. Therefore, the hypotheses proposed in this study are as follows:

H_1: Supply Chain Exploration has a positive effect on Supply Chain Risk Management

H_2: Supply Chain Exploitation has a positive effect on Supply Chain Risk Management

2.2 Supply Chain Exploration, Exploitation, and Financial Performance

Companies must maintain operational efficiency and adapt to changes in a dynamic and uncertain business environment. Supply chain ambidexterity is a company's ability to manage exploration and exploitation simultaneously, and is also a strategic approach that can be used (Kristal, Huang, & Roth, 2010). Supply chain exploration practices involve the search for new, more innovative, and efficient methods of procurement, production, and distribution. This enables companies to identify improvement opportunities, introduce process innovations, and respond to market dynamics with greater agility and adaptability (Rojo, Llorens-Montes, & Perez-Arostegui, 2016).

Similarly, Asree (2016) stated that exploration in the supply chain encourages innovation that directly contributes to improved financial performance. In fact, Roldán, Maqueira-Marin, and Moyano-Fuentes (2023) found that companies that actively implement exploration in their supply chains exhibit higher Return on Assets (ROA) and Return on Equity (ROE) than companies that rely solely on an exploitative approach. In a broader context, supply chain exploration is linked to strategic value creation through the development of dynamic capabilities that contribute to the sustainability of a company's financial performance, especially in the long term (Chang, Ellinger, Kim, & Franke, 2016). Therefore, exploration serves as a tool for innovation and plays a crucial role in achieving sustainable financial performance.

Conversely, the practice of supply chain exploitation, also known as supply chain exploitation, seeks to maximize the utilization of existing resources and processes to improve operational efficiency and reduce waste(Park, Min, & Min, 2016). Companies can optimize their short-term profits and maintain operational stability using this method . This assertion is supported by research Hoejmose, Roehrich, and Grosvold (2014), which shows that supply chain exploitation improves operational efficiency in the long term, which, in turn, improves financial performance.

In the face of disruption, an exploitative approach also plays a crucial role in maintaining operational continuity and sustaining company profitability (Ambulkar, Ralston, Polyviou, & Sanders, 2023). This is reinforced by findings Naimy, Chedid, and Bitar (2024), which show that supply chain exploitation practices can generate higher Return on Investment (ROI) and profit margins, particularly in situations of efficiency pressure and supplier dominance. Overall, both exploration and exploitation contribute to a company's financial performance. Companies that successfully balance these two approaches tend to exhibit greater strategic agility and financial resilience in the face of external challenges (Kristal et al., 2010; Zou, & Zhang, 2023). Thus, an ambidexterity approach in the supply chain is a crucial strategy for creating sustainable competitive advantage, both in terms of innovation and efficiency.

Based on the theoretical and empirical explanations above, the following hypotheses is formulated:

H_3: Supply chain exploration positively affects financial performance

H_4: Supply chain exploitation has a positive effect on financial performance

2.3 Supply Chain Risk Management and Financial Performance

Studies by Pfohl, Köhler, and Thomas (2010) and Zsidisin, Petkova, Saunders, and Bisseling (2016) show that companies face various risks in an increasingly dynamic and complex business environment. These risks range from market threats, surges in demand, dependence on global suppliers, and external disruptions such as natural disasters, geopolitical conflicts, and pandemics. Therefore, effective management is necessary to mitigate the negative impact of these risks. Companies must implement supply chain risk management strategies to address these issues. These strategies can include proactive risk identification, risk impact assessment, mitigation planning, supplier integration into early warning systems, and human resource training in managing uncertainty (Ghadge, Dani, & Kalawsky, 2012; Khan, & Haymans, 2022). These methods enable organizations to enhance operational and strategic resilience, both of which are critical to maintaining sustainability and financial stability.

A study by Shi and Yu (2013)found that businesses using established SCRM systems could better mitigate financial losses caused by disruptions. Furthermore, Urciuoli and Hintsa (2016) emphasized that implementing supply chain risk management techniques can lead to improved financial performance. This is evident in the reduced disruption costs, increased value chain efficiency, and enhanced customer satisfaction. A study also showed that risk components in supply chain networks negatively impact financial performance. Therefore, implementing risk management practices is crucial for mitigating this negative impact. Furthermore, as explained by , integration between suppliers and companies through SCRM practices makes companies more adaptable to market changes. Ultimately, this will result in improved financial performance in uncertain conditions.

Consequently, supply chain risk management has evolved from simply responding to disruptions to a strategic component that can directly help achieve a company's financial goals. This includes increasing profit margins, Return on Assets (ROA), Return on Investment (ROI), and effective working capital management (Allen, & Helms, 2006; Ghadge et al., 2012) . SCRM also serves as an organizational mechanism. It can generate outcomes from exploration and exploitation, such as supply stability, operational resilience, and cost efficiency. Ultimately, this impacts financial performance (Ambulkar, Ralston, Polyviou, & Sanders, 2023; (Singh & Hong, 2020)).

Based on the theoretical foundation and empirical findings above, the following hypotheses are formulated:

H5: Supply chain risk management has a positive effect on financial performance

H6: Supply Chain Risk Management practices mediate the effect of Supply Chain Exploration on Financial Performance

H7: Supply Chain Risk Management practices mediate the effect of Supply Chain Exploitation on Financial Performance

To understand how the financial performance of manufacturing companies is influenced by theoretical and hypothetical models, Figure 1 presents this model. This model correlates supply chain exploration, exploitation, and risk management with a company's financial performance. Furthermore, this model explains the role of supply chain risk management in mediating the relationship between supply chain exploration and exploitation and financial performance.

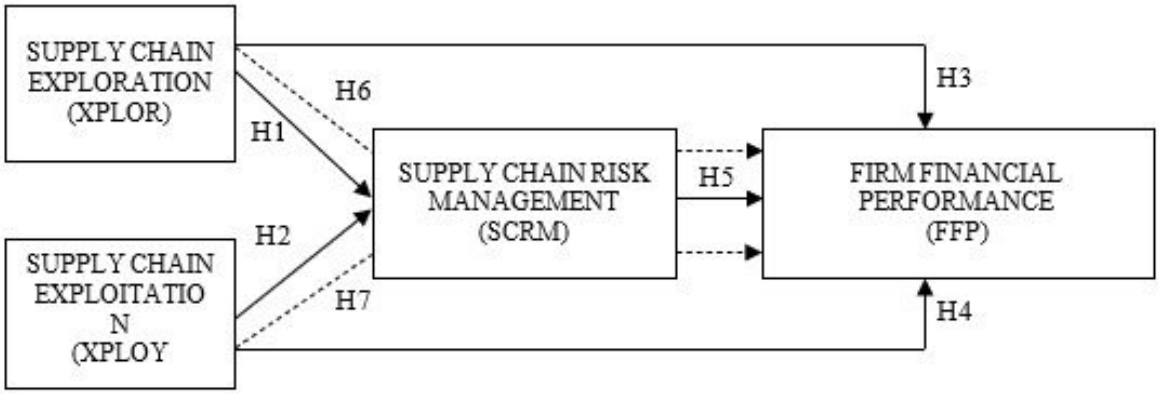


Figure 1. Research model

3. Research Methodology

This study employed a quantitative approach using a survey method and an online, closed-ended questionnaire for data collection, as well as a non-probability sampling technique (Sekaran & Bougie, 2016). Primary data were collected cross-sectionally from decision-makers in manufacturing companies listed on the Indonesia Stock Exchange (IDX). The analysis was conducted descriptively and verifiably to describe the variables and test the relationships between them based on the research hypothesis. The questionnaire instrument in this study used a five-point Likert scale, which is considered optimal for maintaining the reliability and validity of the measurement (Krosnick & Presser, 2010). The quantitative approach was selected because this study aimed to empirically examine the causal relationships among supply chain exploration, supply chain exploitation, supply chain risk management, and financial performance through hypotheses testing.

The population of this study was the executives (managers, general managers, and board members) of manufacturing companies listed on the Indonesia Stock Exchange (IDX), with data obtained from the official IDX website, with respondent profiles as can be seen in Table 1. The sampling technique used was purposive sampling, which involves deliberately selecting respondents based on job title and relevance to the research topic. Manufacturing companies listed on the IDX were selected because this sector is highly exposed to supply chain complexity, including supplier uncertainty, production disruption, and market fluctuations. Therefore, manufacturing firms provide an appropriate context for examining how supply chain capabilities and risk management practices influence financial performance. This approach is expected to produce a representative sample and valid primary data to support the analysis of the relationship between supply chain risk management practices and the financial performance of manufacturing companies.

Sample size determination was performed using the G*Power application to ensure adequate statistical power to detect significant effects. An a priori power analysis was conducted using a

medium effect size parameter ($f^2 = 0.15$), a significance level of $\alpha = 0.05$, and a power of 0.80, in accordance with common standards used in social and business research . The calculation results show that a minimum of 92 respondents is needed to meet the requirements of the Structural Equation Modeling (SEM) analysis used in this study. Respondents were required to have sufficient knowledge and involvement in supply chain-related activities and strategic decision-making processes to ensure the reliability of the collected data.

The measurement of variables in this study refers to previous studies, where XPLOR is measured using four indicators adapted fromIftikhar, Ali, and Stevenson (2024), Kristal, Huang, and Roth (2010), Partanen, Kohtamäki, Patel, and Parida (2020), amd Singh and Hong (2020) while XPLOY is measured through five indicators from the same source; SCRM is measured based on the risk identification, assessment, and mitigation approach adopted from (Singh & Hong, 2020); and FFP is measured using five financial performance indicators in the last three years, as adapted from . The validity and reliability of each indicator and variable are presented in Table 1.

Table 1. Respondent profile

Characteristics	Category	Frequency	Percentage (%)
Gender	Male	67	72.83
	Female	25	27.17
Age	25 - 35 Year	5	5.43
	36 - 45 Year	12	13.04
	46 - 55 Year	71	77.17
	> 55 Year	4	4.35
Education	Diploma	2	2.17
	Bachelor	72	78.26
	Master	17	18.48
	Doctoral	1	1.09
Job Title	Manager	81	88.04
	General Manager	11	11.96
	Director	0	0.00
Industrial Sector	Basic Industry and Chemical Sector	42	45.6
	Miscellaneous Industry Sector	22	23.91
	Consumer Goods Sector	28	30.43

Table 1 illustrates the profile of the study respondents, who were predominantly male (72.83%), with the majority aged between 46 and 55 years (77.17%), indicating extensive experience in their field. Most respondents had a bachelor's degree (78.26%) and held managerial positions (88.04%), reflecting their high level of responsibility within their organizations. In terms of industry, nearly half came from the basic and chemical industries (45.65%), followed by consumer goods and other industries, demonstrating the diversity of the manufacturing sectors involved. This profile confirms that the data collected came from experienced and educated professionals who understood supply chain dynamics across various industrial sectors.

4. Results and Discussions

4.1 Descriptive Analysis

The descriptive statistical analysis of this study presents data characteristics, consisting of sample size, minimum value, maximum value, average (mean), and standard deviation. Table 2 presents the results of the descriptive statistical analysis using SmartPLS version 4.

Table 2. Descriptive statistics

Variables	Number of Observations	Min	Max	Mean	Standard Deviation
FFP	92	-3.073	1.286	0.000	1.000
SCRM	92	-2.903	1.127	0.000	1.000
XPLOR	92	-2.873	1.470	0.000	1.000
XPLOY	92	-3.980	1.735	0.000	1.000

FFP = Firm Financial Performance; SCRM = Supply Chain Risk Management; XPLOR = Supply Chain Exploration; and XPLOY = Supply Chain Exploitation.

Table 2 presents the descriptive statistics in the form of mean, minimum, maximum, and standard deviation values for the four main constructs in this study: FFP, SCRM, XPLOR, and XPLOY. All constructs showed a mean value of 0.000 and a standard deviation of 1.000, indicating that the data underwent a standardization process using z-score transformation before further analysis. This standardization process is a common procedure in Partial Least Squares Structural Equation Modeling (PLS-SEM) to equalize the scale between indicators, maintain the stability of model estimates, and prevent bias due to differences in measurement units (Hair, Hult, Ringle, & Sarstedt, 2022; Henseler, Ringle, & Sarstedt, 2014).

In the context of research exploring the relationship between XPLOR, XPLOY, SCRM, and FFP in manufacturing companies, data standardization is crucial to ensure consistent comparisons between constructs. For example, the XPLOY construct has a minimum value of -3.980 and a maximum of 1.735, while the FFP ranges from -3.073 to 1.286, indicating significant variation across respondents from various manufacturing subsectors. This variation reflects a high degree of data heterogeneity. Therefore, presenting these descriptive statistics provides a general overview of the data distribution and strengthens the methodological validity of using PLS-SEM, particularly in theoretical and exploratory research involving complex latent constructs (Hair et al., 2022).

4.2 Common Method Bias

Common Method Bias (CMB) is a form of bias that occurs when all variables in a study are measured using the same method, which has the potential to cause correlations between variables to be inaccurate or too high due to the influence of the measurement method, not the actual relationship between variables (Podsakoff, MacKenzie, Lee, & Podsakoff, 2003). To detect the possibility of CMB, this study uses the full collinearity test approach as proposed by Kock and Lynn (2012), by calculating the Variance Inflation Factor (VIF) value for all constructs using SmartPLS 4. If all VIF values are below the threshold of 3.3, it can be concluded that the model does not experience pathological collinearity and is free from indications of common method bias. The results of the VIF test are presented in Table 3.

Table 3. Variance Inflation Factor (VIF)

Construct	XPLOR → SCRM	XPLOY → SCRM	XPLOR → FFP	XPLOY → FFP	SCRM → FFP
VIF	1.802	1.802	2.872	1.826	1.881

The VIF table above presents the Variance Inflation Factor (VIF) values as an indicator to detect potential multicollinearity between constructs in the structural model: FFP, SCRM, XPLOR, and XPLOY. All VIF values were recorded below the critical limit of 3.3 (Kock, 2015), with the highest value being 2.872 (XPLOR against FFP) and the lowest being 1.802, indicating that there were no disturbing symptoms of multicollinearity in this model. This means that each construct in the model has an independent contribution and does not significantly influence each other in explaining the dependent variable. This means that there is no common method bias, so that the measurement analysis can be continued.

4.3 Measurement Model Evaluation

The outer model test in the Partial Least Squares Structural Equation Modeling (PLS-SEM) approach aims to evaluate the validity and reliability of latent constructs before testing the relationships between constructs in the structural model . This test is conducted through Confirmatory Composite Analysis (CCA), which includes five main aspects: outer loading to measure the contribution of indicators to the construct, with an ideal value of > 0.708 ; Composite Reliability (CR) and Cronbach's alpha to measure the internal consistency of the construct, with a minimum limit of 0.7 ; Average Variance Extracted (AVE) to test convergent validity, with a threshold of ≥ 0.5 ; discriminant validity, evaluated through the HTMT criteria (< 0.90) ; and (5) ρA (rho_A) as an alternative CR that is more sensitive to composite reliability, with ideal values > 0.7 and < 0.95. The following is Table 4, which is used as a reference for evaluating the estimated loading values and reliability of indicators and testing composite reliability and convergent validity.

Table 4. Confirmatory Composite Analysis

Construct	Indicators			Loading	α	CR	AVE	p-value
Supply Chain Exploration (XPLOR)					0.840	0.867	0.666	
	XPLOR1	:	Seeking new solutions	0.837				0.000
	XPLOR2	:	Exploring opportunities	0.830				0.000
	XPLOR3	:	Innovative approaches	0.800				0.000
	XPLOR4	:	Ideas from various sources	0.795				0.000
Supply Chain Exploration (XPLOY)					0.811	0.829	0.567	
	XPLOY1	:	Responding to change	0.814				0.000
	XPLOY2	:	Focus on efficiency	0.790				0.000
	XPLOY3	:	Strategic priorities	0.659				0.000
	XPLOY4	:	Leverage technology	0.712				0.000
	XPLOY5	:	Develop competencies	0.781				0.000
Supply Chain Risk Management (SCRM)					0.879	0.900	0.732	
	SCRM1	:	Risk collaboration	0.879				0.000
	SCRM2	:	Monitor disruptions	0.840				0.000
	SCRM3	:	Supplier performance	0.820				0.000
	SCRM4	:	Lean supply chain	0.882				0.000
Firm Financial Performance (FFP)					0.879	0.886	0.673	
	FFP1	:	Profitability growth	0.789				0.000
	FFP2	:	Market share increase	0.854				0.000
	FFP3	:	Stable sales growth	0.808				0.000
	FFP4	:	ROA performance achieved	0.870				0.000
	FFP5	:	Stable cash flow	0.778				0.000

Note: α = Cronbach's alpha; CR = Composite reliability (rho_a); AVE = Average variance extracted

Table 4 presents the results of the reliability and convergent validity tests for the constructs Supply Chain Exploration, Supply Chain Exploitation, Supply Chain Risk Management, and Firm Financial Performance. All constructs demonstrated Cronbach's alpha (α) values above 0.70, with a range of 0.811 to 0.879, and Composite Reliability (CR) values above 0.86, indicating excellent internal consistency . Convergent validity tests also demonstrated adequate results, as indicated by the Average Variance Extracted (AVE) values for each construct, which were above the minimum threshold of 0.50 namely XPLOR (0.666), XPLOY (0.567), SCRM (0.732), and FFP (0.673). Furthermore, all indicators within each construct had loading values above 0.70, except for one indicator in XPLOY (XPLOY3 = 0.659), which is still acceptable according to , and significant at $p < 0.01$. These findings confirm that all constructs in the model have adequate validity and reliability, making them suitable for use in further structural model testing.

Table 5. HTMT (Heterotrait-Monotrait Ratio of Correlations)

Variables	XPLOR	XPLOY	SCRM	FFP
Supply Chain Exploration (XPLOR)				
Supply Chain Exploration (XPLOY)	0.370			

Variables	XPLOR	XPLOY	SCRM	FFP
Supply Chain Risk Management (SCRM)	0.408	0.775		
Firm Financial Performance (FFP)	0.072	0.623	0.554	

Table 5 above shows that all inter-construct values are below the threshold of 0.90, indicating that discriminant validity was met in this research model. This means that each tested construct, such as FFP, SCRM, XPLOR, and XPLOY, has clear conceptual differences and does not overlap statistically, in accordance with the criteria suggested by (Henseler, Ringle, & Sarstedt, 2014).

4.4 Structural Model Evaluation

Structural model or inner model testing is conducted to determine the relationship between constructs, the coefficient of determination (R^2), and to test research hypotheses through statistical significance (Hair, Hult, Ringle, & Sarstedt, 2022). The hypothesized relationships among the constructs and the structural paths examined in this study are presented in Figure 2.

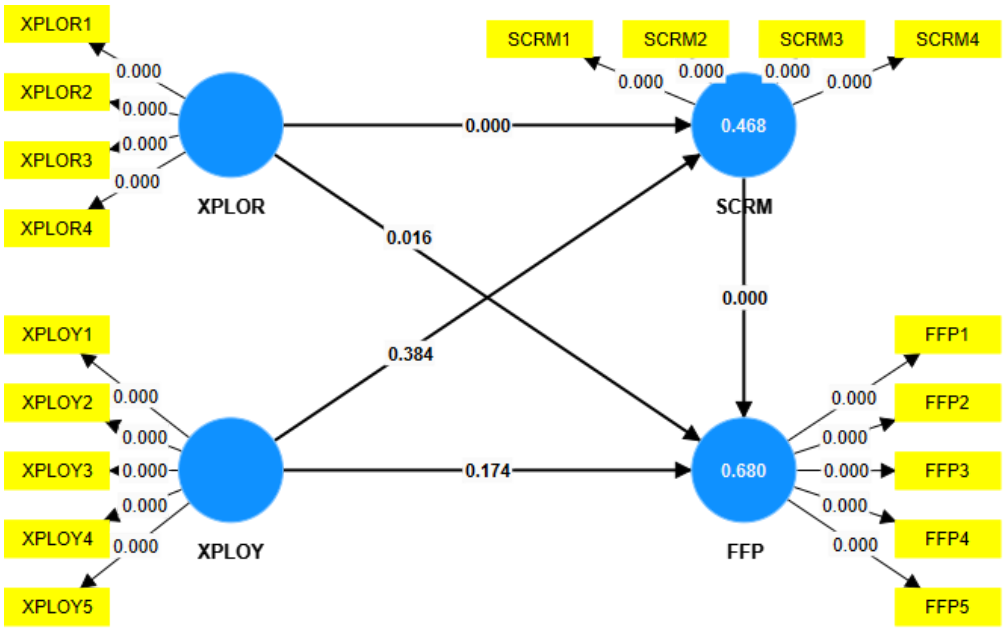


Figure 2. Hypothesized PLS-Path Model

4.5 R-Square and Adjusted Results

The R-square and adjusted R-square values for the two dependent constructs in this research model, namely, FFP and SCRM, are shown. The FFP R-square value of 0.680 indicates that 68% of the variation in the company's financial performance can be explained by the independent variables in the model. Meanwhile, the R-square for SCRM of 0.468 means that 46.8% of the variation in supply chain risk management practices is explained by the constructs that influence it. The adjusted R-square value, which has been adjusted for the number of predictors in the model, is slightly lower but still indicates good predictive power (Chin, 1998; (Hair, Hult, Ringle, Sarstedt, & Thiele, 2017)). In general, these values indicate that the model has moderate to strong explanatory power, especially in the context of PLS-SEM.

4.6 Hypotheses Testing

Hypotheses testing in this study is based on data processing results, considering the t-statistics and p-values. The relationship between variables was considered significant if the t-value exceeded 1.96 (based on a 5% significance level). Furthermore, the hypothesis is accepted if the p-value is less than 0.05 (Hair, Hult, Ringle, & Sarstedt, 2022). Table 6 presents a summary of the research hypothesis testing using Smart PLS 4.

Table 6. Hypotheses testing

Hypotheses	Path	β	t-statistic	p-value	f2	Result
Direct Effect						
H_1	XPLOR ⟶ SCRM	0.754	6.321	0.016	0.594	Accepted
H_2	XPLOY ⟶ SCRM	-0.113	0.871	0.384	0.013	Rejected
H_3	XPLOR ⟶ FFP	0.284	2.400	0.043	0.087	Accepted
H_4	XPLOY ⟶ FFP	0.212	1.361	0.174	0.077	Rejected
H_5	SCRM ⟶ FFP	0.466	5.604	0.000	0.360	Accepted
Indirect Effect						
H_6	XPLOR ⟶ SCRM ⟶ FFP	0.351	3.742	0.000		Accepted
H_7	XPLOY ⟶ SCRM ⟶ FFP	-0.052	0.870	0.385		Rejected

Table 6 shows that the hypothesis testing in this study was conducted through structural model analysis using the bootstrapping method in SMART-PLS. Based on the results of the hypothesis testing, it can be concluded that H_1, H_3, H_5, and H_6 were proven significant and accepted. This means that supply chain exploration practices have a positive effect on supply chain risk management and company financial performance, both directly and indirectly, through the mediating role of risk management. In addition, supply chain risk management has been shown to have a positive effect on financial performance. Meanwhile, H_2, H_4, and H_7 were not significant and were rejected, indicating that supply chain exploitation practices do not significantly affect risk management or company financial performance, either directly or indirectly.

4.7 Direct Effect

The results of the structural model test indicate that Supply Chain Exploration Practices (XPLOR) has a positive and significant effect on Supply Chain Risk Management (SCRM), with a path coefficient of β = 0.754, t-statistic = 6.321, and p-value <0.05. The effect size (f^2) of 0.594 indicates a large effect, according to Cohen (1988), indicating that exploration practices in the supply chain contribute substantially to the effectiveness of supply chain risk management. Furthermore, XPLOR also has a positive and significant effect on FFP (β = 0.284, t-statistic = 2.400, p <0.05), with an effect size of 0.087, indicating a small to medium effect, but still relevant within the company's strategic context.

In contrast, Supply XPLOY showed no significant effect on SCRM (β = -0.113, t-statistic = 0.871, p > 0.05, f^2 = 0.013) or FFP (β = 0.212, t-statistic = 1.361, p > 0.05, f^2 = 0.077). This indicates that supply chain exploitation orientation, in the context of this study, has not significantly contributed to strengthening risk management or improving a company's financial performance. Meanwhile, SCRM has a significant positive effect on FFP, with a coefficient of β = 0.466, t-statistic = 5.604, and p < 0.01. The effect size of 0.360 reflects a substantial influence, confirming that effective risk management in the supply chain plays a crucial role in driving optimal financial performance of the company.

4.8 Indirect Effect

The results of the indirect effect analysis found that XPLOR had a positive and significant effect on FFP through the mediation of SCRM. This mediation path had a β coefficient of 0.351 with a t-statistic value of 3.742 and a p-value of 0.000, indicating full significance. This finding confirms that the role of SCRM is an important mechanism that bridges the influence of explorative practices in the supply chain on improving the company's financial performance. Conversely, the indirect effect of XPLOY on FFP through SCRM was not significant, with a β value of -0.052, a t-statistic of 0.870, and a p-value of 0.385. This indicates that supply chain exploitation practices do not make a significant contribution to improving financial performance through the risk management path in the context of this study.

4.9 Discussion

4.9.1 The Influence of Supply Chain Exploration And Exploitation on Supply Chain Risk Management

The research results show that XPLOR has a positive influence on the effectiveness of SCRM. Companies that actively seek new knowledge, build external collaborations, and conduct strategic experiments tend to be more adaptive in anticipating and responding to supply chain risks. This finding supports the argument that exploration strengthens an organization's ability to navigate turbulent environments (Ojha, Struckell, Acharya, & Patel, 2018; Singh, & Hong, 2020; Tao, Li, Ray, & Rebolledo, 2022). Theoretically, these results reinforce organizational learning theory by Fiol and Lyles (1985), where exploration plays a crucial role in organizational learning, and support the dynamic capabilities theory by Teece, Pisano, and Shuen (1997), where exploration is a catalyst for building adaptive capabilities to disruption. Therefore, exploration is not only relevant in the context of innovation but is also fundamental to building a proactive risk management system based on dynamic capabilities.

In contrast, XPLOY showed no significant influence on SCRM and tended to be negative. While exploitation contributes to operational efficiency (Ambulkar, Ralston, Polyviou, & Sanders, 2023), these findings align with studies highlighting the limitations of exploitation in complex and volatile risk contexts (Alikhani, Torabi, & Altay, 2019). Overreliance on exploitation can reduce flexibility and responsiveness. This reinforces the importance of organizational ambidexterity (Lee & Rha, 2016), namely the balance between exploration and exploitation, in creating supply chain resilience.

4.9.2 The Influence of Supply Chain Exploration And Exploitation on Firm Financial Performance

The results show that XPLOR has a positive effect on FFP. Exploration enables companies to identify new opportunities, increase innovation, and respond adaptively to market changes, ultimately driving competitive advantage and financial sustainability (Asree, 2016, Chang, Ellinger, Kim, & Franke, 2016, Roldán, Maqueira-Marin, & Moyano-Fuentes, 2023). Theoretically, this finding reinforces organizational learning theory by Fiol and Lyles (1985) and dynamic capabilities theory by Teece, Pisano, and Shuen (1997), where exploration plays a crucial role in building adaptive and innovative organizational capabilities amidst the uncertainties of the global business environment.

In contrast, XPLOY did not have a significant effect on FFP. While exploitation can improve short-term efficiency, an excessive focus on exploitation without exploration limits innovation and responsiveness to dynamic markets . These findings emphasize the importance of an organizational ambidexterity approach which a balance between exploration and exploitation is necessary to achieve sustainable financial performance. Theoretically, this study extends the application of dynamic capabilities theory in the context of supply chain strategy, confirming that exploration is a key element in driving corporate financial performance, particularly in the era of global supply chain complexity and uncertainty.

4.9.3 The Influence of Supply Chain Risk Management on Firm Financial Performance

This study found that SCRM has a positive and significant impact on FFP. Effective SCRM implementation has been shown to minimize the impact of disruptions, reduce risk costs, and increase customer satisfaction, thus driving better financial performance (ElHawary, & Elbolok, 2024; Shi, & Yu, 2013; Urciuoli, & Hintsa, 2016). SCRM also contributes to operational efficiency and supply chain stability, which supports corporate sustainability and competitiveness. Theoretically, these findings support organizational learning theory where learning from risk is the foundation of organizational adaptation, and reinforce the dynamic capabilities theory by Fiol and Lyles (1985), which positions SCRM as a dynamic capability to respond quickly and strategically to external changes. Thus, the primary theoretical contribution of this study is to emphasize the role of SCRM not merely as a mitigation tool, but as a strategic driver in improving financial performance and competitive advantage in complex and uncertain business environments.

4.9.4 The Role of Supply Chain Risk Management in Mediating the Effect of Supply Chain Exploration on Firm Financial Performance

This study found that SCRM acts as a significant mediator between XPLOR and FFP. Exploration practices, including the search for new information, cross-functional collaboration, and process innovation, enhance an organization's ability to anticipate and proactively manage risks, which in turn strengthens the effectiveness of SCRM and positively impacts financial performance (Ojha, Acharya, & Cooper, 2018). Exploration also creates new capabilities that facilitate adaptive and innovative risk management, thereby improving financial outcomes. Theoretically, these findings support organizational learning theory and the dynamic capabilities theory, which assert that exploration must be integrated with risk management to maintain competitive advantage and superior performance, especially in the context of global supply chain uncertainty. This study's contribution is to strengthen the understanding that exploration improves financial performance through the mediating role of SCRM as a strategic dynamic capability.

4.9.5 The Role of Supply Chain Risk Management in Mediating the Effect of Supply Chain Exploitation on Firm Financial Performance

This study found that SCRM does not act as a significant mediator in the relationship between XPLOY and FFP. Exploitation practices focused on process optimization and stability do not directly improve risk management effectiveness or significantly impact financial performance through SCRM. This is due to the lack of adaptability of exploitation in addressing dynamic and complex supply chain risks.

Theoretically, this finding demonstrates the limitations of exploitation in building the dynamic capabilities needed to address high uncertainty, even though exploitation is part of dynamic capabilities theory . Therefore, exploitation without integrating exploration and adaptive risk management practices is less effective in improving financial performance through SCRM. This study confirms that not all dimensions of dynamic capabilities play an equal role in risk management and financial performance and highlights the importance of an ambidextrous strategy that balances exploration and exploitation in the context of supply chain risk management.

5. Conclusions

5.1 Conclusion

This study demonstrates that supply chain exploration plays a significant role in strengthening Supply Chain Risk Management (SCRM) and improving firms' financial performance. The findings indicate that exploration capability enables manufacturing firms to develop adaptive responses to supply chain uncertainty, whereas SCRM serves as an important mechanism that translates these capabilities into improved financial outcomes. In contrast, supply chain exploitation does not significantly contribute to SCRM or financial performance, suggesting that efficiency-oriented practices alone may be insufficient in highly uncertain environments.

This study theoretically contributes to supply chain management literature by extending the application of dynamic capabilities theory by demonstrating the strategic role of SCRM as a mediating capability that connects supply chain exploration with financial performance. The findings emphasize that firms need to develop adaptive capabilities beyond operational efficiency to achieve sustainable performance under disruptive supply chain conditions. From a managerial perspective, manufacturing firms should prioritize exploration-oriented strategies, including knowledge development, innovation, and external collaboration, while integrating these capabilities with effective risk management practices. Managers should view SCRM not only as a mitigation mechanism but also as a strategic capability for improving resilience and strengthening financial performance.

5.2 Research Limitations

This study has several limitations. First, the study was conducted only in the manufacturing industry sector, thus limiting the generalizability of the results to other sectors. Second, the cross-sectional research design does not allow for the analysis of long-term relationships between variables such as exploration, exploitation, SCRM, and financial performance. Third, the measurement of

the exploitation variable still has limitations in comprehensively capturing all dimensions of the concept.

5.3 Suggestions and Directions for Future Research

Future research should consider a longitudinal design to capture the dynamic relationships between supply chain ambidexterity, SCRM, and financial performance over time. Methodological improvements are also needed to refine the measurement of supply chain exploitation to ensure greater accuracy and representativeness. Future studies should develop a more comprehensive research model by incorporating contextual variables, including organizational culture, technological capabilities, market dynamics, and external environmental uncertainty. The role of moderating factors, such as competitive pressure and supply chain digitalization, should also be examined to provide deeper insights into the conditions under which ambidextrous supply chain strategies generate superior results. Additionally, comparative studies across different industrial sectors and business environments are encouraged to enhance external validity and theoretical understanding of supply chain ambidexterity.

Acknowledgement

The authors sincerely thank the Institut Transportasi dan Logistik Trisakti for its institutional support during this research. Appreciation is also extended to all respondents for their valuable participation in the data collection process, as well as to colleagues for their continuous intellectual support and constructive feedback, which contributed to the completion of this study.

Author Contributions

SM initiated the research idea and was responsible for the study's conceptualization, research design, and overall project supervision. DAB conducted the formal data analysis using the Partial Least Squares Structural Equation Modeling (PLS-SEM) approach. NN contributed to the preparation of the original manuscript. YA managed the data collection process and assisted in the literature review as well as the technical validation of the research instruments. SM and DAB collaboratively performed critical revisions of the manuscript and refined the theoretical and empirical implications of the study. All authors (SM, DAB, NN, and YA) participated in the final manuscript preparation, reviewed the results, and approved the final version for publication.

References

Alikhani, R., Torabi, S. A., & Altay, N. (2019). Strategic supplier selection under sustainability and risk criteria. *International Journal of Production Economics*, *208*, 69–82. https://doi.org/10.1016/j.ijpe.2018.11.018

Allen, R. S., & Helms, M. M. (2006). Linking strategic practices and organizational performance to Porter's generic strategies. *Business Process Management Journal*, *12*(4), 433-454. https://doi.org/10.1108/14637150610678069

Ambulkar, S., Ralston, P. M., Polyviou, M., & Sanders, N. (2023). Frequent supply chain disruptions and firm performance: The moderating role of exploitation, exploration and supply chain ambidexterity. *International Journal of Physical Distribution and Logistics Management*, *53*(10), 1261-1285. https://doi.org/10.1108/IJPDLM-01-2023-0051

Annamalah, S., Paraman, P., Ahmed, S., Pertheban, T. R., Marimuthu, A., Venkatachalam, K. R., & T, R. (2023). Exploitation, exploration and ambidextrous strategies of SMES in accelerating organisational effectiveness. *Journal of Global Operations and Strategic Sourcing*. https://doi.org/10.1108/JGOSS-08-2022-0090

Asree, S. (2016). Ambidextrous supply chain in an emerging market: Impacts on innovation and performance. *In Int. J. Supply Chain and Operations Resilience*, *2*(1).

Benitez, J., Henseler, J., Castillo, A., & Schuberth, F. (2020). How to perform and report an impactful analysis using partial least squares: Guidelines for confirmatory and explanatory IS research. *Information and Management*, *57*(2). https://doi.org/10.1016/j.im.2019.05.003

Cao, R. Q., Elking, I., & Gu, V. C. (2023). Supply chain driven sustainability: Ambidexterity, authentic leadership and interorganizational citizenship behavior. *International Journal of Logistics Management*, *34*(6), 1736-1758. https://doi.org/10.1108/IJLM-04-2022-0153

Chang, W., Ellinger, A. E., Kim, K. K., & Franke, G. R. (2016). Supply chain integration and firm financial performance: A meta-analysis of positional advantage mediation and moderating factors. *European Management Journal*, *34*(3), 282-295. https://doi.org/10.1016/j.emj.2015.11.008

Chin, W. W. (1998). *The partial least squares approach to structural equation modelling*. NJ: Laweence Erlbaum Associates Publishers.

Christopher, M. (2016). *Logistics and supply chain management* (5th ed.).

Christopher, M., & Peck, H. (2004). Building the resilient supply chain. *International Journal of Logistics Management*, *15*(2), 1-13.

Chu, C. Y., Park, K., & Kremer, G. E. (2020). A global supply chain risk management framework: An application of text-mining to identify region-specific supply chain risks. *Advanced Engineering Informatics*, *45*. https://doi.org/10.1016/j.aei.2020.101053

Cohen, J. (1988). *Statistical power analysis for behavioral sciences* (2nd ed). NJ: Erlbaum.

Dyer, J. H., Gregersen, H. B., & Christensen, C. M. (2011). *The innovator's DNA: Mastering the five skills of disruptive innovators*. Boston: Harvard Business Review Press.

ElHawary, E., & Elbolok, R. (2024). The implications of COVID-19 on ESG performance and financial reporting quality in Egypt. *Journal of Financial Reporting and Accounting*. https://doi.org/10.1108/JFRA-08-2023-0469

Fiol, C. M., & Lyles, M. A. (1985). Organization learning. *The Academy of Management Review*, *10*(4), 803-813.

Ghadge, A., Dani, S., & Kalawsky, R. (2012). Supply chain risk management: Present and future scope. *In The International Journal of Logistics Management*, *23*(3), 313–339. https://doi.org/10.1108/09574091211289200

Gligor, D., Feizabadi, J., Russo, I., Maloni, M. J., & Goldsby, T. J. (2020). The triple-a supply chain and strategic resources: Developing competitive advantage. *International Journal of Physical Distribution and Logistics Management*, *50*(2), 159-190. https://doi.org/10.1108/IJPDLM-08-2019-0258

Gold, S., & Schleper, M. C. (2017). A pathway towards true sustainability: A recognition foundation of sustainable supply chain management. *European Management Journal*, *35*(4), 425-429. https://doi.org/10.1016/j.emj.2017.06.008

Gölgeci, I., & Kuivalainen, O. (2020). Does social capital matter for supply chain resilience? The role of absorptive capacity and marketing-supply chain management alignment. *Industrial Marketing Management*, *84*, 63–74. https://doi.org/10.1016/j.indmarman.2019.05.006

Hair, J. F., Hult, G. T. M., Ringle, C. M., & Sarstedt, M. (2022). *A primer on partial least squares structural equation modeling (PLS-SEM)*. Sage Publishing.

Hair, J. F., Hult, G. T. M., Ringle, C. M., Sarstedt, M., & Thiele, K. O. (2017). Mirror, mirror on the wall: A comparative evaluation of composite-based structural equation modeling methods. *Journal of the Academy of Marketing Science*, *45*(5), 616-632. https://doi.org/10.1007/s11747-017-0517-x

Henseler, J., Ringle, C. M., & Sarstedt, M. (2014). A new criterion for assessing discriminant validity in variance-based structural equation modeling. *Journal of the Academy of Marketing Science*, *43*(1), 115-135. https://doi.org/10.1007/s11747-014-0403-8

Hoejmose, S. U., Roehrich, J. K., & Grosvold, J. (2014). Is doing more doing better? The relationship between responsible supply chain management and corporate reputation. *Industrial Marketing Management*, *43*(1), 77-90. https://doi.org/10.1016/j.indmarman.2013.10.002

Hofmann, E., Sternberg, H., Chen, H., Pflaum, A., & Prockl, G. (2019). Supply chain management and Industry 4.0: Conducting research in the digital age. *International Journal of Physical Distribution and Logistics Management*, *49*(10), 945–955. https://doi.org/10.1108/IJPDLM-11-2019-399

Iftikhar, A., Ali, I., & Stevenson, M. (2024). The silver lining of supply chain complexity: Building supply chain resilience and robustness through exploitation and exploration. *Supply Chain Management*, *29*(2), 244-259. https://doi.org/10.1108/SCM-01-2023-0022

Ivanov, D., & Dolgui, A. (2020). Viability of intertwined supply networks: Extending the supply chain resilience an-gles towards survivability. *A Position Paper Motivated by COVID-19 Outbreak. International Journal of Production Research*.

Khan, M. A., & Haymans Manurung, A. (2022). Corporate Social Responsibility(CSR) Evaluation & effectiveness of disclosure and its impact on financial performance: A case of Indonesian corporations by longitudinal evidence. *Studi Ilmu Manajemen Dan Organisasi*, *3*(1), 233-242. https://doi.org/10.35912/simo.v3i1.709

Kock, N. (2015). Common method bias in PLS-SEM: A full collinearity assessment approach. *International Journal of E-Collaboration*, *11*(4), 1-10.

Kock, N., & Lynn, G. S. (2012). Lateral collinearity and misleading results in variance-based SEM: An illustration and recommendations. *Journal of the Association for Information Systems*, *13*(7), 546-580. https://doi.org/10.17705/1jais.00302

Kristal, M. M., Huang, X., & Roth, A. V. (2010). The effect of an ambidextrous supply chain strategy on combinative competitive capabilities and business performance. *Journal of Operations Management*, *28*(5), 415-429. https://doi.org/10.1016/j.jom.2009.12.002

Krosnick, J. A., & Presser, S. (2010). *Handbook of survey research* (Emerald Group Publishing).

Labiro, K. A. C. ., & Widjaja, W. (2024). Pengaruh keaktifan berorganisasi, prestasi akademik, lingkungan belajar terhadap kesiapan kerja Universitas Tangerang. *Studi Ilmu Manajemen Dan Organisasi*, *5*(1), 27-42. https://doi.org/10.35912/simo.v5i1.2958

Lee, S. M., & Rha, J. S. (2016). Ambidextrous supply chain as a dynamic capability: Building a resilient supply chain. *Management Decision*, *54*(1), 2-23. https://doi.org/10.1108/MD-12-2014-0674

March, J. G. (1991). Exploration and exploitation in organizational learning. *Organization Science*, *2*(1), 71-87. https://doi.org/10.1287/orsc.2.1.71

Naimy, V., Chedid, T. A., & Bitar, N. (2024). Econometric analysis of supply chain disruptions: Financial performance in the European automotive sector. *Electronic Research Archive*, *32*(8), 5010-5032. https://doi.org/10.3934/era.2024231

Nathania, J. A. ., & Wijaya, S. (2024). Pengaruh Kompensasi, Budaya Organisasi dan Motivasi terhadap Retensi Karyawan pada Store Maxx Coffee Tangerang. *Studi Ilmu Manajemen Dan Organisasi*, *5*(1), 43-54. https://doi.org/10.35912/simo.v5i1.3027

Ojha, D., Acharya, C., & Cooper, D. (2018). Transformational leadership and supply chain ambidexterity: Mediating role of supply chain organizational learning and moderating role of uncertainty. *In College of Staten Island*. Retrieved from https://academicworks.cuny.edu/si_pubs/197Discoveradditionalworksat:https://academicworks.cuny.edu

Ojha, D., Struckell, E., Acharya, C., & Patel, P. C. (2018). Supply chain organizational learning, exploration, exploitation, and firm performance: A creation-dispersion perspective. *International Journal of Production Economics*, *204*, 70–82. https://doi.org/10.1016/j.ijpe.2018.07.025

O'Reilly, C. A., & Tushman, M. L. (2004). The ambidextrous organization. *Harvard Business Review*, *82*(4), 74-81.

Park, K., Min, H., & Min, S. (2016). Inter-relationship among risk taking propensity, supply chain security practices, and supply chain disruption occurrence. *Journal of Purchasing and Supply Management*, *22*(2), 120-130. https://doi.org/10.1016/j.pursup.2015.12.001

Partanen, J., Kohtamäki, M., Patel, P. C., & Parida, V. (2020). Supply chain ambidexterity and manufacturing SME performance: The moderating roles of network capability and strategic information flow. *International Journal of Production Economics*, *221*. https://doi.org/10.1016/j.ijpe.2019.08.005

Pfohl, H. C., Köhler, H., & Thomas, D. (2010). State of the art in supply chain risk management research: Empirical and conceptual findings and a roadmap for the implementation in practice. *Logistics Research*, *2*(1), 33-44. https://doi.org/10.1007/s12159-010-0023-8

Podsakoff, P. M., MacKenzie, S. B., Lee, J.-Y., & Podsakoff, N. P. (2003). Common method biases in behavioral research: A critical review of the literature and recommended remedies. *Journal of Applied Psycology*, *88*(5), 879-903. https://doi.org/10.1037/0021-9010.88.5.879

Rojo, A., Llorens-Montes, J., & Perez-Arostegui, M. N. (2016). The impact of ambidexterity on supply chain flexibility fit. *Supply Chain Management*, *21*(4), 433-452. https://doi.org/10.1108/SCM-08-2015-0328

Roldán Bravo, M. I., Maqueira-Marin, J. M., & Moyano-Fuentes, J. (2023). Supply chain 4.0 ambidexterity and lean supply chain management: Interrelationships and effect on the focal firm's operational performance. *Supply Chain Management*, *28*(7), 112-128. https://doi.org/10.1108/SCM-05-2023-0274

Sekaran, U., & Bougie, R. (2016). *Research methods for business: A skill-building approach*.

Shi, M., & Yu, W. (2013). Supply chain management and financial performance: Literature review and future directions. *In International Journal of Operations and Production Management*, *33*(10), 1283–1317. https://doi.org/10.1108/IJOPM-03-2012-0112

Singh, N. P., & Hong, P. C. (2020). Impact of strategic and operational risk management practices on firm performance: An empirical investigation. *European Management Journal*, *38*(5), 723-735. https://doi.org/10.1016/j.emj.2020.03.003

Sodhi, M. S., Son, B. G., & Tang, C. S. (2012). Researchers' perspectives on supply chain risk management. *Production and Operations Management*, *21*(1), 1-13. https://doi.org/10.1111/j.1937-5956.2011.01251.x

Sulistyawati, N., Setyadi, I. K., & Nawir, J. (2022). Pengaruh lingkungan kerja, budaya organisasi dan kepemimpinan transformasional terhadap kepuasan kerja karyawan millenial. *Studi Ilmu Manajemen Dan Organisasi*, *3*(1), 183-197. https://doi.org/10.35912/simo.v3i1.680

Taleb, N. N. (2010). *The Black Swan: The Impact of the highly Imporable (2nd ed)*.

Tang, C. S. (2006). Perspectives in supply chain risk management. *In International Journal of Production Economics*, *103*(2), 451–488. https://doi.org/10.1016/j.ijpe.2005.12.006

Tao, Z., Li, S., Ray, S., & Rebolledo, C. (2022). Manufacturers' tailored responses to powerful supply chain partners. *Supply Chain Management*, *27*(3), 431-450. https://doi.org/10.1108/SCM-06-2020-0235

Teece, D. J., Pisano, G., & Shuen, A. (1997). Dynamic capabilities and Strategic Management. *Strategic Management Journal*, *18*(7), 509-533.

Truong, H. Q., & Hara, Y. (2018). Supply chain risk management: Manufacturing- and service-oriented firms. *Journal of Manufacturing Technology Management*, *29*(2), 218-239. https://doi.org/10.1108/JMTM-07-2017-0145

Urciuoli, L., & Hintsa, J. (2016). Differences in security risk perceptions between logistics companies and cargo owners. *International Journal of Logistics Management*, *27*(2), 418-437. https://doi.org/10.1108/IJLM-02-2014-0034

Wieland, A., & Marcus Wallenburg, C. (2012). Dealing with supply chain risks: Linking risk management practices and strategies to performance. *International Journal of Physical Distribution & Logistics Management*, *42*(10), 887-905. https://doi.org/10.1108/09600031211281411

Zou, M., & Zhang, X. (2023). Supply chain concentration and corporate financialization. *Frontiers in Psycology*.

Zsidisin, G. A., Petkova, B., Saunders, L. W., & Bisseling, M. (2016). Identifying and managing supply quality risk. *International Journal of Logistics Management*, *27*(3), 908-930.