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**Effect of Sustainable Supplier Relationship  
Management on Supply Chain Resilience among  
Manufacturing Firms in Japan**



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**Abstract**

**Purpose:** The aim of the study was to analyze the effect of sustainable supplier relationship management on supply chain resilience among manufacturing firms.

**Methodology:** This study adopted a desk methodology. A desk study research design is commonly known as secondary data collection. This is basically collecting data from existing resources preferably because of its low-cost advantage as compared to field research. Our current study looked into already published studies and reports as the data was easily accessed through online journals and libraries.

**Findings:** The reviewed literature established that Sustainable Supplier Relationship Management positively influences Supply Chain Resilience by enhancing supplier collaboration, trust, supplier development, and information sharing, enabling manufacturing firms to respond effectively to supply chain disruptions. The studies further revealed that strong supplier relationships improve flexibility, operational continuity, risk management, and recovery from disruptions. However, conceptual, contextual, and geographical gaps remain, highlighting the need for further research on the effect of sustainable supplier relationship management on supply chain resilience among manufacturing firms.

**Unique Contribution to Theory, Practice and Policy:** Dynamic capabilities theory, resource-based view & social exchange theory may be used to anchor future studies on analyze the effect of sustainable supplier relationship management on supply chain resilience among manufacturing firms. Organizations should invest in supplier development programs, supplier performance evaluation systems, joint innovation initiatives, and real-time information-sharing platforms to strengthen collaboration across the supply chain. Governments and regulatory agencies should formulate policies that encourage sustainable supplier relationship management practices across the manufacturing sector.

**Keywords** *Sustainable Supplier Relationship Management, Supply Chain Resilience, Manufacturing Firms*

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## INTRODUCTION

Supply Chain Resilience (SCR) refers to the capability of a supply chain to anticipate, prepare for, respond to, recover from, and adapt to unexpected disruptions while maintaining continuity of operations and sustaining competitive performance (Gebhardt et al., 2022). It encompasses organizational capabilities such as flexibility, redundancy, collaboration, visibility, agility, and rapid recovery that enable firms to withstand both internal and external shocks. In developed economies, SCR has become a strategic priority due to increasing disruptions arising from pandemics, geopolitical conflicts, cyber threats, and natural disasters. In the United States, a survey of more than 4,000 manufacturing firms reported that 68% increased inventory buffers, 65% diversified suppliers, and many invested in supply chain monitoring technologies following the COVID-19 pandemic to improve resilience. Similarly, Japan has prioritized geographically diversified supply chains, with government policies encouraging firms to diversify suppliers and production locations to reduce dependency on single-source suppliers and strengthen national industrial resilience (Todo, 2021; Gebhardt, 2022).

The experiences of the United States and Japan demonstrate that resilient supply chains are increasingly built through supplier diversification, digital technologies, collaborative partnerships, and enhanced visibility rather than cost minimization alone. Manufacturing firms in these economies have shifted from lean supply chains toward more adaptive and flexible supply networks capable of responding to disruptions. These resilience strategies have contributed to improved business continuity, faster recovery, and reduced operational risks during periods of uncertainty. Consequently, supply chain resilience has evolved from an operational function into a strategic capability that supports long-term competitiveness and sustainable organizational performance. These experiences provide valuable lessons for firms in other economies seeking to strengthen their resilience capabilities against future disruptions (Gebhardt, 2022).

In developing economies, supply chain resilience remains a major challenge because of inadequate infrastructure, limited technological adoption, supplier dependency, weak logistics systems, and financial constraints. Nevertheless, manufacturing firms are increasingly investing in resilience strategies such as supplier collaboration, supply chain flexibility, digital integration, and risk management to improve operational continuity. Recent studies indicate that developing countries experienced more severe supply chain disruptions during the COVID-19 pandemic because they rely heavily on imported raw materials and international suppliers. Research further shows that firms capable of strengthening supplier relationships, improving information sharing, and enhancing organizational adaptability were better positioned to recover from disruptions than firms relying on traditional procurement practices. Consequently, resilience has become an important determinant of sustainable manufacturing performance in developing economies.

Evidence from developing countries further demonstrates that resilient supply chains require coordinated investments in supplier development, digital technologies, institutional support, and organizational learning. Unlike developed economies, firms in developing countries often face greater resource limitations that restrict their ability to implement sophisticated resilience strategies. However, collaborative supplier relationships, sustainable procurement practices, and knowledge sharing have emerged as practical mechanisms for strengthening resilience despite these constraints. Researchers therefore recommend that governments and manufacturing firms invest in digital infrastructure, supply chain visibility, and collaborative supplier development

programmes to improve resilience against future disruptions. These initiatives are expected to enhance competitiveness while reducing vulnerability to economic and operational shocks.

In Sub-Saharan Africa, supply chain resilience has become increasingly important because manufacturing firms frequently encounter disruptions arising from poor transport infrastructure, border delays, political instability, climate-related events, and heavy dependence on imported production inputs. These challenges were amplified during the COVID-19 pandemic, exposing weaknesses in regional manufacturing and logistics systems. Within the Southern African Development Community (SADC), border closures, transport restrictions, and declining international trade significantly disrupted regional supply chains and manufacturing operations. The disruptions highlighted the importance of regional integration, diversified sourcing, and stronger logistics networks in enhancing resilience. As a result, governments and businesses across the region have increasingly prioritized resilience-building initiatives to improve supply chain sustainability and economic recovery.

Studies conducted in Sub-Saharan Africa conclude that supply chain resilience can be strengthened through regional trade integration, digital transformation, supplier diversification, infrastructure investment, and stronger collaboration among supply chain partners. Manufacturing firms that develop long-term supplier relationships and improve supply chain visibility are more capable of responding to disruptions while maintaining operational continuity. Researchers also emphasize the importance of harmonized regional trade policies and investment in transport infrastructure to reduce vulnerability to future disruptions. Consequently, supply chain resilience is increasingly recognized as a critical driver of manufacturing competitiveness, sustainable industrialization, and regional economic development within Sub-Saharan Africa. These findings underscore the need for continued investment in resilient supply chain systems across the region.

Sustainable Supplier Relationship Management (SSRM) refers to the strategic process through which organizations establish, develop, and maintain long-term collaborative relationships with suppliers while integrating economic, environmental, and social sustainability principles into procurement and supply chain activities. SSRM extends beyond traditional supplier management by emphasizing mutual trust, transparency, ethical business practices, continuous supplier development, and shared sustainability goals to create long-term value for both buyers and suppliers (Shashi, 2022). Four key dimensions commonly associated with SSRM are supplier collaboration, supplier trust and commitment, supplier development, and sustainable information sharing. Supplier collaboration enables joint planning and coordinated decision-making during disruptions, supplier trust and commitment strengthen long-term partnerships and reduce opportunistic behaviour, supplier development improves suppliers' operational and sustainability capabilities, while sustainable information sharing enhances supply chain visibility and timely decision-making (Bag, 2021; Akbar & Aslam, 2023). Collectively, these dimensions strengthen manufacturing firms' ability to anticipate, prepare for, respond to, and recover from supply chain disruptions, thereby improving Supply Chain Resilience.

Supply Chain Resilience refers to the capability of a supply chain to anticipate, resist, adapt to, recover from, and grow stronger after unexpected disruptions while maintaining operational continuity (Belhadi, 2021). Sustainable Supplier Relationship Management enhances resilience by promoting strong partnerships that improve resource availability, operational flexibility, knowledge exchange, and collaborative problem-solving during periods of uncertainty. Supplier



collaboration facilitates coordinated responses to disruptions, supplier trust enhances commitment and reliability, supplier development increases supplier competence and adaptability, while sustainable information sharing improves visibility and early detection of potential risks across the supply chain (Dza, 2024; Zhang, 2022). Consequently, manufacturing firms that effectively implement these four dimensions of Sustainable Supplier Relationship Management are better positioned to minimize disruption risks, maintain continuity of operations, and strengthen overall Supply Chain Resilience in increasingly dynamic business environments.

### **Problem Statement**

The increasing frequency of global disruptions, including pandemics, geopolitical conflicts, climate-related events, and supplier failures, has exposed the vulnerability of manufacturing supply chains and heightened the need for resilient supplier networks. Manufacturing firms are increasingly recognizing that Sustainable Supplier Relationship Management (SSRM), characterized by long-term collaboration, trust, supplier development, information sharing, and sustainability integration, is essential for maintaining business continuity and enhancing supply chain resilience. Despite these efforts, many manufacturing firms continue to experience supplier-related disruptions, delayed deliveries, production interruptions, and increased operational costs, suggesting that sustainable supplier relationships are not yet being effectively leveraged to strengthen resilience capabilities. Recent studies indicate that firms with weak supplier relationships are more susceptible to frequent and prolonged supply disruptions, whereas organizations that invest in collaborative and sustainable supplier partnerships demonstrate greater adaptability and recovery from disruptions.

Although previous empirical studies have established positive relationships between supplier relationship management, supplier integration, sustainable procurement practices, and supply chain resilience (Bag, 2021; Belhadi, 2021; Zhang, 2022; Akbar & Aslam, 2023; Dza, 2024), important gaps remain. Most studies have examined supplier collaboration, supplier capabilities, green supplier integration, or sustainable supply chain management as separate constructs rather than investigating Sustainable Supplier Relationship Management as a comprehensive strategic approach. Furthermore, many studies have focused on operational performance, supply chain agility, or innovation rather than directly assessing the effect of Sustainable Supplier Relationship Management on Supply Chain Resilience. Existing evidence is also concentrated in countries such as Ghana, China, and other developed or emerging economies, limiting the generalizability of findings to other manufacturing contexts. Consequently, there is a need for further empirical investigation into the effect of Sustainable Supplier Relationship Management on Supply Chain Resilience among manufacturing firms to provide context-specific evidence that can guide managerial practice, policy formulation, and future research.

### **Theoretical Review**

#### **Dynamic Capabilities Theory (DCT)**

Dynamic capabilities theory, was developed by David Teece, Gary Pisano, and Amy Shuen (1997). The theory posits that organizations achieve sustainable competitive advantage by continuously sensing environmental changes, seizing opportunities, and reconfiguring internal and external resources to respond effectively to dynamic business conditions. In supply chain management, the theory explains how firms develop adaptive capabilities through strategic supplier relationships

that enhance resilience during disruptions. The theory is highly relevant to this study because Sustainable Supplier Relationship Management enables manufacturing firms to build collaborative capabilities, flexibility, and rapid response mechanisms that strengthen Supply Chain Resilience in uncertain environments (Pu, 2023).

### **Resource-Based View (RBV)**

The Resource-Based View was originated by Birger Wernerfelt (1984) and further advanced by Barney (1991). The theory argues that organizations gain superior performance through valuable, rare, inimitable, and non-substitutable (VRIN) resources and capabilities. Sustainable supplier relationships constitute strategic organizational resources because they facilitate trust, knowledge sharing, innovation, and long-term collaboration that competitors cannot easily replicate. The theory underpins this study by explaining that Sustainable Supplier Relationship Management represents a strategic capability that enhances Supply Chain Resilience and improves manufacturing firms' ability to withstand and recover from supply chain disruptions (Khan et al., 2023).

### **Social Exchange Theory (SET)**

Social Exchange Theory was proposed by George Homans (1958) and later expanded by Peter Blau (1964). The theory states that relationships are sustained through reciprocal exchanges of benefits, trust, commitment, and mutual cooperation among partners. Within supply chains, long-term supplier relationships are strengthened through continuous collaboration, information sharing, and reciprocal support, which promote resilience during disruptions. The theory is relevant to this study because Sustainable Supplier Relationship Management depends on trust-based partnerships that encourage joint problem-solving, resource sharing, and coordinated responses, thereby enhancing Supply Chain Resilience among manufacturing firms (Akbar & Aslam, 2023).

### **Empirical Review**

Dza, Acquah, and Atsu (2024) examined the relationship between supplier relationship management, supply chain resilience, and operational performance among food and beverage manufacturing companies in Ghana. The study aimed to determine whether supply chain resilience mediates the influence of supplier relationship management on firms' operational performance. Supplier relationship management was reflected through practices that strengthen cooperation, information exchange, commitment, and coordination between manufacturing firms and their suppliers. The researchers adopted positivist philosophical assumptions and employed a quantitative research approach. Data were obtained from a sample of 179 food and beverage manufacturing companies in Ghana. A structured survey was used to collect information from respondents who were knowledgeable about procurement and supply chain activities. Descriptive statistics were applied to summarize the characteristics of the collected data. Structural equation modelling was subsequently used to test the proposed relationships among the study variables. The findings revealed that supplier relationship management had a positive influence on the operational performance of the participating manufacturing firms. The study also established that supply chain resilience significantly enhanced operational performance. Moreover, supply chain resilience played a significant mediating role in the relationship between supplier relationship management and operational performance. These findings indicate that strong supplier relationships help firms

obtain the information, flexibility, materials, and support required to respond effectively to supply disruptions. The study recommended that manufacturing firms establish long-term supplier partnerships, strengthen information sharing, involve suppliers in operational planning, and develop joint mechanisms for managing disruptions. It also implied that policymakers and manufacturing associations should promote supplier-development programmes and collaborative supply chain practices within the food-processing sector. The study is relevant to the present research because it provides direct empirical evidence that sustainable supplier relationship practices can strengthen supply chain resilience and improve manufacturing performance (Dza, 2024).

Akbar and Aslam (2023) investigated the role of supplier capabilities in strengthening supply-side resilience among manufacturing firms. The study sought to determine how supplier integration affects supply-side resilience through supplier sustainability and supplier flexibility. It was grounded in the dynamic capabilities view, which explains how organizations integrate and reconfigure resources to respond to environmental disruptions. The researchers proposed that close integration with suppliers promotes sustainable supplier practices and creates the flexibility necessary for managing unexpected events. A quantitative cross-sectional research design was adopted for the investigation. Data were collected from 181 supply chain managers working in manufacturing firms in a developing-country context. A structured questionnaire was used to measure supplier integration, supplier sustainability, supplier flexibility, and supply-side resilience. The proposed direct and indirect relationships were examined through statistical analysis and mediation testing. The findings showed that supplier integration had a significant positive influence on supply-side resilience. Supplier integration also strengthened supplier sustainability by encouraging closer coordination and shared operational objectives between manufacturers and suppliers. The study further found that sustainable suppliers were more capable of providing the flexibility required during disruptive circumstances. Supplier sustainability and supplier flexibility sequentially mediated the relationship between supplier integration and supply-side resilience. The researchers concluded that supplier capabilities must be developed in an appropriate sequence rather than being treated as isolated resilience practices. They recommended that manufacturing firms first strengthen supplier integration, then support suppliers' sustainability capabilities, and finally establish flexible arrangements for production, delivery, and sourcing during disruptions. The study is relevant because it demonstrates that sustainable supplier integration and flexibility are important pathways through which supplier relationship management improves supply chain resilience (Akbar & Aslam, 2023).

Zhang, Zhao, Fan, Wang, and Shao (2022) examined the relationships among green supply chain integration, supply chain agility, and green innovation performance in Chinese manufacturing enterprises. The study aimed to establish whether green internal, supplier, and customer integration enhance firms' agility and innovation outcomes. Green supplier integration was conceptualized as environmental cooperation between manufacturing firms and their suppliers through shared goals, plans, responsibilities, and operational processes. The researchers adopted a quantitative explanatory research design. Survey data were collected from 405 manufacturing firms operating in China. The measurement instruments were adapted from established scales and refined through expert discussions and pretesting. SPSS and AMOS were used to assess the reliability and validity of the measurement model. Hierarchical regression analysis was used to test the direct

relationships, while bootstrap analysis with 5,000 resamples tested the mediating effects. The findings showed that green supplier integration had a significant positive effect on supply chain agility, with a reported coefficient of  $\beta = 0.316$  and  $p < 0.001$ . Green internal integration and green customer integration also had significant positive effects on supply chain agility. The results further indicated that supply chain agility positively influenced both green product innovation and green process innovation. Supply chain agility partially mediated the relationships between the three dimensions of green supply chain integration and green innovation performance. The authors explained that close environmental collaboration with suppliers facilitates access to information, technology, knowledge, and complementary resources that enable firms to respond rapidly to changes. The study recommended that manufacturing firms develop shared environmental objectives with suppliers, improve interorganizational communication, exchange green knowledge, and integrate suppliers into sustainability-related planning and decision-making. Although the study measured agility rather than resilience directly, it is relevant because agility represents an important resilience capability that helps manufacturing supply chains anticipate, respond to, and adapt to disruptions.

Bag, Gupta, Kumar, and Sivarajah (2021) examined the effect of sustainable supplier relationship management practices on supply chain resilience and organizational performance among manufacturing firms. The purpose of the study was to determine whether collaborative supplier relationships and sustainable procurement practices enhance resilience capabilities in manufacturing supply chains. The study was anchored on the Dynamic Capabilities Theory and the Resource-Based View to explain how collaborative supplier relationships create strategic capabilities that improve resilience. The researchers adopted a quantitative cross-sectional research design. Data were collected from procurement and supply chain managers working in manufacturing organizations with established supplier relationship management practices. Structured questionnaires were used to collect primary data on supplier collaboration, information sharing, sustainability practices, resilience, and firm performance. Partial Least Squares Structural Equation Modeling (PLS-SEM) was employed to test the proposed hypotheses. The findings revealed that sustainable supplier relationship management had a significant positive influence on supply chain resilience. Manufacturing firms that maintained collaborative supplier partnerships demonstrated greater ability to anticipate, absorb, and recover from supply chain disruptions. The study further established that supplier collaboration enhanced supply chain visibility, trust, knowledge sharing, and joint problem-solving during periods of uncertainty. Sustainable procurement practices were also found to strengthen organizational adaptability and operational continuity. The authors concluded that resilient supply chains cannot be achieved without developing sustainable long-term relationships with strategic suppliers. They recommended that manufacturing firms invest in supplier development programmes, sustainability initiatives, digital collaboration platforms, and continuous supplier performance monitoring. They further recommended integrating sustainability objectives into supplier relationship management policies to strengthen long-term resilience. The study is relevant to the present research because it provides empirical evidence that sustainable supplier relationship management significantly strengthens supply chain resilience among manufacturing firms by promoting collaboration, flexibility, and operational continuity.



Belhadi, Kamble, Gunasekaran, Mani, and Khan (2021) investigated the influence of supply chain collaboration and digital technologies on supply chain resilience within manufacturing organizations. The study sought to determine how collaborative relationships among supply chain partners improve resilience during major disruptions such as the COVID-19 pandemic. The researchers adopted a quantitative explanatory research design. Data were collected from manufacturing firms operating in multiple industrial sectors. Procurement managers, logistics managers, and supply chain executives participated in the survey because of their direct involvement in supplier relationship management. Structured questionnaires were administered to respondents. Structural Equation Modeling was used to analyze the proposed relationships. The findings demonstrated that strong supplier collaboration significantly improved supply chain resilience by increasing information sharing, operational flexibility, and supply chain visibility. Manufacturing firms with stronger supplier partnerships were able to recover more quickly from supply chain disruptions than firms with weaker supplier relationships. The study also established that digital technologies strengthened the effectiveness of supplier collaboration by improving communication and real-time information exchange. The researchers concluded that sustainable supplier relationship management is a strategic capability that enhances organizational resilience during uncertain business environments. They recommended that manufacturing firms strengthen long-term supplier partnerships, invest in collaborative digital technologies, and establish joint contingency planning with strategic suppliers. They further recommended continuous supplier engagement and collaborative innovation to enhance resilience against future disruptions. This study supports the current research because it demonstrates that sustainable supplier collaboration directly contributes to stronger supply chain resilience among manufacturing firms.

Shashi, Centobelli, Cerchione, and Singh (2022) investigated the influence of sustainable supply chain management practices on supply chain resilience and organizational performance among manufacturing firms. The primary objective of the study was to establish whether sustainability-oriented supplier relationship management enhances firms' resilience capabilities. The researchers adopted a quantitative survey research design. Data were collected from manufacturing firms operating across different industrial sectors with active supplier relationship management programmes. Procurement and supply chain managers were selected as key respondents because of their experience in supplier collaboration and sustainability initiatives. Structured questionnaires were administered to collect primary data. Structural Equation Modeling was employed to examine the relationships among sustainable supplier management, resilience, and organizational performance. The findings revealed that sustainable supplier relationship management significantly improved supply chain resilience through stronger supplier trust, enhanced collaboration, improved information sharing, and greater supply chain flexibility. Manufacturing firms that actively engaged suppliers in sustainability initiatives demonstrated superior resilience and business continuity during periods of disruption. The study further established that sustainable supplier partnerships positively influenced operational performance by reducing disruption risks and improving responsiveness. The authors concluded that sustainability and resilience should be implemented simultaneously because they reinforce one another in strengthening manufacturing supply chains. They recommended that manufacturing firms establish long-term supplier development programmes, strengthen sustainability standards, improve collaborative planning, and invest in digital supply chain technologies that facilitate supplier integration. The authors also encouraged policymakers to support sustainable supplier

development initiatives that strengthen national manufacturing competitiveness. The study is directly relevant to the present research because it provides empirical evidence that sustainable supplier relationship management significantly enhances supply chain resilience through collaboration, trust, sustainability integration, and strategic supplier partnerships.

## **METHODOLOGY**

This study adopted a desk methodology. A desk study research design is commonly known as secondary data collection. This is basically collecting data from existing resources preferably because of its low-cost advantage as compared to field research. Our current study looked into already published studies and reports as the data was easily accessed through online journals and libraries.

## **FINDINGS**

The results were analyzed into various research gap categories that is conceptual, contextual and methodological gaps

**Conceptual Gap:** The reviewed studies consistently establish that supplier relationship management, supplier integration, supplier collaboration, supplier sustainability, and sustainable procurement practices positively influence supply chain resilience among manufacturing firms (Bag, 2021; Dza, 2024). However, the studies conceptualize the independent variable differently, using constructs such as supplier relationship management, supplier integration, green supplier integration, supplier collaboration, or sustainable supply chain management rather than examining Sustainable Supplier Relationship Management (SSRM) as a unified multidimensional construct. Likewise, the dependent variable is measured using different outcomes, including operational performance, supply-side resilience, supply chain agility, organizational performance, and supply chain resilience, leading to inconsistencies in conceptualization. In addition, Zhang (2022) examined supply chain agility instead of resilience, although agility is only one dimension of resilience. Consequently, there remains limited empirical evidence that comprehensively examines how the dimensions of Sustainable Supplier Relationship Management such as supplier collaboration, supplier trust, supplier development, information sharing, and joint sustainability initiatives collectively influence Supply Chain Resilience. The present study addresses this conceptual gap by operationalizing Sustainable Supplier Relationship Management as a multidimensional construct and examining its direct effect on Supply Chain Resilience among manufacturing firms.

**Contextual Gap:** Although the reviewed studies provide valuable evidence on supplier relationships and resilience, they were conducted in different industrial and organizational settings. Dza (2024) focused specifically on food and beverage manufacturing firms, while Zhang (2022) investigated green innovation within Chinese manufacturing enterprises. Belhadi (2021) examined supply chain collaboration during the COVID-19 pandemic across manufacturing and service industries, whereas Shashi (2022) investigated sustainable supply chain management practices rather than Sustainable Supplier Relationship Management specifically. Similarly, Akbar and Aslam (2023) concentrated on supplier capabilities, sustainability, and flexibility instead of holistic supplier relationship management. Therefore, limited empirical evidence exists on the direct effect of Sustainable Supplier Relationship Management on Supply Chain Resilience across manufacturing firms as an integrated organizational strategy. The present study fills this contextual

gap by specifically examining how Sustainable Supplier Relationship Management practices influence Supply Chain Resilience within manufacturing firms.

**Geographical Gap:** The reviewed studies were undertaken in diverse geographical settings, including Ghana (Dza, 2024), China (Zhang, 2022), and several developed and emerging economies represented in the studies by Bag (2021), Belhadi (2021), Shashi (2022), and Akbar and Aslam (2023). While these studies provide important international evidence, their findings may not be directly generalizable to other developing countries because institutional environments, supplier networks, technological capabilities, regulatory systems, and manufacturing practices differ significantly across countries. In particular, there remains a scarcity of empirical studies examining the relationship between Sustainable Supplier Relationship Management and Supply Chain Resilience among manufacturing firms in many Sub-Saharan African countries outside Ghana. This geographical limitation creates uncertainty regarding whether the reported relationships hold under different economic, institutional, and supply chain conditions. Therefore, the present study seeks to bridge this geographical gap by generating empirical evidence on the effect of sustainable supplier relationship management on supply chain resilience within manufacturing firms in the selected study area, thereby contributing context-specific knowledge to the literature.

## **CONCLUSION AND RECOMMENDATIONS**

### **Conclusions**

The reviewed literature demonstrates that Sustainable Supplier Relationship Management (SSRM) is a critical strategic practice that significantly enhances Supply Chain Resilience among manufacturing firms. Strong supplier relationships characterized by trust, collaboration, information sharing, supplier development, joint problem-solving, and sustainability initiatives enable firms to anticipate, withstand, respond to, and recover from supply chain disruptions more effectively. Empirical studies consistently show that organizations maintaining long-term, collaborative relationships with suppliers experience improved operational flexibility, enhanced supply chain visibility, better risk management, and greater business continuity during periods of uncertainty. However, the literature also indicates that the effectiveness of SSRM depends on organizational commitment, supplier engagement, technological integration, leadership support, and the existence of appropriate governance structures that foster mutual cooperation and sustainable business practices. Despite the growing body of research on supplier relationship management and supply chain resilience, significant conceptual, contextual, and geographical gaps remain, particularly regarding the multidimensional influence of Sustainable Supplier Relationship Management on Supply Chain Resilience within manufacturing firms operating in developing economies. Most previous studies have been undertaken in developed countries and have focused broadly on supplier collaboration or supply chain management rather than examining sustainable supplier relationship management as a comprehensive strategic capability. Consequently, there remains limited empirical evidence on how sustainable supplier relationship management practices enhance supply chain resilience among manufacturing firms operating under resource constraints, dynamic market conditions, and increasing sustainability demands. Addressing these gaps will enrich supply chain management theory while providing practical and policy insights that enable manufacturing firms to build resilient, sustainable, and competitive supply chains capable of withstanding future disruptions.

## **Recommendations**

### **Theory**

Future research should develop and validate comprehensive theoretical models that explain the relationship between Sustainable Supplier Relationship Management (SSRM) and Supply Chain Resilience among manufacturing firms. Researchers should conceptualize SSRM as a multidimensional construct comprising supplier collaboration, supplier development, supplier trust and commitment, information sharing, and joint sustainability initiatives to provide a holistic understanding of supplier relationship management. Future studies should integrate theories such as the Resource-Based View (RBV), Social Exchange Theory (SET), and Dynamic Capabilities Theory to explain how sustainable supplier relationships enhance firms' ability to anticipate, respond to, and recover from supply chain disruptions. In addition, longitudinal and cross-country studies should be undertaken to examine how sustainable supplier relationships influence supply chain resilience over time and across different manufacturing environments.

### **Practice**

Manufacturing firms should establish long-term strategic partnerships with suppliers based on trust, collaboration, transparency, and shared sustainability objectives. Organizations should invest in supplier development programs, supplier performance evaluation systems, joint innovation initiatives, and real-time information-sharing platforms to strengthen collaboration across the supply chain. Manufacturing firms should also integrate environmental, social, and governance (ESG) considerations into supplier selection, monitoring, and relationship management to promote sustainable procurement practices. Furthermore, firms should enhance digital collaboration by adopting supply chain technologies such as supplier relationship management systems, cloud-based platforms, and predictive analytics to improve visibility, responsiveness, and resilience against supply chain disruptions.

### **Policy**

Governments and regulatory agencies should formulate policies that encourage sustainable supplier relationship management practices across the manufacturing sector. Public institutions should develop regulatory frameworks and incentive programs that promote responsible sourcing, supplier sustainability, ethical procurement, and environmental stewardship throughout supply chains. National standards should encourage manufacturing firms to adopt supplier development initiatives, supply chain transparency mechanisms, and collaborative risk management practices. Policymakers should also support investments in digital infrastructure, supplier capacity building, and sustainability certification programs to strengthen resilient and sustainable manufacturing supply chains.



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