

Supply Chain Risk Management and Firm Performance: A PRISMA-Guided Cross-Industry Systematic Review

Hu Mengting¹, Noor Fzlinda Fabeil^{2*}, Ang Hong Loong³

¹Faculty of Business, Economics and Accountancy, Universiti Malaysia Sabah, Jalan UMS, 88400 Kota Kinabalu, Sabah, Malaysia.

Email: HU_MENGTING_DB21@iluv.ums.edu.my

²Faculty of Business, Economics and Accountancy, Universiti Malaysia Sabah, Jalan UMS, 88400 Kota Kinabalu, Sabah, Malaysia.

Email: fzlinda@ums.edu.my

³Faculty of Business, Economics and Accountancy, Universiti Malaysia Sabah, Jalan UMS, 88400 Kota Kinabalu, Sabah, Malaysia.

Email: angkingsley@ums.edu.my

ABSTRACT

Supply chain risk management (SCRM) is increasingly important in manufacturing, retail, and healthcare sectors because of the growing frequency of global disruptions, digital transformation, and sustainability problems. The purpose of this research is to examine existing empirical and conceptual evidence of the impact of SCRM on operational, financial and sustainability performance across industries. Using transformed search strings, 400 records were collected from major academic databases, and an additional 46 studies were identified through backward and forward reference searching. After screening for relevance and eligibility, 50 closely related studies entered the final qualitative synthesis. These studies focused on risk factors in various industries, technology-based SCRM practices (artificial intelligence, the Internet of Things, blockchain, Industry 4.0), resilience strategies, and performance effects. Overall, the findings indicate that SCRM positively affects operational, financial, supply continuity, and sustainability-related performance, where supply chain resilience often acts as a capability. This study proposes digital capabilities improve the ability to detect, monitor, and respond to risks, particularly in manufacturing and healthcare industries, whereas the retail industry emphasizes risk reduction through relationships and cooperation. Overall, this fragmented evidence is synthesized in this systematic literature review following the PRISMA guidelines to provide a cross-industry comprehension of the role of SCRM in business performance under disruptions. The results indicate the significance of digital adoption, resilient actions, and specific risk management practices per industry. This study contributes to further combining the dynamic capabilities and resilience views and provides managerial implications for more adaptable, digitally supported SCRM strategies.

CORRESPONDING

AUTHOR (*):

Noor Fzlinda Fabeil
(fzlinda@ums.edu.my)

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Contribution/Originality: This study contributes to the literature by synthesizing fragmented SCRM research across industries. It uses a PRISMA-based systematic approach. This study is one of the few studies that compare industries. Its primary contribution is identifying resilience mediates SCRM–performance relationships. This study examines digital and industry-specific SCRM mechanisms.

1. Introduction

Supply chains have become a more complex, globalized, and vulnerable to a variety of disruptions, from pandemic to geopolitical tensions, cyber threats, and environmental uncertainties. Over 80% of global companies have experienced major supply chain disruptions in recent years, and in some cases the financial losses have been over \$100 million or more (Kumar et al., 2018, Singh & Kushwah, 2025). So, Supply Chain Risk Management (SCRM) has become strategic. With the evolution of supply chains, driven by digital transformation and Industry 4.0, risk management has assumed a pivotal role in maintaining competitive advantage and organizational success (Nakano & Lau, 2020; Safari et al., 2023).

The articles developing supply chain risk management (SCRM) increased since the early 2000s, emphasizing isolated risk events to recent supply chain resilience, agility, and digital strategies (Carneiro et al., 2019; Fagundes et al., 2020). Recent studies have introduced the Resource-based View (RBV) and dynamic capabilities framework to explain a firm's resilience in risk management (Alfaqiyah et al., 2025; Pan et al., 2025). SCRM implementation positively affects operational, financial, and supply chain continuance outcomes, especially in the manufacturing and healthcare sectors (Perlambang et al., 2025; Senna et al., 2023), although studies vary significantly across sectors, approaches, and targeted factors.

The growing embeddedness of digital technologies, such as artificial intelligence (AI), the Internet of Things (IoT), blockchain, and big data, is being lauded for their role in improving risk visibility, predictive monitoring, and decision-making (Birkel & Hartmann, 2020; Shetty et al., 2023; Nwamekwe & Igbokwe, 2024). Industry 4.0 technologies have been credited for enabling supply chain agility and resilience, especially in the manufacturing industry (Bashar & Taher, 2024; Alfaqiyah et al., 2025). The integration of digital technologies within healthcare supply chains has been studied to improve operational continuity and responsiveness amid the pandemic (Senna, 2023; Ahmed et al., 2025). Cooperation, coordination, and relationship-centric mechanisms of supply chain management, rather than advanced digital technology deployment, are emphasized within the retail industry (Shaikh & Ahmed, 2022). These sector-specific studies highlight the importance of cross-sector comparative analysis.

However, there are still limitations in existing studies on SCRM. First, there are studies on SCRM based on empirical surveys that are cross-sectional (Aghapour et al., 2017; Bhattiaa & Bhattia, 2019). Second, diverse definitions of SCRM and varying measures of SCRM performance are used (Kilubi & Haasis, 2015; Vishnu et al., 2019). Third, there is a lack of comparative study for benchmarking in the manufacturing industry, retail industry, and healthcare industry (Safari et al., 2023; Elandaloussi et al., 2020). In addition, although digital tools for SCRM are mentioned in many studies, there are insufficient explanations of the challenges of these tools, such as data privacy,

integration with existing supply chains, and the cost–benefit of digital tools (Mudholkar, 2024; Apu, 2025).

These inconsistencies and fragmented research spur the need for a rigorous and transparent synthesis of the existing evidence. The Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA 2020) provide a systematic approach for identifying, screening, assessing, and synthesizing relevant studies while minimizing selection bias and maximizing replicability. While systematic reviews in SCRM have been conducted, few studies specifically follow a PRISMA-designed protocol that harnesses cross-industry SCRM performance outcomes, digital transformation factors, and resilience strategies, particularly in these contexts (Nakano & Lau, 2020; Fagundes et al., 2020).

2. Purpose and Scope of the Review

The main aim of this study is to develop and implement a systematic review protocol on PRISMA 2020 to draw upon existing empirical and conceptual evidence on the relationship between supply chain risk management and business performance. In addition to the supply chain risk management, several recent studies have examined other aspects of SCRM, including risks, mitigation of risks, supply chain resilience, and digital transformation. But this knowledge pool is diversified by industry, methodologies and outcomes so there are little possibilities for cumulative knowledge.

For a systematic and transparent way to identify, filter and synthesize relevant studies, the review is followed in line with PRISMA. This review examines research published between 2000-2021, focused on peer-reviewed journal articles that report on SCRM practice and performance. Therefore, the study responds to demand for systematic evidence integration in supply chain and operations management research.

The three broad categories of high risk and high impact industries covered here are manufacturing, retail and healthcare. These sample categories were chosen based on economic importance, global disruption challenges, and digital adoption rates. These industries research focuses on operational, financial, consumer, and green performance factors. In addition, supply chain resilience is represented as a mediating capability, a digital enabler such as artificial intelligence (AI), the Internet of Things (IoT), blockchain, and Industry 4.0. This review thus wants to provide a simplified analysis that provides insights into theoretical fundamentals, methodology trends, and future research topics.

This study's objectives are those listed below:

- i. Conduct a systematic review of the literature and then select the peer-reviewed articles which share the relationship between SCRM and business performance following the PRISMA 2020 protocol.
- ii. To investigate the impact of SCRM practices on operating, financial, customer, and sustainability performance.
- iii. To look at the developments in SCRM models responding to global market disruptions such as pandemic shocks and geopolitical uncertainty and to examine the change from reactive to proactive resilience.

- iv. To identify methodology patterns, theories, and research gaps in SCRM-performance studies and build an enabling roadmap for future empirical and longitudinal research.

This research is conducted as a rigorous PRISMA-guided study on empirically validated, empirically and theoretically grounded policy and practices in risk management.

3. Methodology

This study uses the PRISMA 2020 guideline (Preferred Reporting Items for Systematic Reviews and Meta-Analyses) for transparency, replication and rigidity in the review of literature on SCRM and business performance to achieve consistency, replication, and rigorousness in evaluating the literature on SCRM and business performance. The PRISMA guideline serves as the systematic identification, screening, eligibility, and inclusion of studies to minimize bias in selecting pertinent studies and to ensure that the data collected is reliable. The review was based on a wide-ranging discussion on whether SCRM is affecting the performance of businesses in manufacturing, retail, or health care sectors. The query was then expanded into several search string searches that included crucial terms like supply chain resilience, digital transformation, industry 4.0, artificial intelligence, internet of things, blockchain, and various performance indicators including operating, financial, customer, and sustainability outcomes to be accurate and thorough. These search strings were modified to include the synonyms used in previous SCRM studies (Nakano & Lau, 2020; Fagundes et al., 2020).

Several academic databases searched peer-reviewed journal articles from 2000 until 2025. The search yielded 400 records, and 46 additional studies were identified based on backward and forward citation hopping to verify total accuracy and avoid omission bias with 446 remaining records for evaluation. Based upon the guidelines of PRISMA, the titles and abstracts of 446 identified records were screened based on inclusion and exclusion criteria. These studies were excluded if the primary focus of the study was either (1) specifically on SCRM practices, (2) identified the impact SCRM on at least one business performance dimension, and (3) the manufacturing, retail, healthcare, or cross-industry contexts.

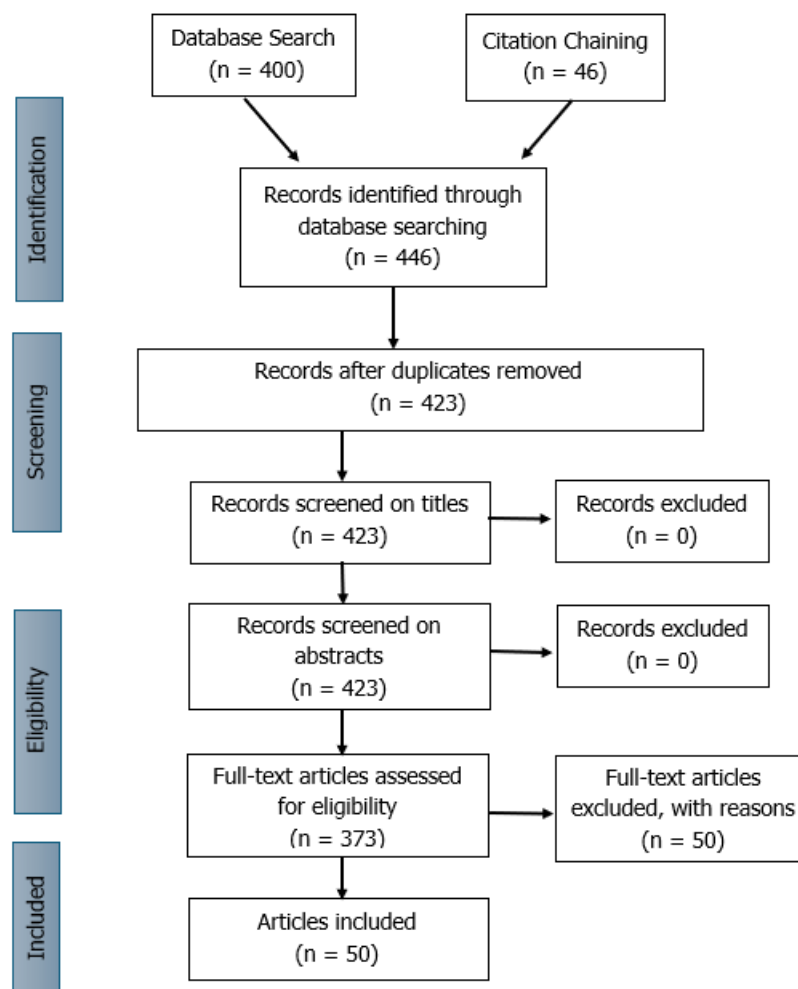
These studies did not report performance measures, were not in the risk topic, or were not peer-reviewed. The first screening phase found 423 records relevant for full-text screening, and 23 out of scope and excluded records. Moreover, conceptual clarity, empirical rigor, and direct relevance to the SCRM-performance relationship were assessed. Overall, 373 studies were excluded as either lacking empirical content, lacking performance outcomes, or having a weak connection to our review's objective. In total, 50 highly relevant studies were included in the qualitative analysis.

In the analysis of the included studies, a structured approach for data extraction was followed. The parameters that were extracted included industry context, methodological approach (such as SEM, PLS-SEM, fsQCA, and case study), theoretical foundation (such as RBV and dynamic capabilities), risk types, technology adoption, resilience factors, and performance measures. The synthesis was thematic and comparative in nature, exploring the experiences of different industries with specific supply chain risks and the role of digital technologies in managing supply chain risks. It further compared the impacts of supply chain risk management practices on organisational performance and examined various strategies of supply chain resilience in responding to disruptions. The

synthesis also explored how firms adapt their supply chains amid global shocks and uncertainties. This holistic approach meets the request for systematic, theory-based literature reviews in supply chain studies (Vishnu et al., 2019; Carneiro et al., 2019).

The study selection process followed the PRISMA 2020 flow diagram, as shown in Figure 1. First, 400 records from major databases were found in the major databases and 46 more records were selected through citation chaining of backward and forward to complete the screening process for 446 records. The titles and abstracts of these records were checked to exclude those that are not related to risk management in supply chains or studies not related to business performance. The selection and eligibility assessment of 373 studies were excluded because they did not have empirical relevance or the direct focus on the relationship between SCRM and performance, while 50 highly relevant studies were added to the qualitative synthesis in the qualitative synthesis.

Figure 1: PRISMA Flow Diagram of Study Selection Process for the Systematic Review on Supply Chain Risk Management and Business Performance



4. Results

Following the PRISMA methodology, the majority of the 50 most relevant studies document an extensive and diverse set of evidence in relation to the relationship between SCRM practices and business performance across different sectors. The results found five major themes. More than 30 studies have identified specific risks in certain

sectors. For example, a study in the manufacturing industry has highlighted supply risks, operating risks, and environmental risks incorporating flexibility, lean strategies and contingency plans (Safari et al., 2023; Kumar et al., 2018). The healthcare sector covers patient safety risk, regulatory risk and clinical engineering risks in the healthcare supply chain, particularly under pandemic conditions, while the retail sector concerns cooperation and relationship risk and less technological risk (Shaikh & Ahmed, 2023). These observations indicate that risk and mitigation strategies are highly influenced by industry-specific and organizational characteristics.

A further 25 studies show a higher number of digital technologies in SCRM based on artificial intelligence, the Internet of Things, blockchain, and big data. Digital empowerment significantly increased risk monitoring, prediction, and decision-making support (Shetty et al., 2023; Birkel & Hartmann, 2020). Industry 4.0 manufacturing technologies are resilient and efficient, improving information visibility and automating processes (Alfaqiyah et al., 2025; Bashar & Taher, 2024). AI-driven decision models in healthcare studies are gaining momentum for ensuring continuous supplies during critical times (Ahmed et al., 2025), although the uptake is uneven. However, some studies report drawbacks in adopting digital technologies in supply chains due to issues such as data privacy, integration challenges, and limited resources (Mudholkar, 2024; Apu, 2025), implying that digital adoption does not necessarily enhance supply chain performance unless proper organizational factors are in place. 28 studies empirically support that SCRM is positively associated with supply chain performance. Risky supply chain operations can enhance efficiency, profitability, continuity of supply, and customer satisfaction (Perlambang et al., 2025; Huang et al., 2023).

The healthcare supply chain's operational excellence and responsiveness is achieved through digital technology and supply chain risk management (Senna et al., 2023). Plus, social sustainability in small- and medium-sized enterprises (SMEs) acts as a mediator between resilience and supply chain performance (Isfianadewi, 2025). The effects vary depending on the industry and the firm size. The mediation effects of supply chain resilience were also observed repeatedly in the studies. Rather than directly influencing performance, SCRM improved the supply chain resilience (agility, robustness, or recovery) that enhanced performance (Pan et al., 2025; Azizah et al., 2024). Flexibility and proactively avoiding risk factors provided greater benefits in severe disruptions (Chowdhury et al., 2024). These findings support the integration of dynamic capabilities theory.

Twenty-two studies discuss how global crises have shaped the development of SCRM, with many focusing on the Covid-19 pandemic. These studies show a shift in supply chain risk management, which involves shifting from reactive risk management to resilience planning and digital acceleration (Nwani, 2025; Kang & Stephens, 2022). For example, manufacturing and healthcare industries are taking on the digital transformation rapidly during a transition time, while retail takes a long to expand relationships. These research studies in developing countries reveal the opportunities and challenges associated with advanced SCRM practices (Galih, 2024; Elandalousi et al., 2020).

This interdisciplinary review after PRISMA methodology suggests that effective SCRM practices positively affect operational, financial and sustainability, where resilience often serves as an important mediator. Digital tools improve risk management but need integration within organizations and adaptation to the working context. Industry-

specific factors continue to be highly relevant, emphasizing the need for customized rather than standardized SCRM models.

Table 1 provides a summary of the articles that have been reviewed regarding supply chain risk management and business performance in the manufacturing industry as well as the retail and healthcare industries. The results discussed earlier indicate that supply chain risk management practices such as risk identification, creating mitigation plans, collaboration, and the use of digital technologies can lead to improved operational stability and resilience and, subsequently, overall firm performance. Many also point out the roles and benefits of digital technologies, including artificial intelligence, the Internet of Things, blockchain, and data analytics, in providing risk visibility and risk response. Interestingly, the results of the articles suggest industry-specific or organizational-specific effects of SCRM practices. For example, industry-specific risk structures, firm size, digital maturity levels, and access to resources impact the effectiveness of risk management practices in improving performance. Overall, these studies indicate that supply chain resilience is often the primary mechanism by which SCRM practices contribute to continuity, efficiency, and performance in the long run.

Table 1: Descriptive Summary of Selected Studies on Supply Chain Risk Management Practices and Business Performance

Studies by Author(s) and Year	Key Supply Chain Risk Management Practices and Context	Reported Business Performance Effects
Safari et al. (2023a)	Identifies demand, supply, operational, and environmental risks. Emphasizes collaboration, risk planning, and knowledge management across SMEs and large firms.	Improved resilience capabilities and operational stability across firm sizes.
Safari et al. (2023b)	Examines supply chain risk, disruption, and resilience across firm sizes and industry types, with emphasis on tailored resilience planning.	Collaboration and risk management enhance resilience and improve performance stability.
Senna et al. (2020)	Healthcare risk management framework addressing clinical engineering, regulatory, and operational risks. Limited digital adoption.	Conceptual link between structured risk management and healthcare supply continuity.
Shetty et al. (2023)	Digitalization in manufacturing using AI, IoT, blockchain, and big data analytics to manage pandemic-related disruptions.	Improved procurement efficiency and supply chain resilience.
Mudholkar (2024)	Integration of AI and IoT across industries to support operational monitoring and risk detection.	Higher efficiency, productivity, and customer satisfaction.
Apu (2025)	AI driven analytics and automation for cross industry supply chain risk management.	Improved decision quality, operational efficiency, and accuracy.
Senna et al. (2023)	Integration of Supply Chain 4.0 technologies in healthcare risk management and supply chain	Enhanced healthcare supply chain operational excellence.

	integration.	
Ahmed et al. (2025)	AI based resilience decision models for healthcare supply chains during pandemic disruptions.	Improved resilience and sustainability of healthcare supply networks.
Anozie et al. (2024)	Blockchain, analytics, and supplier diversification applied to healthcare supply chain risks.	Improved supply continuity and inventory management efficiency.
Azmi et al. (2025)	Malaysian manufacturing sectors adopt resilience strategies and sustainability integration after COVID-19 disruptions.	Enhanced operational performance and resilience capabilities.
Perlambang et al. (2025)	Manufacturing firms apply structured SCRM practices including risk identification and mitigation.	Positive effect on profitability and supply chain resilience.
Pan et al. (2025)	Digital transformation mediates supply chain risk management and resilience in Chinese manufacturing.	Improved operational performance through enhanced resilience.
Singh and Kushwah (2025)	Global supply chains adopt proactive risk mitigation strategies including supplier cooperation and real time monitoring.	Faster recovery and stronger disruption resilience.
Nwani (2025)	Post pandemic resilience strategies including predictive analytics and digital monitoring systems.	Improved strategic and operational performance.
Huang et al. (2023)	Supply chain visibility and digital tools are used to strengthen resilience in garment manufacturing.	Indirect improvement in firm performance through resilience and agility.
Nam and Lee (2022)	Internal and external risk management structures are linked to agility and robustness in manufacturing supply chains.	Higher supply chain performance through agility and robustness.
Shaikh and Ahmed (2022)	Retail supply chains emphasize cooperation, trust, and relational governance for risk management.	Improved supply chain agility but mixed direct performance impact.
Wang et al. (2023)	Identifies 34 healthcare supply chain risk factors and apply prioritization tools such as fuzzy AHP and ISM for proactive risk evaluation.	Supports better risk anticipation and stronger hospital supply chain continuity.
Azizah et al. (2024)	Manufacturing firms in Jakarta apply information processing capability and digital supply chain tools to manage risks and disruptions.	Greater supply chain continuity and stronger resilience in manufacturing operations.
Galih (2024)	Indonesian manufacturing context emphasizes digital integration, cloud tools, and information processing for disruption management.	Improved resilience and risk management effectiveness through digital integration.
Kumar et al. (2018)	Chinese manufacturing firms manage supply and manufacturing risks through flexibility, information sharing, and HR support.	Positive effect on business performance and operational improvement.
Kang and Stephens (2022)	South Korean manufacturers use digital capability, innovation, and	Improved operational performance through resilience development.

	organizational culture to strengthen resilience during COVID-19 interruptions.	
Saleheen and Habib (2023)	Develops an integrated supply chain performance measurement framework during disruptions, with emphasis on resilience assessment.	Supports optimization of supply chain performance and resilience evaluation.
Nwamekwe and Igbokwe (2024)	Cross-industry review of AI, IoT, and blockchain for risk identification, mitigation, and resilience planning.	Improves operational efficiency and decision-making in risk response.
Aghapour et al. (2017)	Manufacturing SMEs apply risk identification, assessment, and mitigation practices in supply chain operations.	Risk management explains substantial variance in operational performance.
Zhang (2023)	Pharmaceutical case study focuses on supplier relations, insurance, and coordinated mitigation strategies.	Improves overall business performance and supply risk control.
Nakano and Lau (2020)	Reviews SCRM using strategy, structure, process, and performance framework. Emphasizes integrated managerial alignment.	Establishes clear links between SCRM dimensions and business performance outcomes.
Fagundes et al. (2020)	Bibliometric and network analysis of SCRM modelling literature, emphasizing visibility, sustainability, and process integration.	Highlights the need for stronger modelling approaches to improve performance linkage.
Carneiro et al. (2019)	Reviews supply and demand risk management models and mitigation strategies in supply chains.	Suggests that effective mitigation can improve performance, though more empirical testing is needed.
Bhattiaa and Bhattia (2019)	Examine SCRM with supply chain integration as a moderator in public sector organizations.	SCRM improves organizational performance, flexibility, and operational efficiency.
Vishnu et al. (2019)	Consolidates SCRM models and methods for managerial decision support and mitigation planning.	Highlights the role of better risk modelling in improving supply chain outcomes.
Elandaloussi et al. (2017)	Quantitative study in Moroccan manufacturing examining flexibility, redundancy, and collaboration as SCRM strategies.	Flexibility and collaboration positively strengthen resilience and support performance.
Hong and Kolios (2020)	Proposes a framework for managing risks in large-scale organizational supply chains, focusing on delays, quality issues, and visibility.	Better visibility supports risk mitigation effectiveness and operational control.
Fallahieh et al. (2024)	Examines how data analytics capability supports risk management and firm performance using a SCOR-based logic.	Risk management mediates the positive effect of analytics capability on firm performance.
Birkel and Hartmann (2020)	Explores IoT adoption in manufacturing SCRM, emphasizing data transparency and better risk knowledge.	IoT improves the effectiveness of risk strategies and supports stronger resilience.
Shenoi et al. (2021)	Indian manufacturing study uses fuzzy cognitive mapping to predict	Supports more effective decision-making and risk response in

	risks and risk mitigation actions.	manufacturing supply chains.
Ibrahim et al. (2023)	Integrates green supply chain management practices with risk mitigation in Malaysian manufacturing.	Enhances economic and environmental performance.
Alfaqiyah et al. (2025)	Industry 4.0 technologies, including AI, IoT, and big data, support agility and adaptability in manufacturing firms.	Stronger resilience and performance, especially when customer integration is high.
Sanket and Ankitkumar (2024)	Pharmaceutical supply chains respond to natural disasters and geopolitical disruptions using IoT, AI, blockchain, and supplier diversification.	Improves supply continuity and resilience under major disruptions.
Magodi et al. (2024)	Systematic review of resilient manufacturing systems, emphasizing AI, machine learning, and big data as resilience enablers.	Supports fast recovery and improved resistance to disruptions.
Shenoi et al. (2018)	Indian manufacturing study prioritizes risk monitoring, avoidance, and sharing through strategic action grids.	SCRM strategies improve supply chain performance with strong top management support.
Kilubi and Haasis (2015)	Reviews SCRM enablers as preventive and responsive strategies, proposing a theoretical foundation for the field.	Indicates possible performance benefits, but empirical confirmation remains limited.
Bashar and Taher (2024)	US manufacturing context highlights IoT, AI, blockchain, and robotics for proactive and agile risk management.	Improves efficiency, transparency, and resource allocation in supply chains.
Isfianadewi (2025)	Examine resilient supply chains in creative industry SMEs, with sustainability as a mediator.	Social sustainability strengthens the resilience-performance relationship.
Elandaloussi et al. (2020)	Qualitative study of Moroccan automotive firms examining country and industry differences in SCRM practices.	Shows that contextualized SCRM approaches are important for maintaining sector performance.
Chowdhury et al. (2024)	Develops resilience capability portfolios for severe disruptions using mixed methods. Focuses on flexibility and risk factor nullification.	Better supply chain performance when resilience strategies are combined effectively.
Bahroun and Harbi (2015)	Retail case study and review identifying sector-specific risks and trade-offs in modern retail supply chains.	Risk modelling improves understanding of performance trade-offs in retail operations.
Senna (2023)	Investigates healthcare supply chain performance with public and private sector moderating effects under SCRM.	Confirms positive causal links between SCRM and healthcare supply chain performance.
Boon-itt et al. (2022)	Examines supply chain resilience practices such as flexibility, collaboration, and risk monitoring through a systematic literature review.	Supply chain resilience improves operational efficiency, recovery capability, and overall firm performance.

Ivanov & Dolgui (2020)	Analyzes disruption risks and resilience strategies in digital supply chains using simulation models.	Improves supply continuity, operational stability, and recovery performance during disruptions.
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5. Discussion

This systematic literature review following the PRISMA protocol consolidates the fragmented evidence on the SCRM–business performance relationship from manufacturing, retail, and healthcare sectors. It identifies and synthesizes 50 relevant research articles to systematically evaluate the synergistic effects of risk management skills, digital technologies, and supply chain resilience elements on supply chain performance metrics amid unprecedented uncertainties.

The proposed write-up suggests that there is a positive influence between SCRM practices and performance. However, it is not always the case, and the relationship is not direct. While a few studies in the review show the direct influence of risk identification and mitigation on performance (Perlambang et al., 2025; Huang et al., 2023), performance improvement is indirect through resilience capabilities. Studies by Pan et al. (2025) and Azizah et al. (2024) support this claim where resilience in the form of agility, flexibility, and recovery is the key to reaping the benefits of risk management in improving performance.

This literature review also highlights that numerous papers emphasize the growing role of digital technologies in improving the performance of SCRM practices. For example, AI-enabled predictive analytics, IoT-based monitoring, and blockchain-based transparency are some of the digital technologies that have a growing role in improving visibility and response time in SCRM practices (Birkel & Hartmann, 2020; Shetty et al., 2023). Interestingly, some papers also highlight that the adoption of digital technologies did not necessarily result in performance improvement. Some papers stated the reasons for this, such as complexities in digital technology integration, lack of resources, or data issues (Mudholkar, 2024; Apu, 2025).

Notably, this literature survey suggests a predominance of results flowing from cross-sectional survey-based research, with limited evidence from longitudinal or experimental research designs. As Aghapour et al. (2017) and Bhattiaa and Bhattia (2019) have highlighted in the past years, this finding suggests that the relationships between the constructs may be exaggerated because many performance measures are perceptual, reinforcing the need for sounder empirical research designs to establish the existence of a long-term impact of SCRM practices.

The research findings contribute to theory development in multiple ways. First, the dynamic capabilities theory could be integrated in this study as resilience consistently mediated the relationships among the variables. Supply chain risk management can be considered a sensing, seizing, and reconfiguring capability that improves the organization's adaptability when faced with supply chain disruptions (Alfaqiyah et al., 2025; Pan et al., 2025). SCRM is not viewed here as an organization's risk management defensive capability but as a strategic capability that increases competitive advantage.

Second, this supports the arguments from the resource-based view (RBV), where digital technology, data analytics, and relational coordination can serve as valuable, inimitable resources and contribute when readily incorporated into risk management systems

(Nakano & Lau, 2020; Fagundes et al., 2020). The varying effect of firm size across studies implies that resources and absorptive capacities play a moderating role in SCRM practices. Thirdly, the review contributes to theoretical cohesion, as it highlights that resilience mediates rather than moderates the relationship between SCRM and performance, thereby resolving the conceptual conflict in previous studies (Vishnu et al., 2019) and providing a more lucid rationale for subsequent empirical investigation.

For managers, it is critical to maintain a dynamic and complementary balance between risk processes, digital technologies, and risk relationships to manage supply chain risk effectively. Manufacturing firms use operational flexibility and Industry 4.0 technologies to improve agility and predictability (Safari et al., 2023; Bashar & Taher, 2024). Healthcare firms use AI-based demand forecasting and resilience planning to handle public health emergencies effectively (Senna et al., 2023; Ahmed et al., 2025). Retail firms predominantly rely on collaborative relationships and trust to mitigate relational risks (Shaikh & Ahmed, 2022). Thus, managers should not blindly adopt a standard risk framework across industries. Risk prevention strategies should also address industry-specific risks, digital maturity, and regulatory policies. Plus, digital investment should be supported by the development of organizational capabilities, such as training employees and integrating organizational functions.

This research possesses the notable strength of having employed a PRISMA 2020 protocol. Its systematic approach in identifying, screening, and evaluating eligibility reduces bias in the selection of studies, thereby enhancing the reliability of the findings. Utilizing both retroactive and proactive citation chaining contributes to the completeness of the review. Nevertheless, this review has some limitations. First, this review considers only peer-reviewed journal articles in the English language. Second, this review studies performance trends by combining literature across literature but does not conduct quantitative meta-analysis because performance is measured across multiple measured measures. Third, the limitations of past studies, such as cross-sectional bias and self-reported performance measures, may affect this review. Future researchers can use meta-analysis, longitudinal filtering, and regional level comparison.

The findings of this review are evidence of a different extent of implementation and effectiveness of SCRM practices within the different sectors. Manufacturing companies are typically more concerned with the operational and environmental risks associated with digital technologies and flexible manufacturing systems (Kumar et al., 2018; Safari et al., 2023). Healthcare supply chains look more specifically at continuity of supply, patient safety and regulatory issues when the pandemic occurred (Wang et al. 2023; Senna et al. 2020). Retailers are more risk-based and this approach prefers relationship-based risk reduction (Shaikh & Ahmed 2022). In new economies, there might be further variations. Another common problem described are structural problems such as resource deficiency, technological infrastructure, and institutional uncertainty (Galih, 2024; Elandaloussi et al., 2020). These differences indicate the need for contingency, situation-based SCRM models rather than one-size-fits-all models.

This study performs systematic reviews as the PRISMA guidelines to better understand the SCRM-performance relationship. In the multidisciplinary review this paper proposes that SCRM improves business performance by using resilience and digital capabilities, and this will be different from different industries and contexts. In general, this study explores theoretical mechanisms, research techniques, and contextual features to provide guidance for the future research.

6. Limitations

Although this systematic review has followed the PRISMA 2020 protocol and was conducted with methodological rigor, there are several limitations that should be noted. First, the literature review is limited to peer-reviewed journal articles published within the 2000-2005 period in major academic literature databases. This temporal and content criterion provides quality and time. However, it leaves out non-peer-reviewed documents such as non-academic and industry publications, dissertations, or conference papers that may offer additional evidence and insights relevant to the implementation of Supply Chain Risk Management (SCRM) practices. Managing risks in supply chains is a fast-paced practice, especially during times of crises like Covid-19, and valuable experiential evidence might not be included in this literature review.

Second, this literature review is based solely on English articles. Some locally written literature may be disregarded, such as those from emerging markets, where supply chain risk and resilience practices might differ (Elandaloussi et al., 2020; Galih, 2024). Therefore, these results may not be directly applicable to different institutional settings. Third, despite the structured searching, screening, and eligibility process under the guidelines of PRISMA, the findings of this literature review are subject to the limitations of the potential methodological shortcomings of the primary studies being reviewed. As discussed in our prior works (Aghapour et al., 2017; Bhattiaa & Bhattia, 2019), most of the SCRM research used cross-sectional surveys and perceptual measures of performance, which do not measure causality and may lead to exaggeration of the relationship between SCRM and business performance. In addition, most research used structural equation modelling approaches (SEM and PLS-SEM) that do not contribute to understanding risk occurrence over time.

Fourth, further challenges in synthesis are related to heterogeneity in the definitions of constructs and performance measures. As discussed earlier, varying definitions of SCRM dimensions and resilient constructs (Vishnu et al., 2019) make it difficult to compare these studies. This research review uses a thematic synthesis to mitigate this issue, but the lack of standard measures inhibits the possibility of a meta-analysis. Finally, it is important to note that there are industry sector imbalances in terms of the studies included. Several studies come from manufacturing settings, while notably fewer are from health care or retail, especially in developing countries.

7. Future Research Directions

Implications for future research on Supply Chain Risk Management and business performance can be drawn from this systematic literature review following the PRISMA methodology. First, longitudinal and multi-method studies could be considered to examine the development of risk management capabilities more effectively. As supply chain resilience and digital integration are ongoing processes, future research can use panel data analysis and mixed methods to generate more robust causal inferences than surveys (Pan et al., 2025; Azizah et al., 2024). Experiments and quasi-experiments can analyze the effects of various SCRM practices on performance.

Second, closer theoretical integration is necessary to improve the explanation mechanism of the SCRM-performance relationship. Dynamic capabilities and resource perspective have been used extensively (Nakano & Lau, 2020; Alfaqiyah et al., 2025); but, other theoretical views, such as information processing theory, contingency theory,

and institutional theory, should be examined to capture contextual differences. In particular, the role of resilience as a mediator, which emerges from this review, should be investigated further.

Third, research into the cost-benefit aspects of digital technologies in SCRM context are necessary. Above-mentioned emerging digital technologies, such as AI, IoT, and big data analytics, have been reported to offer promising applications in SCRM for improved risk visibility and response capability (Birkel & Hartmann, 2020; Shetty et al., 2023), but studies providing insights on the return on investment remain sparse.

The fourth idea is to explore comparative research across industries or countries. As discussed, there are different issues related to different industries, such as manufacturing, health care, and retail (Safari et al., 2023; Shaikh & Ahmed, 2022; Senna et al., 2023). There is little research comparing industries and countries. More research focusing on comparative studies in emerging countries is needed to overcome technical and infrastructural barriers (Elandalousi et al., 2020; Galih, 2024).

Fifth, performance metrics related to sustainability and ESG aspects could be introduced in future research. A few studies reveal the impact of social sustainability and environmental factors as a mediator between resilience and performance (Isfianadewi, 2025), but the results are not consistently measured. In summary, forthcoming systematic reviews might build upon this work, which is guided by PRISMA, by including quantitative meta-analysis, bibliometric mapping, or network analyses along with the thematic synthesis.

8. Conclusion

This study performs a systematic review of the literature pertaining to the linkage between Supply Chain Risk Management (SCRM) and business performance within manufacturing, retail, and healthcare industries over the past 20 years. This study systematically identifies, selects, and critically evaluates research in this domain using PRISMA 2020 guidelines. It uses standard search criteria and eligibility to discuss the progress made in these industries and synthesize the results of 50 relevant studies reporting on this linkage from a pool of 446 candidate articles. Overall, this research stream indicates that SCRM practices positively impact firm performance in terms of efficiency, financial performance, and supply continuity, as well as the newer aspects of sustainability-related performance, albeit often indirectly through the SCM resilience capabilities like agility, flexibility, robustness, and recovery, among others (Pan et al., 2025; Azizah et al., 2024). These further bolster the idea of SCRM being perceived and established as a strategic capability, in line with the dynamic capabilities' theory (Alfaqiyah et al., 2025).

Moreover, the review shows increasing evidence of digital technologies augmenting SCRM effectiveness. A key digital technology such as AI and IoT and blockchain and big data analytics, which can help to be more visible, monitored, and coordinated in risk management is AI and IoT, blockchain, and big data analytics (Birkel & Hartmann, 2020; Shetty et al., 2023). But just as the use of such digital tools does not always mean better outcomes, organizational capacity and context will determine the efficiency of these Digital Tools (Mudholkar, 2024; Apu, 2025). Sector-wise analysis of manufacturing shows that firms, primarily in terms of flexibility and industry 4.0 adoption, focus on continuity and relevant regulations at the Pandemic, hospitals and healthcare delivery

systems in general, as well as the retail industry with high degree of coordination and cooperation to share risk in the supply chain (Shaikh & Ahmed, 2022).

Regarding research methodology, PRISMA also allows for greater confidence in the completeness and reproducibility of the assessment process, and the search strategies, screening, and eligibility decisions are documented publicly. The combined results indicate common deficiencies in the research conducted in the initial literature such as cross-sectional surveys and performance assessment on perceptions (Aghapour et al., 2017, Bhattiaa & Bhattia, 2019). The outcome of this systematic review with the PRISMA protocol is to contribute to the SCRM literature by combining and mixing several of the components of studies into a well-rounded conceptual framework, including risk management practices, resilience, digital transformation, and performance. This research provides theoretical insights into mediating factors and conditional variables and practical implications with industry-specific risk management strategies based on agility and technology. As global supply chains are constantly being threatened by major crises and trends, literature reviews are invaluable for guidance to future researchers and practitioners.

Ethics Approval and Consent to Participate

This study is a systematic literature review and does not involve human participants. Therefore, ethics approval and informed consent were not required.

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Conflict of Interest

The authors declare no conflict of interest.

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