Risk Management in Global Supply Chains: An Empirical Study of Multinational Corporations

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ABSTRACT

In the era of globalization and supply chain complexity, risk management has become crucial for multinational companies to maintain operational resilience. This research identifies gaps in the understanding and implementation of effective risk management strategies in the sector. This research aims to analyze the influence of risk identification capabilities and risk mitigation strategies on supply chain resilience in multinational companies. A quantitative approach was used with a 5-point Likert scale-based questionnaire survey to collect data from executives and managers at MAP. Multiple linear regression analysis was applied to test the relationship between independent and dependent variables. The findings show that risk identification capabilities and risk mitigation strategies have a significant influence on supply chain resilience, with respective contributions of 41.8% and 31.4%. These results emphasize the importance of proactive risk management in improving operational resilience. This research makes a significant contribution to risk management theory and practice in the retail sector, with recommendations for adopting a systematic approach in risk mapping and developing adaptive mitigation strategies.

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Keywords*: Mitigation Strategy, Multinational Companies, Risk Identification Capability, Risk Management, Supply Chain Disruptions, Supply Chain Resilience.*

ABSTRAK

Dalam era globalisasi dan kompleksitas rantai pasok, manajemen risiko menjadi krusial bagi perusahaan multinasional untuk menjaga ketahanan operasional. Penelitian ini mengidentifikasi kesenjangan dalam pemahaman dan penerapan strategi manajemen risiko yang efektif di sektor ini. Penelitian ini bertujuan untuk menganalisis pengaruh kapabilitas identifikasi risiko dan strategi mitigasi risiko terhadap ketahanan rantai pasok di perusahaan multinasional. Pendekatan kuantitatif digunakan dengan survei kuesioner berbasis skala Likert 5 poin untuk mengumpulkan data dari eksekutif dan manajer di MAP. Analisis regresi linear berganda diterapkan untuk menguji hubungan antara variabel independen dan dependen. Temuan menunjukkan bahwa kapabilitas identifikasi risiko dan strategi mitigasi risiko memiliki pengaruh signifikan terhadap ketahanan rantai pasok, dengan kontribusi masing-masing sebesar 41.8% dan 31.4%. Hasil ini menegaskan pentingnya manajemen risiko yang proaktif dalam meningkatkan ketahanan operasional. Penelitian ini memberikan kontribusi signifikan terhadap teori manajemen risiko dan praktik di sektor ritel, dengan rekomendasi untuk mengadopsi pendekatan sistematis dalam pemetaan risiko dan pengembangan strategi mitigasi yang adaptif.

Kata kunci*: Strategi Mitigasi, Perusahaan Multinasional, Kemampuan Identifikasi Risiko, Manajemen Risiko, Gangguan Rantai Pasokan, Ketahanan Rantai Pasokan.*

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INTRODUCTION

Economic globalization and technological innovation have driven the expansion and complexity of global supply chains, making them central to multinational companies' operations. These supply chains offer production efficiency, market reach, and cost optimization, yet their complexity brings vulnerabilities such as geopolitical tensions, natural disasters, economic shocks, and health crises (Ponomarov & Holcomb, 2009; Melnyk, 2014; Yao, 2018; McDougall et al., 2022; Wieland et al., 2023). These disruptions can severely affect the continuous flow of goods and services. Research by Todo et al. (2014) highlights how resilient supply chain configurations mitigate output losses during disasters, while Gunessee et al. (2018) stress that lean models increase vulnerability to such events, reinforcing the need for robust risk strategies. Beyond natural disasters, supply chains face additional threats from geopolitical shifts and economic fluctuations. Inoue and Todo (2020) and Zhu et al. (2021) explain how economic shocks travel through global supply networks, emphasizing the need for deeper understanding of these linkages. Ma et al. (2014) and Karutz et al. (2018) further argue that globalization amplifies existing vulnerabilities, thus necessitating a holistic and integrated risk mitigation approach across supplier networks.

This research addresses that gap by empirically investigating how Risk Identification Capability and Risk Mitigation Strategies Influence Supply Chain Resilience (SCR) in multinational operations. Drawing from the Dynamic Capabilities Framework, this study positions SCR not only as an operational concern but as a strategic capability rooted in a firm's ability to sense, adapt, and respond to external shocks (Wieland & Durach, 2021; Wicaksana et al., 2022). Although past studies have examined supply chain risk in developed economies, there is limited empirical research that analyzes how these capabilities function in emerging markets like Indonesia particularly in the retail fashion sector, which is highly dependent on agile global supply networks (Pettit et al., 2013; Min & Chin, 2021; Lin et al., 2023; Roup & Effendy, 2025). To enrich the empirical relevance, this study examines the case of PT Mitra Adiperkasa (MAP) Indonesia's leading retail group and its partnership with Inditex (Zara). Zara is globally recognized for its agile, vertically integrated supply chain model, while MAP provides a localized operational context shaped by Indonesia's infrastructure, policy, and market volatility. By exploring this intersection, the study provides unique insights into how global risk frameworks are adapted, implemented, and challenged in the Global South (Novak et al., 2021; Jing & Hong-bing, 2024). This not only strengthens practical relevance but also contributes to the theoretical development of SCR under diverse institutional conditions.

Effective risk management centered on identification and mitigation is crucial for enhancing supply chain resilience, especially in today's environment of global disruptions. Wieland and Durach (2021) underscore that resilience significantly improves when companies adopt comprehensive risk management practices. Yang and Nian (2023) and Zhao (2023) affirms that firms exhibiting flexibility and responsiveness are better able to withstand shocks like COVID-19. Similarly, Jidda et al. (2025) emphasize that incorporating enterprise risk management strengthens resilience. Norrman and Lindroth (2004) and Güngör et al. (2022) support this view, noting that both proactive and reactive strategies helped improve supply chain speed and recovery during the pandemic. The alignment of risk mitigation with agility is also essential. Hsieh et al. (2023) note that environmental risk assessments facilitate the connection between agility and resilience. Krimi et al. (2024) argue that effective risk management not only secures competitiveness but also creates adaptive supply chains capable of facing volatile conditions. The Supply Chain Risk Management Process (SCRMP) process, as outlined by Tummala and Schoenherr (2011), along with Gupta (2014), promotes continuous evaluation and adaptation of risk strategies, fostering organizational preparedness and agility. Xue et al. (2021) further point out that understanding the complex interplay of internal and external risks is vital for sustaining supply chain performance in uncertain environments. This comprehensive approach reinforces that resilience is not solely based on operational

efficiency but is deeply connected to an organization's ability to dynamically respond to change.

This study investigates how Risk Identification Capability and Risk Mitigation Strategies affect Supply Chain Resilience in multinational corporations. It contributes to the dynamic capabilities framework by showing that resilience depends on a firm's ability to anticipate and adapt to external uncertainties, not just internal efficiency. Practically, the research offers guidance for managers to implement structured risk mapping, adopt predictive technologies, and develop scenario-based strategies to enhance adaptability in an increasingly volatile global environment.

LITERATURE REVIEW & HYPOTHESIS DEVELOPMENT

Risk Identification Capability and Supply Chain Resilience

The increasing complexity of global supply chains, driven by globalization, innovation, and disruptions like the COVID-19 pandemic, has significantly elevated multinational firms' exposure to diverse and unpredictable risks (Shi, 2004; Khan & Burnes, 2007; Vanany et al., 2009; Bandaly et al., 2012; Norrman & Wieland, 2020). In this environment, Risk Identification Capability (RIC) emerges as a foundational element in strengthening SCR. Firms with strong RIC can anticipate, detect, and assess risks early enabling proactive responses that minimize operational disruption (Carvalho et al., 2021; Zhao, 2023; Han & Um, 2024). Effective RIC enhances flexibility and responsiveness two key dimensions of SCR. According to Chen et al. (2017) and Tokui et al. (2017), organizations that identify risks accurately are more likely to implement timely and appropriate mitigation strategies. Similarly, Um and Han (2021) and Jidda et al. (2025) emphasize that embedding enterprise risk management dimensions including RIC within supply chains improves preparedness and continuity under stress. This view is supported by empirical findings from Güngör et al. (2022) and Hamidu et al. (2023), who demonstrate that organizations engaging in proactive and reactive resilience-building activities based on accurate risk identification achieved faster recovery and better supply chain adaptability during the pandemic.

The application of structured approaches such as the Supply Chain Risk Management Process (SCRMP) further strengthens risk identification. As Tummala and Schoenherr (2011) and Kashiwagi et al. (2021) explain, SCRMP enables firms to systematically detect, evaluate, and prepare for threats. Son et al. (2021) and Wieland and Durach (2021) argue that the ability to identify internal and external risk interactions is critical for building dynamic and resilient supply systems.

H1: Risk identification capability has a significant effect on supply chain resilience.

Risk Mitigation Strategies and Supply Chain Resilience

Global supply chains, while delivering efficiency and market reach, are increasingly vulnerable to economic volatility, natural disasters, and geopolitical tensions (Altay & Ramirez, 2010; Abe & Ye, 2013; Tukamuhabwa et al., 2015; Hendricks et al., 2020). In this context, Risk Mitigation Strategies (RMS) play a crucial role in maintaining continuity and enhancing SCR. Unlike risk identification, which emphasizes early recognition, mitigation strategies focus on implementing structured measures to reduce the likelihood and impact of risks when they materialize (Zhao et al., 2022; Rashid et al., 2024). Gunessee et al. (2018) and Kumar and Anbanandam (2020) highlight how lean supply chain models, although efficient, tend to be fragile making firms more susceptible to disruptions. This underscores the importance of robust mitigation approaches that strengthen resilience while preserving agility (Blackhurst et al., 2011; Cohen et al., 2022; Febrianto et al., 2024). Gupta (2014) and Chowdhury and Quaddus (2016) argue that embedding mitigation frameworks into routine operations creates a culture of preparedness, enabling firms to respond swiftly and effectively under crisis conditions.

SCRMP, as emphasized by Tummala and Schoenherr (2011), facilitates structured mitigation through risk mapping, scenario planning, and contingency development.

Hsieh et al. (2023) add that aligning mitigation with supply chain agility enhances adaptive capacity, while Sá et al. (2020) and Krimi et al. (2024) note that effective mitigation sustains competitive advantage in volatile environments. Furthermore, Liu et al. (2015) and Wieland and Durach (2021) advocate for integrated approaches where mitigation strategies account for both internal capabilities and external pressures to ensure holistic resilience.

H2: Risk mitigation strategies have a significant effect on supply chain resilience.

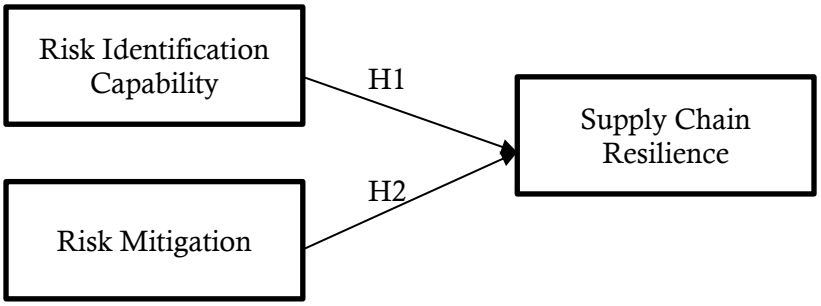

Figure 1. Framework

Figure 1 is a conceptual framework that describes the relationship between two independent variables, namely Risk Identification and Risk Mitigation Capabilities, to one dependent variable, namely Supply Chain Resilience. In this model, there are two main hypotheses carried by arrows pointing to Supply Chain Resilience. The first hypothesis (H1) states that the organization's ability to proactively identify risks contributes to increasing supply chain resilience. Meanwhile, the second hypothesis (H2) states that the implementation of effective risk mitigation strategies also has a positive influence on supply chain resilience. Thus, this framework emphasizes that both risk identification and risk mitigation are important factors in building a resilient supply chain amidst the dynamics of a global network.

RESEARCH METHOD

This research employs a quantitative approach using questionnaire surveys as the primary data collection instrument. The quantitative method enables a structured and objective analysis of the relationships between Risk Identification Capability, Risk Mitigation Strategies, and Supply Chain Resilience. The structured questionnaire is designed using a 5-point Likert scale to capture respondents' perceptions on relevant indicators, ranging from "strongly disagree" to "strongly agree." This scaling method is intended to accurately reflect the attitudes, knowledge, and perceptions of managers and executives regarding the capability of their organizations to manage risk and enhance supply chain resilience. The population in this study comprises multinational companies operating across borders, with a focus on firms managing complex global supply chains. These companies are selected due to their exposure to a wide array of supply chain risks, both operational and external, making them ideal subjects for assessing the effectiveness of risk identification and mitigation strategies. One such company, PT Mitra Adiperkasa Tbk (MAP), which manages Inditex (Zara) operations in Indonesia, is chosen as a case example. With its extensive experience in global supply chain management and the implementation of risk management strategies, MAP provides a relevant context for exploring the research variables.

The research instrument includes three key variables. The Risk Identification Capability variable assesses a company's ability to recognize diverse risks, including logistical, operational, and external threats such as geopolitical and environmental disruptions. The Risk Mitigation Strategies variable measures the organizational actions taken to address these risks, such as supplier diversification, predictive technology

application, and formalized risk management frameworks. The dependent variable, Supply Chain Resilience, captures a company's ability to recover from disruptions and manage uncertainty effectively, encompassing both reactive and proactive capabilities to maintain performance during crises. Measurement items for each variable are adapted from authoritative sources such as the Business Continuity Institute (BCI) and McKinsey & Company, which have developed well-established indicators frequently used in global supply chain risk research. These indicators have been modified to suit the Indonesian business context and the characteristics of the selected companies.

The data analysis comprises two key stages. First, a validity and reliability test will be conducted using Confirmatory Factor Analysis (CFA) to assess construct validity and Cronbach's Alpha to ensure internal consistency. A Cronbach's Alpha value above 0.7 indicates acceptable reliability. Second, Multiple Linear Regression Analysis will be employed to examine the simultaneous influence of Risk Identification Capability and Risk Mitigation Strategies on Supply Chain Resilience. This analysis will quantify the relative contribution of each independent variable to resilience and determine whether their influence is statistically significant in the context of multinational companies operating in Indonesia.

RESULTS

This study focuses on PT Mitra Adiperkasa Tbk (MAP), a leading retail company in Indonesia that manages various international brands such as Zara, Nike, and Starbucks. As a player in the retail sector, MAP operates a highly complex global supply chain encompassing procurement, distribution, and marketing activities. Due to the nature of its operations, the company faces significant risks and disruptions across its international supply chain networks. All respondents involved in this research are professionals within the retail industry, specifically those affiliated with the various brands under MAP. Therefore, the analysis is firmly rooted in the retail context and reflects the specific supply chain challenges encountered in this sector.

The respondents in this study were professionals directly involved in supply chain planning, risk management, and strategic decision-making at PT Mitra Adiperkasa Tbk (MAP). The majority (50%) were Supply Chain Managers, followed by Risk Managers (20%), C-level executives (15%), Procurement Managers (10%), and others such as Analysts and Coordinators (5%). This distribution captures diverse managerial perspectives relevant to supply chain resilience. In terms of experience, 40% of respondents had over 10 years in the retail industry, 35% had 5–10 years, 20% had 1–5 years, and 5% had less than one year. The predominance of respondents with over five years of experience ensures a balanced understanding of strategic and operational challenges, including supply disruptions, and provides a solid foundation for analyzing risk identification and mitigation practices within MAP's global retail supply chain.

Table 1. Descriptive Statistics

Variable	Mean	Standard Deviation (SD)
Risk Identification Capability	4.1	0.75
Risk Mitigation Strategies	3.85	0.82
Supply Chain Resilience	4.15	0.71

Based on Table 1, the results of descriptive statistics show that Risk Identification Capability PT Mitra Adiperkasa Tbk (MAP) obtained a fairly high mean value, namely 4.15, which indicates that in general the company has a good ability to identify risks in their supply chain. However, there is slight variation in respondents' perceptions of this risk identification ability, which is reflected in standard deviation as big as 0.75. This indicates that there are different views regarding the extent to which companies have succeeded in identifying potential risks that may occur in the global supply chain. Meanwhile, Risk Mitigation Strategies has a mean value 3.85, which illustrates that the

company has implemented several quite effective risk mitigation strategies. However, this value also shows that there is still room for improvement, especially in terms of consistency and implementation of risk mitigation strategies in various parts of the company. This is reflected in standard deviation relatively higher (0.82), which shows variations in respondents' opinions regarding the effectiveness and sustainability of mitigation strategies implemented by companies.

Finally, Supply Chain Resilience obtained the highest mean value, namely 4.15, which shows that the company has an excellent level of supply chain resilience. Respondents generally felt that companies were able to quickly recover after disruptions in the supply chain. Mark standard deviation the lower (0.71) also indicates a higher level of uniformity of opinion among respondents regarding the resilience of the company's supply chain, indicating that the majority of respondents agree that the company has good capabilities in facing and overcoming disruptions.

Table 2. Validity Test

Variable	Item	Factor Loading
Risk Identification Capability	Effective system for identifying risks	0.76
	Risk analysis is carried out regularly	0.81
	Training managers and staff in risk identification	0.79
	Use of data for risk prediction	0.83
Risk Mitigation Strategies	Clear risk mitigation plan	0.71
	Review and update of risk mitigation strategies	0.78
	Implementation of risk mitigation measures	0.75
Supply Chain Resilience	Ability to resolve disturbances quickly	0.85
	Rapid recovery from supply chain disruptions	0.87
	Flexibility in sources of supply or distribution	0.89

Table 2 presents the Risk Identification Capability shows consistent results with quite high factor loading values for each item (above 0.75). This indicates that companies have a good ability to identify risks along their supply chains, with the use of data for risk prediction (Item 4) showing the strongest influence on this variable. Risk Mitigation Strategies also shows a fairly high factor loading value even though there is one item that has a slightly lower factor loading, namely Item 1 (0.71). This suggests that even if a company has a clear risk mitigation plan, it is possible to improve the effectiveness or implement the plan more consistently across the company. Supply Chain Resilience shows very good results with very high factor loading values for each item (above 0.85), which indicates that the company has excellent supply chain resilience, is able to overcome disruptions quickly and recover efficiently from disruptions that occur. Overall, the factor loading values obtained indicate that the instruments used to measure each variable in this study have good validity and can be trusted for further analysis.

Table 3. Reliability Test

Variable	Cronbach's Alpha
Risk Identification Capability	0.82
Risk Mitigation Strategies	0.79
Supply Chain Resilience	0.88

Table 3 describes the results of reliability tests using Cronbach's Alpha for each variable in the research. Risk Identification Capability has a Cronbach's Alpha value of 0.82, which indicates a good level of reliability, because a Cronbach's Alpha value above 0.7 is considered to indicate acceptable internal consistency. This indicates that the items measuring risk identification capabilities within the company provide consistent and reliable results. Risk Mitigation Strategies has a Cronbach's Alpha value of 0.79, which also shows good reliability. Although slightly lower compared to Risk Identification Capability, this value is still within acceptable limits, indicating that the instruments for measuring risk mitigation strategies are also consistent and reliable. Finally, Supply Chain Resilience has the highest Cronbach's Alpha value, namely 0.88. This shows that the instruments used to measure the company's supply chain resilience have excellent internal consistency and the measurement results are reliable.

Table 4. Multiple Linear Regression Test

Independent Variable	Regression Coefficient (B)	Std. Error	t	p-value
Constant	1.205	0.278	4.335	0
Risk Identification Capability	0.418	0.073	5.725	0
Risk Mitigation Strategies	0.314	0.075	4.187	0

The regression results in Table 4 indicate that both Risk Identification Capability and Risk Mitigation Strategies significantly influence Supply Chain Resilience. A regression coefficient of 0.418 for Risk Identification Capability means that a one-unit increase in this capability boosts resilience by 0.418 units, highlighting its critical role in managing disruptions. Similarly, Risk Mitigation Strategies, with a coefficient of 0.314, also positively impact resilience. The standard errors (0.073 and 0.075, respectively) suggest high accuracy in coefficient estimation. The t-values of 5.725 (risk identification) and 4.187 (mitigation strategies), both exceeding 2, along with p-values of 0.000, confirm the statistical significance of these effects at the 0.05 level. Thus, both variables play a vital role in strengthening supply chain resilience.

Table 5. Coefficient of Determination

Model	Value
R	0.782
R Square	0.612
Adjusted R Square	0.604
Std. Error of the Estimate	0.412

Based on Table 5, the results of the regression analysis, the Adjusted R Square value of 0.604 indicates that the model developed in this research is able to explain 60.4% of the variation in the dependent variable, namely Supply Chain Resilience. In other words, a combination of variables Risk Identification Capability and Risk Mitigation Strategies together contributed 60.4% in increasing supply chain resilience at PT Mitra Adiperkasa Tbk (MAP). The remainder, amounting to 39.6%, is explained by other factors outside this research model. This fairly high Adjusted R Square value indicates that the model used has a good level of suitability for describing the relationship between the variables studied. In addition, the standard error of estimate value of 0.412 shows a relatively low level of prediction error, strengthening the reliability of the model in estimating Supply Chain Resilience.

Table 6. Hypothesis Test

Variable	B	Std. Error	t	p-value
Constant	1.205	0.278	4.335	0.000
Risk Identification Capability	0.418	0.073	5.725	0.000
Risk Mitigation Strategies	0.314	0.075	4.187	0.000

Based on Table 6 the regression results show that both independent variables have a statistically significant effect on Supply Chain Resilience, with a p-value <0.05 for both predictors. The standardized regression coefficient (B = 0.418) for Risk Identification Capability shows a strong and significant contribution to the resilience outcome (t = 5.725; p = 0.000), thus supporting H1. This suggests that companies with a strong risk identification process are better positioned to anticipate and absorb disruptions in line with Dynamic Capabilities Theory, which emphasizes the importance of sensing and responding to environmental uncertainty (Teece, 2007). Similarly, Risk Mitigation Strategy contributes significantly to supply chain resilience (B = 0.314; t = 4.187; p = 0.000), thus supporting H2. This reflects the argument in Contingency Theory, which states that companies must adapt their strategies to their external risk environment to maintain performance stability (Donaldson, 2001). Implementing mitigation measures, such as contingency plans and scenario modeling, enables MAP to remain adaptive and competitive amidst volatility.

DISCUSSION

Jüttner and Maklan (2011) emphasize that firms that proactively identify risks across their supply chain networks are better equipped to handle disruptions and maintain performance during crises. This study reinforces that assertion by showing how systematic risk identification significantly contributes to supply chain resilience. Organizations that implement early and continuous risk identification processes especially at vulnerable points such as procurement, logistics, and distribution are able to formulate more accurate contingency plans and accelerate their response when facing disruptions (Negri et al., 2021; López-Castro et al., 2021; Tombido, 2025). Through this approach, companies not only strengthen their internal preparedness but also foster trust and synchronization with external partners, resulting in a more cohesive and resilient supply chain ecosystem. Ponis and Koronis (2012) and Asamoah et al. (2021) also argue that robust risk identification facilitates the development of inter-organizational systems that enhance supply chain performance through improved coordination and shared visibility. In this study, that notion is confirmed through the observation that thorough preemptive identification reduces uncertainty and operational delays during volatile conditions. Thus, building the capacity to detect and map risks early allows firms to prepare structured mitigation mechanisms and maintain stability under adverse circumstances.

In addition to risk identification, Kähkönen and Patrucco (2022) and Jidda et al. (2025) have emphasized the role of effective mitigation strategies such as supplier diversification, emergency stockpiling, and predictive monitoring in enhancing supply chain resilience. The current study reinforces these insights by demonstrating that such strategies contribute significantly to supply chain continuity and responsiveness. However, our regression analysis shows that Risk Identification Capability (B = 0.418) has a stronger effect on Supply Chain Resilience than Risk Mitigation Strategies (B = 0.314), suggesting that early recognition and diagnosis of potential risks play a more foundational role in determining resilience outcomes. This aligns with Carvalho et al. (2021) and Zhao (2023), who argue that proactive identification enables organizations to anticipate shocks and respond more effectively. In contrast, mitigation is reactive by design and often depends on how well the risks were identified and contextualized. The stronger impact of identification suggests that mitigation, while necessary, is constrained by the accuracy and timeliness of the initial diagnosis.

Unexpectedly, the mitigation strategies implemented by MAP appear uneven across departments, as indicated by the higher standard deviation (0.82), possibly reflecting challenges in institutionalizing standardized mitigation across diverse brand operations. This fragmentation is typical in the retail sector, where operational silos, brand-specific supply chains, and fast product cycles complicate the uniform application of risk protocols (Jain et al., 2017; Nikookar, 2024). Furthermore, the study supports the Dynamic Capabilities Framework, particularly Ivanov's (2021) concept of Active Usage of Resilience Assets (AURA), by illustrating the need for continuous adaptation of risk strategies. Static mitigation plans are insufficient in volatile environments such as fast fashion and food retail, where consumer demand, supplier availability, and geopolitical factors shift rapidly. This echoes Scholten et al. (2020) and Adobor (2020), who call for iterative risk evaluation over linear, fixed-response approaches.

Thus, while both risk identification and mitigation are important, the results suggest that resilience is more effectively driven by the firm's ability to foresee, interpret, and adapt to emerging risks, rather than solely by deploying predefined mitigation measures. This conceptual shift highlights the value of building dynamic sensing capabilities, especially in a complex, multi-brand retail landscape like that of MAP. In alignment with the arguments of Wieland and Durach (2021), who underline the importance of understanding the complex interplay between internal and external risk factors, this research reinforces the necessity for an integrated approach to supply chain resilience.

CONCLUSION

This study analytically confirms that risk identification capability has a stronger impact on supply chain resilience than mitigation strategies. Firms that proactively detect risks early are better positioned to respond effectively, reducing disruption severity. While mitigation efforts such as diversification and contingency planning also enhance resilience, their effectiveness depends heavily on prior accurate risk recognition. Thus, resilience is best achieved when identification and mitigation are integrated, with identification serving as the strategic foundation for agile response planning. These findings affirm that supply chain resilience is not only driven by efficiency, but also by the dynamic capabilities of an organization in managing uncertainty. Theoretically, this research enriches the field of supply chain and risk management by supporting the dynamic capabilities framework. It extends prior models that emphasize reactive responses, introducing a proactive and adaptive approach as critical in developing resilient supply chains. This perspective positions resilience as a product of strategic foresight and organizational learning, rather than solely operational robustness.

From a practical standpoint, the study provides strategic recommendations for multinational companies. These include establishing a structured and routine risk mapping system, developing scenario-based mitigation plans, investing in predictive technologies, and fostering a collaborative organizational culture. Through these efforts, companies can enhance their preparedness and maintain operational stability amid global volatility. Despite its contributions, this research has several limitations. The cross-sectional design restricts temporal insights, and the industrial focus limits generalizability. Additionally, the exclusive use of quantitative methods may overlook contextual nuances. Future research is encouraged to include broader sectoral coverage, incorporate mediating or moderating variables, and apply longitudinal approaches. Such efforts will deepen understanding of the complex mechanisms underlying risk management and resilience in evolving global supply chain environments.

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