



Aligning Strategies in Mitigating Supply Risk: The Role of Supply Chain Management in an Emerging Economy

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Abstract:

This paper adopts a structured literature review methodology to delve into the pivotal role of supply chain management (SCM) in countering supply risks within emerging economies. The review methodically collects, analyzes, and synthesizes a broad spectrum of existing studies and real-world case studies. This rigorous process uncovers how SCM strategies can be tailored to address specific challenges in these markets, like market volatility, infrastructural constraints, and diverse regulatory landscapes. By integrating globally recognized best practices with strategies that resonate with local dynamics, the paper proposes a nuanced approach to managing supply risks. It underscores the significance of collaboration, the incorporation of technological advancements, and maintaining agility in SCM processes. The findings reveal insightful SCM models that align risk mitigation with the economic and cultural realities of emerging markets, thereby offering valuable strategic insights. Additionally, the paper explores the impact of digital transformation in SCM and the influence of governmental policies and international trade agreements in shaping SCM strategies in these regions. By providing a comprehensive framework for aligning SCM strategies with the objective of risk mitigation, this research contributes to a deeper understanding of strategic SCM. It advocates for the development of resilience and sustainable growth in emerging economies, thereby addressing a critical gap in SCM literature and offering pragmatic guidelines for businesses and policymakers in these burgeoning markets.

Keywords:

Supply Chain Management (SCM), Emerging Economies, Supply Risk Mitigation, Market Volatility, Infrastructure Challenges, Regulatory Environment, Global Best Practices, Localized Strategies, Collaboration in SCM, Technological Adaptation, Supply Chain Agility.

1. Introduction:

In the rapidly evolving landscape of global trade, the strategic alignment of Supply Chain Management (SCM) in emerging economies is increasingly pivotal. This paper delves into the intricacies of SCM in these dynamic environments, where mitigating supply risks presents both a challenge and an opportunity. Emerging economies, characterized by their vibrant market potentials and evolving infrastructural capabilities, are often more vulnerable to supply chain disruptions. These vulnerabilities arise from factors such as market volatility, infrastructural limitations, and complex regulatory frameworks, making the management of supply chain risks a critical area of focus (Colicchia et al., 2019).

The paper aims to explore the alignment of SCM strategies to effectively mitigate these risks. It posits that while traditional SCM practices provide a foundation, they require significant adaptation to address the unique challenges of emerging markets. By synthesizing current literature and case studies, the paper seeks to present an integrated view of SCM strategies that are both globally informed and locally applicable.

Through this exploration, the paper contributes to the understanding of how strategic SCM can foster resilience and growth in emerging economies. It underscores the importance of agile, adaptable, and collaborative approaches in SCM to navigate the multifaceted risks these economies face. This research serves as a guide for practitioners and policymakers in emerging markets, aiming to optimize their supply chain strategies in the face of global challenges and opportunities.

Furthermore, this paper examines the interplay of digital transformation and innovative technologies in enhancing SCM efficiency and risk mitigation in emerging economies. The integration of technologies like AI, blockchain, and IoT in SCM is explored, highlighting how they can revolutionize supply chains by improving transparency, efficiency, and responsiveness (Özkanlısoy et al., 2021). Additionally, the role of government policies and international trade agreements is analyzed, emphasizing their impact on shaping effective SCM strategies in these regions (Zou et al., 2021). The paper further advocates for a holistic, multi-stakeholder approach to SCM in emerging economies, emphasizing the need for collaborative efforts between businesses, governments, and international bodies to foster resilient, sustainable, and growth-oriented supply chains.

Consequently, the paper emphasizes the necessity of customizing SCM strategies to the specific socio-economic contexts of emerging markets. This includes addressing the unique cultural, logistical, and technological challenges these markets present. The research underscores the potential of SCM in driving economic development and enhancing the competitive advantage of businesses in these regions.

In conclusion, the paper provides a comprehensive perspective on SCM in emerging economies, offering actionable insights and strategic directions for effectively managing supply risks in these complex and dynamic market environments. The introduction sets the stage for a comprehensive exploration of SCM in emerging economies, highlighting its vital role in mitigating supply risks in these dynamic markets. It underscores the need for strategies that are not only globally informed but also locally tailored, advocating for technological innovation, government engagement, and collaborative efforts. The paper aims to provide a nuanced understanding of SCM in emerging economies, offering strategic insights and practical recommendations for navigating the complexities of these markets. This research is positioned to contribute significantly to the field of

SCM, particularly in the context of emerging economies, where the alignment of supply chain strategies with local realities is essential for sustainable growth and resilience.

2. Literature

2.1 Evolution of Supply Chain Management:

The evolution of Supply Chain Management (SCM) has seen significant changes over the years. Initially, SCM focused primarily on efficiency and cost reduction, aiming to streamline operations and reduce waste. However, as the business environment became more complex and globalized, the focus shifted towards managing risks in the supply chain (McMaster et al., 2020). This included dealing with uncertainties such as market fluctuations, geopolitical events, and natural disasters. The contemporary approach to SCM now integrates risk management as a core component, emphasizing resilience and adaptability (Adobor & McMullen, 2018). This evolution reflects the increasing recognition of the importance of proactive risk management strategies in ensuring supply chain continuity and sustainability.

As Supply Chain Management (SCM) evolved, it began integrating sophisticated risk assessment and mitigation strategies. This involved not only identifying potential disruptions but also developing comprehensive contingency plans and agile response mechanisms (Chan et al., 2019). The increasing use of technology, particularly data analytics and predictive modeling, has been pivotal in enhancing risk management capabilities. SCM now often involves a more collaborative approach, with companies working closely with suppliers and partners to identify and mitigate risks collectively (Daghar et al., 2021). This evolution has led to the development of more resilient and responsive supply chains, capable of adapting to the rapidly changing global business environment. This in-depth approach to risk management in SCM is now seen as essential for maintaining competitive advantage and ensuring long-term sustainability.

2.1.1 Emergence of Supply Chain Integration

The emergence of supply chain integration in mitigating supply risks, particularly in the context of emerging economies, represents a significant shift in SCM strategies. This approach emphasizes the interconnectedness of various supply chain components, from raw material sourcing to final product delivery. In emerging markets, where supply chains often face higher risks due to infrastructural and regulatory challenges, integration becomes crucial. It enables better visibility, coordination, and responsiveness across the supply chain. By aligning strategies across different supply chain stages and stakeholders, businesses can more effectively anticipate, assess, and respond to risks. This integrated approach not only enhances risk mitigation but also supports overall supply chain resilience and efficiency, which is vital for sustaining growth and competitiveness in the dynamic landscape of emerging economies (Jain et al., 2017).

2.1.2 Total Quality Management (TQM) Era

The Total Quality Management (TQM) era marked a pivotal shift in supply chain management, particularly in aligning strategies to mitigate supply risks. TQM, with its emphasis on continuous improvement and customer satisfaction, transformed how supply chains were managed (Teoman & Ulengin, 2018). In the context of risk mitigation, TQM's principles of quality control, process management, and employee involvement became integral. This era saw companies integrating TQM practices into their supply chains to ensure quality consistency, reduce defects, and minimize disruptions. By focusing on quality at every stage of the supply chain, organizations could more effectively identify potential risks and implement proactive measures to mitigate them (Chen et al., 2013). This holistic approach to quality management in SCM contributed significantly to building more resilient and reliable supply chains, crucial for maintaining competitive advantage and customer trust. TQM's core ethos of continuous improvement and total involvement meant that every member of the supply chain, from suppliers to

end-users, became a part of the quality assurance process. This inclusivity and focus on excellence at every stage greatly enhanced the ability of supply chains to identify risks early and react swiftly.

Additionally, TQM's emphasis on data-driven decision making and process optimization led to more efficient and resilient supply chains, capable of adapting to changes and recovering quickly from disruptions (Wahidmurni, 2017). This comprehensive quality focus under TQM became a cornerstone in aligning strategies to effectively mitigate supply risks, particularly vital in the complex and rapidly evolving global supply chain networks.

2.1.3 Globalization and Outsourcing

Globalization and outsourcing have significantly impacted supply chain management, particularly in the context of mitigating supply risks. The globalization era has expanded supply chains geographically, making them more complex and interdependent (Lessard, 2013). This global network, while offering benefits such as cost reduction and access to new markets, also introduces various risks including political, economic, and environmental uncertainties. Outsourcing, a key component of globalization, involves delegating certain business processes to external entities, often in different countries. While this can enhance efficiency and reduce costs, it also brings challenges in maintaining quality control and managing risks associated with relying on external partners. In this landscape, aligning strategies to mitigate supply risks requires a comprehensive understanding of the global supply chain dynamics, thorough risk assessment at every outsourcing stage, and the development of robust contingency plans (Patel, 2023). This ensures supply chain resilience and sustainability in the face of the complexities introduced by globalization and outsourcing.

Consequently, in the era of globalization and outsourcing, the alignment of supply chain strategies for risk mitigation involves a keen focus on diversification and supplier relationship management. Diversification in global sourcing helps mitigate risks by not overly relying on a single geographical location or supplier, thus reducing the impact of regional disruptions (*And Rebalancing in Global Value Chains*, 2020). Additionally, effective supplier relationship management is crucial. This involves regular audits, transparent communication, and collaborative risk management strategies with suppliers. Companies also need to invest in advanced data analytics and real-time monitoring systems to track and respond to global supply chain dynamics swiftly. This comprehensive approach ensures resilience and adaptability in the complex, interconnected supply chains of the globalized business world.

2.4 Key Components of Supply Risk Management

2.4.1 Risk Identification

This phase in supply risk management involves a proactive and comprehensive approach to identifying potential risks across the entire supply chain. This encompasses evaluating risks associated with suppliers, logistics, market fluctuations, geopolitical challenges, and environmental factors like natural disasters (Markmann et al., 2013). The process necessitates a thorough understanding of both internal operations and external influences that could impact the supply chain.

2.4.2 Risk Assessment and Analysis

Once risks are identified, a detailed analysis is conducted to assess their likelihood and potential impact. This analytical phase is crucial for prioritizing risks, helping supply chain managers focus on the most critical areas that could disrupt supply chain operations (Del & Solfa, 2022). It involves quantitative and qualitative techniques to evaluate the severity and frequency of potential risks.

2.4.3 Risk Mitigation Strategies

Developing effective risk mitigation strategies is a core component of supply risk management. This involves devising plans and actions aimed at reducing the likelihood or impact of identified risks. Strategies might include diversifying supplier base to avoid over-reliance on a single source, increasing inventory levels as a buffer against supply disruptions, or investing in advanced technology for better risk management (Singhal et al., 2011).

2.4.4 Monitoring and Review

Continuous supply chain monitoring and regular reviews are vital to identify emerging risks and evaluate the efficiency of current risk mitigation measures. This ongoing vigilance is pivotal to maintain supply chain resilience, enabling timely adaptations to evolving circumstances and challenges.

These proactive measures ensure that the supply chain remains agile and capable of addressing unforeseen disruptions, market shifts, or regulatory changes (Gaudenzi & Christopher, 2016). Through continuous monitoring and periodic assessments, organizations can enhance their capacity to navigate uncertainties and sustain optimal supply chain performance.

2.4.5 Supplier Management

Effective management of suppliers is a cornerstone in mitigating supply risks, involving not just the evaluation but also the continuous monitoring of suppliers' stability, reliability, and compliance with quality standards (Kırılmaz & Erol, 2017). This comprehensive approach ensures that the supply chain is robust against various risks, enhancing overall performance. By maintaining high standards of quality and compliance, businesses can ensure a more reliable and efficient supply chain, thereby reducing the potential for disruptions and maintaining a steady flow of goods and services.

2.4.6 Contingency Planning

Contingency planning in supply chain management is a critical strategy for preparing against unforeseen disruptions. It involves creating detailed, actionable plans to respond effectively to various crisis scenarios. This not only ensures business continuity in adverse situations but also minimizes the potential impact of disruptions. By having well-structured contingency plans, companies can quickly adapt and maintain operational functionality, thereby safeguarding against significant losses and ensuring the resilience of their supply chain in the face of unpredictability (Wannous, 2014).

2.4.7 Communication and Collaboration

Clear and effective communication is the backbone of successful supply risk management. It involves open channels of dialogue both within the organization and with external partners, ensuring that all parties are aligned in their approach to risk management (Crovini et al., 2022). This collaborative effort, spanning across various departments and including suppliers, fosters a cohesive strategy for identifying and addressing risks. Such comprehensive communication not only streamlines risk management processes but also promotes a culture of transparency and shared responsibility, crucial for timely and effective risk mitigation in complex supply chains.

2.4.8 Compliance and Regulatory Management

Ensuring compliance with relevant laws, regulations, and industry standards is a vital aspect of supply risk management. It involves a thorough understanding and adherence to international trade regulations, environmental laws, and safety standards (Garcia et al., 2015). Companies must actively stay informed about these regulations and seamlessly integrate them into their supply chain practices. This compliance is crucial not only for legal and ethical reasons but also for maintaining the integrity and sustainability of the supply chain. It

helps in avoiding legal penalties, preserving brand reputation, and ensuring responsible and ethical business operations in a global market.

2.4.9 Technological Integration

Incorporating advanced technologies such as AI, blockchain, and IoT in supply risk management significantly elevates the capabilities for supply chain visibility and risk mitigation (Ivanov et al., 2019). These technologies enable the gathering and analysis of real-time data, which is crucial for making swift and informed decisions. The predictive analytics of AI, the secure and transparent nature of blockchain, and the connectivity offered by IoT create a more agile and responsive supply chain. This technological integration facilitates proactive risk identification and management, ensuring a more resilient supply chain in the face of dynamic market challenges.

2.4.10 Continuous Improvement

In the dynamic and ever-evolving supply chain environment, the need for continuous improvement in risk management practices is paramount. Adapting to new market insights, changes, and technological advancements is crucial (McMaster et al., 2020). This necessitates a regular review and update of risk management strategies to ensure their ongoing effectiveness and relevance. Staying abreast of these changes and incorporating them into risk management approaches helps in maintaining a robust and agile supply chain, capable of responding to and mitigating risks in a timely and efficient manner.

2.5 Benefits of Supply Risk

2.5.1 Enhanced Resilience

Effective supply risk management significantly strengthens the resilience of supply chains. By anticipating and preparing for potential disruptions, businesses can ensure continuity of operations (McMaster et al., 2020). This resilience is crucial in maintaining the flow of goods and services, even in the face of unforeseen challenges. Each of these benefits contributes to the overall effectiveness and sustainability of a company's supply chain, making supply risk management an indispensable part of modern business strategy.

2.5.2 Cost Reduction

Proactive risk management significantly reduces costs linked to supply chain disruptions and inefficiencies. Early identification and mitigation of potential risks prevent expensive delays, inventory problems, and other operational hindrances. This foresight in addressing risks leads to smoother operations, ensuring cost-effective supply chain management and maintaining operational stability (World Health Organization, 2004).

2.5.3 Improved Supplier Relationships

Building strong, collaborative relationships with suppliers through effective risk management not only fosters trust and reliability but also creates a foundation for a more resilient supply chain. Engaging suppliers in risk management processes leads to enhanced communication, better alignment of objectives, and a mutual commitment to efficiency and stability (Hajmohammad & Vachon, 2014). This collaborative approach results in more robust supply chain networks, capable of withstanding various challenges and adapting to changing market demands.

2.5.4 Competitive Advantage

Effective supply chain risk management equips businesses with the agility to adapt to market changes swiftly and skillfully, providing a significant competitive edge. In the contemporary, fast-paced business world characterized by uncertainty, this ability to quickly respond to and navigate challenges is crucial (Jain et al., 2017). Such

adaptability not only strengthens a company's market position but also enhances its capability to seize new opportunities and mitigate potential setbacks, making it a vital component of modern business strategy.

2.5.5 Customer Satisfaction

Maintaining a stable and reliable supply chain is fundamental to ensuring customer satisfaction and loyalty. In a market where consistency and dependability are highly valued, effective risk management plays a critical role in fulfilling customer expectations reliably (Patel, 2023). This reliability in meeting customer needs not only fosters trust but also builds a loyal customer base, which is essential for long-term business success. A well-managed supply chain, therefore, becomes a key driver of customer satisfaction, reinforcing the brand's reputation for reliability and quality service.

2.5.6 Regulatory Compliance

Effective supply risk management is pivotal in ensuring businesses comply with various regulatory requirements, thus avoiding legal penalties and upholding compliance standards. By aligning supply chain operations with regulatory demands, companies not only evade potential legal repercussions but also maintain their reputation and integrity in the market (Ducas & Wilner, 2017). This adherence to compliance standards is essential for sustainable business operations and plays a critical role in building trust with stakeholders, including customers, investors, and regulatory bodies.

2.5.7 Market Positioning

A resilient supply chain not only strengthens a company's market position but also bolsters its reputation for reliability and trustworthiness. In a competitive marketplace, companies known for effectively managing their supply chains are perceived as more dependable, fostering stronger customer relationships and a loyal customer base, enhancing their overall brand value and market presence (Ryciuk & Nazarko, 2020).

2.5.8 Predictive Insights

Through predictive insights, effective risk management not only enhances forecasting and decision-making capabilities but also transforms businesses into proactive entities. By deeply analyzing and understanding risk factors, companies can anticipate potential challenges and adapt strategies accordingly, thereby gaining a significant strategic advantage in navigating future business landscapes and maintaining competitive agility (Kesebi, 2019).

2.5.9 Innovation and Growth

A well-managed supply chain, by allowing businesses to take calculated risks, acts as a catalyst for innovation and growth (Soto-Acosta, 2020). This strategic approach to risk management empowers companies to confidently pursue new ventures and market opportunities, knowing that potential challenges have been assessed and mitigated, thereby fostering a culture of innovation and progressive growth.

2.6 Challenges of Supply Risk

2.6.1 Globalization-Induced Complexity

The advent of globalization has significantly extended supply chains, introducing a level of complexity that challenges effective management and oversight. This global expansion complicates risk identification and timely response, as it involves navigating diverse markets, varying regulatory landscapes, and a multitude of international stakeholders, each with their own set of risks and operational dynamics (Oliveira et al., 2021).

2.6.2 Supplier Reliability

The reliance on a diverse range of suppliers, often spread across various countries, introduces significant variability in performance and stability (Srai et al., 2015). This diversity, while beneficial in terms of cost and sourcing, can lead to disruptions in the supply chain due to differences in quality standards, production capabilities, and reliability. Managing these varied supplier relationships effectively to ensure a consistent and stable supply chain is a complex challenge.

2.6.3 Market Volatility

Supply chains are increasingly susceptible to market fluctuations, such as rapid changes in demand, commodity price shifts, or economic downturns. This volatility requires supply chains to be highly adaptable and responsive. However, quickly adjusting to these market dynamics without compromising efficiency or increasing costs is a substantial challenge for supply chain managers.

2.6.4 Technological Risks

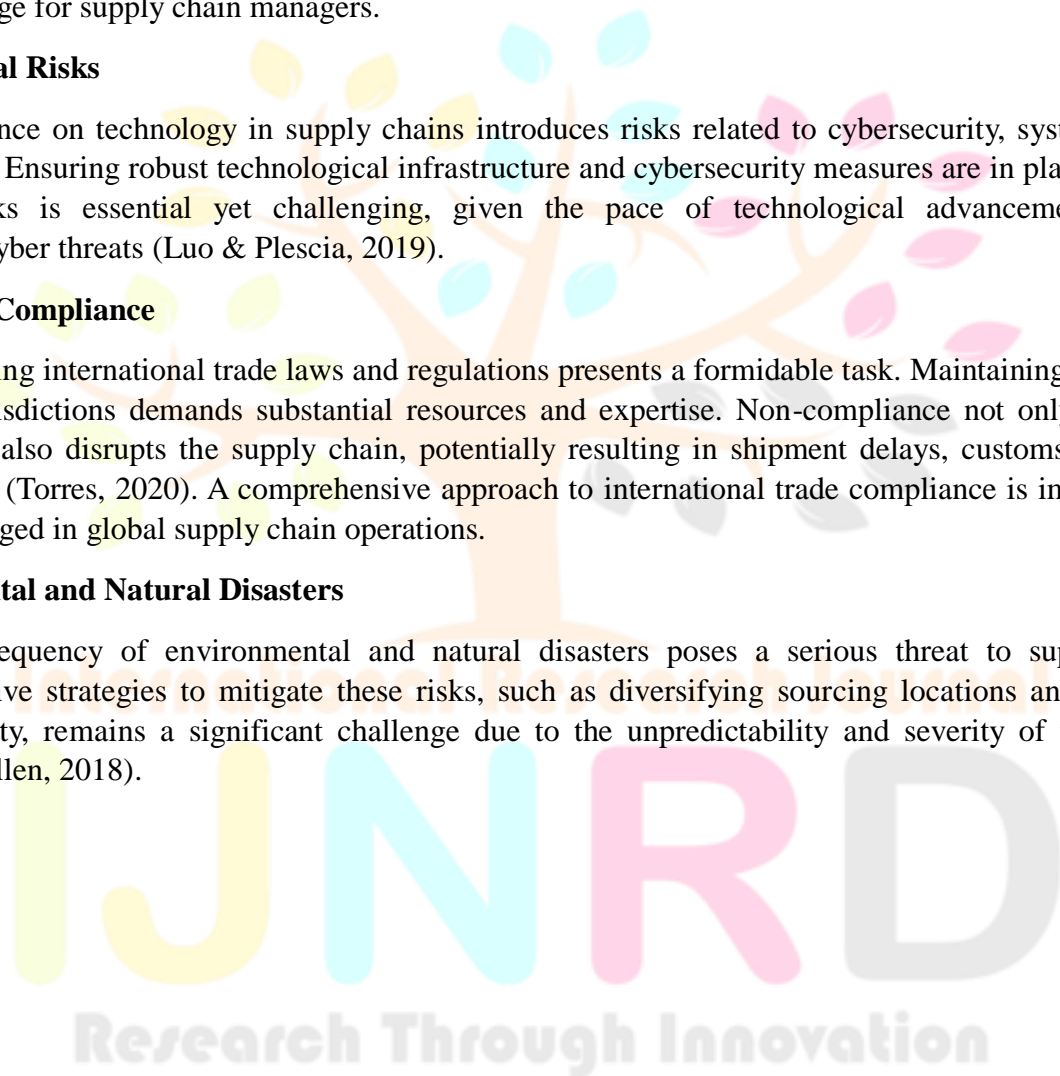
The growing reliance on technology in supply chains introduces risks related to cybersecurity, system failures, and data breaches. Ensuring robust technological infrastructure and cybersecurity measures are in place to protect against these risks is essential yet challenging, given the pace of technological advancement and the sophistication of cyber threats (Luo & Plescia, 2019).

2.6.5 Regulatory Compliance

Effectively managing international trade laws and regulations presents a formidable task. Maintaining compliance across diverse jurisdictions demands substantial resources and expertise. Non-compliance not only risks legal consequences but also disrupts the supply chain, potentially resulting in shipment delays, customs issues, and financial penalties (Torres, 2020). A comprehensive approach to international trade compliance is imperative for organizations engaged in global supply chain operations.

2.6.6 Environmental and Natural Disasters

The increasing frequency of environmental and natural disasters poses a serious threat to supply chains. Developing effective strategies to mitigate these risks, such as diversifying sourcing locations and enhancing supply chain agility, remains a significant challenge due to the unpredictability and severity of these events (Adobor & McMullen, 2018).



2.6.7 Political and Geopolitical Risks

Supply chains are susceptible to disruptions arising from political instability, trade conflicts, and policy shifts, particularly in a global context. Managing these risks necessitates a profound comprehension of international relations and the agility to swiftly adjust to unpredictable political dynamics (Hafiani et al., 2021). The complexity of these challenges underscores the significance of proactive risk mitigation strategies and continuous monitoring to ensure supply chain resilience in an ever-evolving geopolitical landscape.

2.6.8 Quality Control

Maintaining consistent quality across the supply chain, particularly when dealing with outsourcing or offshoring, is challenging. Ensuring that all suppliers and partners adhere to the same quality standards and practices requires rigorous monitoring and quality assurance processes (Ayaz, 2023).

2.6.9 Logistical Challenges

The complexities of transportation and logistics, such as delays, inefficiencies, and the management of logistics networks, can significantly impact the supply chain (Attaran, 2020). Optimizing these logistical processes while dealing with variables like transportation costs, route disruptions, and customs regulations is a continual challenge.

2.7 Implementation of Supply Risk

To commence the supply risk management process, it is essential to conduct a comprehensive assessment of the entire supply chain. This entails a thorough analysis of all elements within the supply network, from suppliers to logistics and distribution channels (Jain et al., 2017). By doing so, organizations can pinpoint vulnerabilities, whether they be geographical, logistical, or operational in nature.

Once vulnerabilities are identified, the next crucial step is the categorization of suppliers based on their criticality and potential impact on the company's operations (Edwards et al., 2016). This categorization allows organizations to prioritize risk management efforts, allocating resources and attention to suppliers deemed most critical to their supply chain resilience.

To mitigate these risks effectively, organizations must develop robust risk mitigation strategies. Common strategies include dual sourcing, which involves having alternative suppliers in place to mitigate the impact of a disruption from a primary supplier (Sawik, 2017). Safety stock can be employed to buffer against sudden demand surges or supply disruptions. Additionally, diversifying suppliers, especially across different geographical regions or industries, can enhance resilience against a wide array of potential risks.

Effective communication channels with suppliers are vital components of supply risk management. Establishing clear and transparent lines of communication fosters collaboration, enables early risk detection, and facilitates the development of mutual contingency plans (Negri et al., 2021). Regularly monitoring supplier performance and risks is another key aspect of this process, enabling organizations to stay informed about changing conditions and potential threats.

Finally, organizations should create a comprehensive contingency plan for potential disruptions. This plan should outline specific actions to be taken in the event of supply chain disruptions, including steps for risk mitigation, alternative sourcing, and recovery strategies. Importantly, supply risk management is an ongoing process, and it is crucial to continuously refine the approach to adapt to changing circumstances, emerging risks, and evolving business conditions (Hofmann et al., 2014).

2.8 Impact of Supply Risk on Supply Chain Performance

Supply chain performance is a critical determinant of an organization's overall success in today's globalized and highly competitive business environment. One of the key factors that can significantly influence supply chain performance is supply risk. Supply risk refers to the uncertainty and potential disruptions that can occur at various

stages of the supply chain, affecting the flow of materials, products, and information (Hofmann et al., 2014). This article delves into the intricate relationship between supply risk and supply chain performance, highlighting the profound implications and strategies for effective risk management.

2.8.1 Understanding Supply Risk

Understanding supply risk is crucial in modern supply chain management. It involves assessing and anticipating potential disruptions and uncertainties that can impact the flow of materials, products, and information within a supply chain. These risks can arise from factors such as supplier reliability, demand fluctuations, operational challenges, and financial instability (Hosseini et al., 2019). A comprehensive understanding of supply risk is essential for effective risk mitigation and ensuring the resilience of the supply chain.

2.8.2 Manifestation of Supply Risk

Supply risk takes on various forms and manifestations in today's complex business landscape. It can arise from supplier unreliability, demand fluctuations, operational disruptions, and financial instability (Markmann et al., 2013). These risks manifest as increased costs, supply chain delays, inventory challenges, and customer service issues. Recognizing and addressing these multifaceted forms of supply risk is pivotal for ensuring the resilience and efficiency of supply chain operations.

2.8.3 Supplier Reliability

Relying heavily on a single or a limited number of suppliers, particularly when they are clustered geographically, exposes the supply chain to considerable risks. This concentration can render the entire supply chain vulnerable to various disruptions, including the devastating impact of natural disasters like earthquakes or hurricanes, geopolitical tensions that may result in trade restrictions or supply chain disruptions, or supplier-specific issues such as financial instability or labor disputes (Jain et al., 2017). Such vulnerabilities necessitate diversification and robust risk mitigation strategies to enhance supply chain resilience.

2.8.4 Demand Volatility

Fluctuations in customer demand, which can be influenced by factors like seasonality, economic fluctuations, or abrupt changes in consumer preferences, present significant challenges for supply chains (Magableh & Mistarihi, 2022). These demand fluctuations can disrupt production planning, causing inefficiencies and potentially leading to issues like overstocked inventories, which tie up capital and warehouse space, or stockouts, which can result in lost sales and customer dissatisfaction. Effective demand forecasting and agile supply chain strategies are essential to navigate these challenges and optimize supply chain performance (Brynjolfsson & Mitchell, 2017; Gaudenzi & Christopher, 2016).

2.8.5 Operational Risks

Operational risks within an organization represent a critical facet of supply risk management. These internal threats can manifest as manufacturing breakdowns that interrupt production, quality control issues that lead to product recalls or rejections, or labor strikes that halt manufacturing processes or distribution (Singhal et al., 2011). Such disruptions can disrupt the overall flow of the supply chain, impacting efficiency, causing delays, and potentially leading to increased costs. A proactive approach to risk mitigation and contingency planning is essential to minimize the impact of these operational risks (Pundir et al., 2019).

2.8.6 Financial Risks

Economic volatility, currency fluctuations, and financial instability represent significant financial risks in supply chain management. These factors can have far-reaching consequences, affecting supply chain performance by altering pricing dynamics, payment terms, and credit availability. Fluctuations in exchange rates can lead to pricing uncertainties, while economic downturns can strain customer finances, impacting payment timelines (Belhadi et al., 2021). The financial health of suppliers and customers is intrinsically linked to the supply chain's financial stability, making it essential to monitor and manage these risks effectively to maintain optimal performance (Tang et al., 2018).

3. Methodology

The methodology section plays a pivotal role in elucidating the rigorous approach employed to investigate the alignment of supply chain management strategies in mitigating supply risk within an emerging economy.

To comprehensively explore the relationship between supply chain management and supply risk mitigation, a structured literature review methodology was adopted. This methodology involved several key steps:

Database Selection: Electronic databases such as Scopus and Google Scholar were chosen as the primary sources for literature retrieval. These databases offer a wide range of scholarly publications that are pertinent to the research topic.

Keyword Selection: Carefully chosen keywords were used in the search queries to ensure that the literature retrieved was directly relevant to the interplay between supply chain management strategies and supply risk in an emerging economy context. Keywords emphasized the alignment of strategies, supply risk mitigation, and emerging economies.

Publication Date Range: The selection of publications from 2013 to 2023 ensured that the review encompassed the most recent and up-to-date research in the field.

Inclusion Criteria: The inclusion criteria prioritized peer-reviewed articles, case studies, and reports that directly addressed the alignment of supply chain management strategies in mitigating supply risk within an emerging economy.

Exclusion Criteria: Rigorous screening based on relevance to the research, publication type, focus on emerging economies, language, and availability was conducted. This process resulted in the exclusion of thirteen (13) out of a total of sixty-eight (68) initially identified articles.

Eligibility Assessment: The remaining forty-five full-text articles underwent meticulous assessment for eligibility. Articles that align closely with the thematic underpinnings of the study, emphasizing the role of supply chain management in supply risk mitigation in emerging economies, were selected.

Final Selection: Forty-Five (45) articles were ultimately chosen as they profoundly resonated with the holistic approach of the study, forming the core body of literature for analysis.

In summary, this methodology highlights the systematic and thorough approach taken to select and review the literature relevant to the research's objectives. It emphasizes the importance of aligning supply chain management strategies to mitigate supply risk in the context of an emerging economy, providing a robust foundation for the subsequent analysis and discussion in the research paper.

4. Findings and Analysis

The findings and analysis derived from the literature review methodically align with the research objectives and contribute to a deeper understanding of the topic. The study reveals key insights:

4.1 Tailoring SCM Strategies to Local Challenges

The research underscores the importance of customizing SCM strategies to address the unique challenges prevalent in emerging economies. These challenges, including market volatility, infrastructural limitations, and complex regulatory environments, demand a nuanced approach. The findings emphasize the inadequacy of a one-size-fits-all strategy and advocate for adapting globally recognized best practices to suit local dynamics effectively.

4.2 Collaboration and Technological Integration

Collaboration emerges as a critical success factor in mitigating supply risks within emerging economies. The research highlights the need for not only internal collaboration within the supply chain but also partnerships with local entities, suppliers, and governmental agencies. Furthermore, the integration of advanced technologies, such as real-time tracking, data analytics, and supply chain visibility tools, is identified as essential for bolstering supply chain resilience and responsiveness.

4.3 Agility in SCM Processes

The study underscores the significance of agility in SCM processes to respond swiftly to dynamic market conditions, unforeseen disruptions, and shifts in demand patterns. Agile supply chain practices, such as demand forecasting, inventory optimization, and supplier diversification, are identified as essential strategies to effectively mitigate supply risks in emerging economies.

4.4 SCM Models Tailored to Emerging Markets

Innovative SCM models that align risk mitigation with the economic and cultural realities of emerging markets are identified. These models prioritize cost-efficient sourcing, supplier development, and leveraging local resources. By accommodating the unique characteristics of emerging economies, organizations can build more resilient supply chains.

4.5 Digital Transformation in SCM

The paper explores the transformative role of digital technologies in SCM, highlighting the significance of data analytics, the Internet of Things (IoT), and blockchain. These technologies offer enhanced supply chain visibility, traceability, and data-driven decision-making capabilities. They enable organizations to proactively identify and mitigate supply risks, contributing to overall supply chain resilience.

4.6 Governmental Policies and Trade Agreements

The research recognizes the substantial influence of governmental policies and international trade agreements on SCM strategies in emerging economies. Regulatory changes, trade barriers, and geopolitical factors can introduce uncertainties and supply risks. Therefore, businesses operating in these markets must closely monitor and adapt to evolving policy landscapes.

In conclusion, this study's findings provide a comprehensive framework for aligning SCM strategies with the goal of mitigating supply risks within emerging economies. By considering the need for localization, collaboration, technological integration, and agility, organizations can enhance their resilience and sustainable growth prospects in these markets. Additionally, the transformative impact of digital technologies and the role of governmental policies highlight the dynamic nature of SCM in emerging economies. This research significantly contributes to advancing the understanding of strategic SCM and offers practical guidance for businesses and policymakers operating in these burgeoning markets.

5. Case Studies and Examples:

This research paper on "Aligning Strategies in Mitigating Supply Risk: The Role of Supply Chain Management in an Emerging Economy" employs case studies and examples to illustrate the practical application of supply chain management (SCM) strategies in mitigating supply risk within emerging economies. These real-world instances offer valuable insights and concrete evidence of the effectiveness of tailored SCM approaches.

5.1 Case Study 1: Local Supplier Development in an Emerging Market

Findings:

In one case study, a multinational corporation operating in an emerging economy recognized the vulnerability of its supply chain due to heavy reliance on international suppliers. The company strategically invested in developing local suppliers, fostering their capabilities, and enhancing their quality and reliability. This move not only reduced supply risk but also contributed to the economic growth of the emerging market.

Analysis:

This case study exemplifies the importance of adapting SCM strategies to the local context. By nurturing local suppliers, the company reduced the reliance on distant suppliers, minimizing the impact of global disruptions. It also aligned with the economic and cultural realities of the emerging market, promoting resilience and sustainability.

5.2 Case Study 2: Digital Transformation Enhancing Supply Chain Visibility

Findings:

In another case, a logistics company operating in an emerging economy leveraged digital transformation tools, including IoT devices and advanced analytics, to enhance supply chain visibility. Real-time tracking, data analysis, and predictive maintenance enabled proactive identification and mitigation of potential disruptions.

Analysis:

This case study showcases the transformative power of digital technologies in SCM. By embracing IoT and data analytics, the company gained a competitive edge in risk mitigation. This real-time visibility empowered them to respond swiftly to emerging risks, demonstrating the critical role of technology in supply chain resilience.

5.3 Example 1: Agility in Inventory Management

Findings:

An example from the retail sector in an emerging economy illustrates the significance of agility in SCM processes. The company implemented dynamic inventory management practices that allowed for quick adjustments to changing consumer demand patterns, minimizing stockouts during peak demand seasons.

Analysis:

This example underscores the importance of agility in supply chain operations. By adopting demand forecasting and responsive inventory management, the company effectively mitigated supply risks associated with demand volatility. It demonstrates that nimble SCM practices are essential in managing uncertainties within emerging markets.

5.4 Example 2: Governmental Policies and Supply Chain Adaptation

Findings:

An example highlights how changes in governmental policies and trade agreements impacted supply chains in an emerging economy. A manufacturing company had to adapt its sourcing strategies due to new trade regulations, which resulted in a shift in supplier locations to remain compliant and maintain uninterrupted operations.

Analysis:

This example underscores the need for supply chain flexibility and adaptability in response to evolving policy landscapes. It exemplifies the influence of external factors on supply risk and highlights the importance of proactive monitoring and adaptation.

In summary, the case studies and examples presented in this research paper provide concrete evidence of the alignment of SCM strategies with the goal of mitigating supply risk in emerging economies. These real-world instances showcase the effectiveness of tailored approaches, digital transformation, agility, and adaptation to local and regulatory contexts. They offer practical guidance for organizations operating in emerging markets, emphasizing the dynamic and multifaceted nature of supply chain management in mitigating risks and fostering resilience.

6. Conclusion:

In this concluding section, the paper synthesizes the key findings and contributions of the research, highlighting the implications for businesses, policymakers, and academia.

6.1 Key Findings and Contributions**i. Customization for Local Challenges**

One of the central findings of this research is the paramount importance of tailoring SCM strategies to address the unique challenges and nuances prevalent in emerging economies. These markets are characterized by market volatility, infrastructural limitations, and complex regulatory landscapes. The research underscores that adopting a standardized, one-size-fits-all approach is ill-suited for managing supply risk in these contexts. Instead, the success of SCM strategies hinges on adapting globally recognized best practices to align with local dynamics effectively.

ii. Collaboration and Technological Integration

Collaboration emerges as a pivotal factor in mitigating supply risks within emerging economies. It extends not only within the supply chain but also encompasses partnerships with local entities, suppliers, and governmental agencies. Furthermore, the integration of digital technologies, such as real-time tracking, data analytics, and supply chain visibility tools, is essential to bolster supply chain resilience and responsiveness. The research underscores that effective collaboration and technological integration are instrumental in addressing supply risk.

iii. Agility in SCM Processes

The study emphasizes the significance of agility in SCM processes within emerging economies. This agility enables organizations to respond swiftly to changing market conditions, unforeseen disruptions, and shifts in demand patterns. Agile supply chain practices, such as demand forecasting, inventory optimization, and supplier diversification, are identified as indispensable for mitigating supply risks effectively. The research highlights that being agile in SCM processes is crucial for risk mitigation.

iv. Innovative SCM Models for Emerging Markets

The research identifies innovative SCM models that align risk mitigation with the economic and cultural realities of emerging markets. These models prioritize cost-efficient sourcing, supplier development, and the utilization of local resources. By accommodating the unique characteristics of emerging economies, organizations can build more resilient supply chains. The research emphasizes that embracing innovative SCM models is integral to managing supply risks.

v. Digital Transformation

The paper explores the transformative impact of digital technologies on SCM within emerging economies. It underscores the pivotal role of data analytics, the Internet of Things (IoT), and blockchain in enhancing supply chain visibility, traceability, and data-driven decision-making. These technologies empower organizations to proactively identify and mitigate supply risks. The research asserts that embracing digital transformation is a strategic imperative for supply chain resilience.

vi. Governmental Policies and Trade Agreements

The research acknowledges the substantial influence of governmental policies and international trade agreements on SCM strategies within emerging economies. Regulatory changes, trade barriers, and geopolitical factors can introduce uncertainties and supply risks. Therefore, businesses operating in these markets must closely monitor and adapt to evolving policy landscapes. The research underscores the need for vigilance and adaptability in navigating policy-related risks.

6.2 Implications

i. For Businesses

Organizations operating in emerging economies must recognize the imperative of aligning SCM strategies with the objective of mitigating supply risks. This entails customizing approaches, fostering collaboration, embracing digital transformation, and maintaining agility in supply chain processes.

ii. For Policymakers

Governmental agencies and policymakers should consider the impact of regulatory changes and trade agreements on supply chain dynamics. Creating an enabling environment that supports supply chain resilience and innovation is pivotal for economic growth and competitiveness.

iii. For Academia

The research contributes to a deeper understanding of the strategic role of SCM in mitigating supply risks in emerging economies. It calls for continued research and knowledge dissemination in this dynamic field.

In summary, this research paper offers a comprehensive framework for aligning SCM strategies with the goal of mitigating supply risks in emerging economies. By recognizing the need for localization, collaboration, technological integration, and agility, organizations can enhance their resilience and sustainable growth prospects in these markets. Additionally, the transformative impact of digital technologies and the influence of governmental policies underscore the dynamic nature of SCM in emerging economies. This research significantly contributes to advancing the understanding of strategic SCM and provides actionable insights for businesses and policymakers operating in these burgeoning markets.

Research Through Innovation

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Table 1: Literature summary of Aligning Strategies in Mitigating Supply Risk: The Role of Supply Chain Management in an Emerging Economy

NO	AUTHORS	TITLE OF ARTICLE	STUDY FOCUS	STUDY DESIGN	CONTRIBUTIONS
1	Adobor, H., & McMullen, R. S. (2018)	Supply chain resilience: a dynamic and multidimensional...	Supply chain resilience	Literature review, conceptual framework	Provides a dynamic view of supply chain resilience, emphasizing its multidimensional nature.
2	Attaran, M. (2020)	Digital technology enablers and their implications...	Digital technology in supply chain management	Literature review, conceptual framework	Discusses the impact of digital technology on supply chain management and identifies implications.
3	AYAZ, H. (2023)	Total Quality Management in Education	Total Quality Management (TQM) in education	Literature review, conceptual framework	Explores the application of TQM in the education sector.
4	Belhadi, A., et al. (2021)	Manufacturing and service supply chain resilience...	Supply chain resilience during COVID-19	Case study	Examines lessons learned from the automobile and airline industries during the COVID-19 outbreak.
5	Brynjolfsson, E., & Mitchell, T. (2017)	What can machine learning do? Workforce implications...	Machine learning in workforce	Literature review, conceptual framework	Discusses the implications of machine learning for the workforce.
6	Chan, C. M. L., et al. (2019)	Agility in responding to disruptive digital innovation...	Digital innovation in an SME	Case study	Explores how an SME responds to disruptive digital innovation.
7	Chen, J., et al. (2013)	Supply chain operational risk mitigation: A collaborative...	Supply chain operational risk mitigation	Literature review, conceptual framework	Discusses collaborative approaches to supply chain operational risk mitigation.
8	Colicchia, C., et al. (2019)	Managing cyber and information risks in supply chains...	Cyber and information risks in supply chains	Exploratory analysis	Provides insights into managing cyber and information risks in supply chains.
9	Crovini, C., et al. (2022)	Dynamic accountability and the role of risk reporting...	Risk reporting during a global pandemic	Literature review, conceptual framework	Examines the role of risk reporting during a global pandemic.
10	Daghar, A., et al. (2021)	The role of collaborative	Supply chain risks from a	Systematic review	Investigates the role of collaborative

		interorganizational relationships...	social capital perspective		relationships in supply chain risks.
11	Del, F., & Solfa, G. (2022)	IMPACTS OF CYBER SECURITY AND SUPPLY CHAIN RISK...	Cybersecurity and supply chain risk	Case study	Explores the impacts of cybersecurity and supply chain risk in the UAE pharmaceutical industry.
12	Ducas, E., & Wilner, A. (2017)	The security and financial implications of blockchain technologies...	Blockchain technologies	Literature review, conceptual framework	Discusses the security and financial implications of blockchain technologies.
13	Edwards, N., et al. (2016)	Supply chain decision analytics: Application and case study...	Critical infrastructure security	Case study	Applies supply chain decision analytics to critical infrastructure security with a case study.
14	Garcia, F. J., et al. (2015)	Reforming the International Investment Regime: Lessons...	International investment regime	Literature review, conceptual framework	Explores lessons from international trade law for reforming the international investment regime.
15	Gaudenzi, B., & Christopher, M. (2016)	Achieving supply chain 'Leagility' through a project...	Supply chain 'Leagility'	Literature review, conceptual framework	Discusses achieving supply chain 'Leagility' through project management orientation.
16	Hafiani, M., et al. (2021)	Supply Chain Risks: A Review Study	Supply chain risks	Literature review, conceptual framework	Reviews supply chain risks and provides insights into managing them.
17	Hajmohammad, S., & Vachon, S. (2014)	Managing Supplier Sustainability Risk: Strategies and Predictors	Supplier sustainability risk	Empirical study	Identifies strategies and predictors for managing supplier sustainability risk.
18	Hofmann, H., et al. (2014)	Sustainability-Related Supply Chain Risks: Conceptualization...	Sustainability-related supply chain risks	Literature review, conceptual framework	Conceptualizes sustainability-related supply chain risks and discusses management approaches.
19	Hosseini, S., et al. (2019)	Resilient supplier selection and optimal order allocation...	Supplier selection and order allocation	Empirical study	Explores supplier selection and order allocation under disruption risks to enhance resilience.
20	Ivanov, D., et al. (2019)	Digital Supply Chain Twins:	Digital supply chain twins	Literature review,	Discusses managing supply chain

		Managing the Ripple Effect...		conceptual framework	disruptions using digital supply chain twins and data-driven optimization.
21	Jain, V., et al. (2017)	Supply chain resilience: model development and empirical...	Supply chain resilience	Model development, empirical analysis	Develops a model for supply chain resilience and empirically analyzes it.
22	Kesebi, O. (2019)	Disruption Ready	Supply chain disruptions	Thought leadership	Discusses readiness for supply chain disruptions.
23	Kırılmaz, O., & Erol, S. (2017)	A proactive approach to supply chain risk management...	Proactive supply chain risk management	Conceptual framework	Proposes a proactive approach to mitigate supply side risks by shifting orders among suppliers.
24	Lessard, D. R. (2013)	Uncertainty and Risk in Global Supply Chains	Risk and uncertainty in global supply chains	Literature review, conceptual framework	Examines risk and uncertainty in global supply chains.
25	Luo, S., & Plescia, J. B. (2019)	Pt Cr Pt Cr	Drug delivery	Literature review, conceptual framework	Discusses drug delivery challenges and innovations.
26	Magableh, G. M., & Mistarihi, M. Z. (2022)	Causes and Effects of Supply Chain Nervousness...	Supply chain nervousness	Empirical study	Analyzes causes and effects of supply chain nervousness in the MENA region.
27	Markmann, C., et al. (2013)	A Delphi-based risk analysis - Identifying and assessing...	Supply chain security risks	Delphi-based risk analysis	Identifies and assesses future challenges for supply chain security in a multi-stakeholder environment.
28	McMaster, M., et al. (2020)	Risk Management: Rethinking Fashion Supply Chain...	Supply chain risk management in fashion	Case study	Rethinks fashion supply chain risk management in the context of the COVID-19 outbreak.
29	Negri, M., et al. (2021)	Integrating sustainability and resilience in the supply...	Sustainability and resilience in supply chains	Literature review, conceptual framework	Integrates sustainability and resilience concepts in the supply chain and outlines a research agenda.
30	Oliveira, L., et al. (2021)	Digital power: Value chain upgrading in an age of digitization	Value chain upgrading in digitization	Literature review, conceptual framework	Examines value chain upgrading in the age of digitization.

31	Özkanlısoy, Ö., et al. (2021)	Port and City Integration: Transportation Aspect	Port and city integration	Literature review, conceptual framework	Explores port and city integration in terms of transportation.
32	Patel, K. R. (2023)	Enhancing Global Supply Chain Resilience...	Supply chain resilience	Literature review, conceptual framework	Discusses strategies for enhancing global supply chain resilience.
33	Pundir, A. K., et al. (2019)	Technology integration for improved performance...	Technology integration in supply chain	Case study	Examines technology integration in supply chains with IoT and blockchain technology.
34	Ryciuk, U., & Nazarko, J. (2020)	Model of trust-based cooperative relationships...	Cooperative relationships in a supply chain	Empirical study	Presents a model of trust-based cooperative relationships in a supply chain.
35	Sawik, T. (2017)	A portfolio approach to supply chain disruption management	Supply chain disruption management	Literature review, conceptual framework	Proposes a portfolio approach to manage supply chain disruptions.
36	Singhal, P., et al. (2011)	Supply chain risk management: Review, classification...	Supply chain risk management	Literature review, conceptual framework	Provides a comprehensive review and classification
37	Soto-Acosta, P. (2020)	COVID-19 Pandemic: Shifting Digital Transformation...	Digital transformation during COVID-19	Literature review, conceptual framework	Discusses the acceleration of digital transformation during the COVID-19 pandemic.
38	Srai, J. S., et al. (2015)	Future supply chains enabled by continuous processing...	Continuous processing in supply chains	Thought leadership	Explores opportunities and challenges of future supply chains enabled by continuous processing.
39	Tang, C. S., et al. (2018)	Sourcing from suppliers with financial constraints...	Sourcing from suppliers with financial constraints	Empirical study	Analyzes sourcing from suppliers with financial constraints and performance risk.
40	Teoman, S., & Ulengin, F. (2018)	The impact of management leadership on quality performance...	Management leadership in supply chains	Empirical study	Examines the impact of management leadership on quality performance throughout a supply chain.

41	Torres, V. C. (2020)	Compliance Behaviour of New Zealand Exporters...	Compliance behavior of exporters	Empirical study	Investigates compliance behavior of New Zealand exporters with supply chain security best practices.
42	Wahidmurni (2017)	濟無No Title No Title No Title	Sustainable supply chain management	Thought leadership	Discusses sustainable supply chain management.
43	Wannous, A. (2014)	Developing Contingency Plan In Governmental Organisation...	Contingency planning in governmental organizations	Case study	Develops a contingency plan in governmental organizations from the perspective of ISO 22301.
44	World Health Organization (2004)	Global Status Report on Water Safety Plans	Water safety plans	Report	Provides a global status report on water safety plans.
45	Zou, Z., et al. (2021)	Risk analysis in the management of a green supply chain	Risk analysis in green supply chains	Literature review, conceptual framework	Discusses risk analysis in the management of green supply chains.

