International Journal of Physical Distribution & Logistics Management

47

How firm level responsiveness influences supply chain network resilience

Jacob Jensen, Dustin Cole, Anthony S. Roath, Robert Glenn Richey Jr and LaDonna Thornton

Department of Supply Chain Management, Harbert College of Business, Auburn University, Auburn, Alabama, USA

Received 9 July 2024
Revised 6 March 2025
21 June 2025
31 August 2025
Accepted 18 October 2025

Abstract

Purpose – Increasingly turbulent global markets coupled with the complexity of supply chain (SC) network operations have intensified the frequency and consequences of disruptions. An increased awareness of SC network disruption vulnerabilities and the complexity of responding to them has prompted a need to revisit how firms adjust their risk management toward tools and capabilities that develop more resilient SC networks.

Design/methodology/approach – Through a systematic literature review of 124 peer-reviewed articles focusing on SC resilience within SC networks, we explore how network-embedded responsiveness activities and environmental factors shape resilience across SC networks.

Findings – Our analysis reveals that activities such as process and structure adjustments at the firm level are foundational tools that influence resilience. Relationships play a key role in these activities that facilitate collaboration and the dissemination of best practices across firms. This contributes to a more responsive and resilient SC network.

Practical implications – The study contributes to the SC network literature and practice by illustrating how a combination of firm-level responsiveness adjustments fosters resilience at the network level. Furthermore, it offers managerial insights, helping to clarify the role managers play in developing key relationships with other stakeholders and designing systems that enable SC networks to persist, adapt and transform.

Originality/value – The findings motivate a novel conceptual framework and three propositions that shed light on how individual firm responsiveness activities influence network resilience through the dissemination of information and practices across the network.

Keywords Adaptability, Agility, Disruption, Flexibility, Learning, Resilience, Responsiveness view, Supply chain networks

Paper type Research article

1. Introduction

Supply chains (SC) operate in an increasingly volatile and unpredictable environment due to pervasive challenges such as economic uncertainty (Fan *et al.*, 2022), geopolitical conflicts (Ngoc *et al.*, 2022), human error (Wieland *et al.*, 2023), and natural disasters (Sodhi and Tang, 2014). This complex environment has led to frequent SC disruptions and an awareness of the challenges created when flows are impeded (Galeano and McSwigan, 2022). To date, SC network research has overemphasized firm-level vulnerabilities (Ivanov, 2020; Li *et al.*, 2021) and de-emphasized the adjustments made to address network-level disruptions (Bae *et al.*, 2023). In recent years, firms have expanded their focus on resilience beyond internal operations to also encompass their SC network (Alicke *et al.*, 2024). The shift toward addressing *SC network resilience* alongside *firm-level resilience* underscores the need for

© Jacob Jensen, Dustin Cole, Anthony S. Roath, Robert Glenn Richey Jr and LaDonna Thornton. Published by Emerald Publishing Limited. This article is published under the Creative Commons Attribution (CC BY 4.0) licence. Anyone may reproduce, distribute, translate and create derivative works of this article (for both commercial and non-commercial purposes), subject to full attribution to the original publication and authors. The full terms of this licence may be seen at Link to the terms of the CC BY 4.0 licence.

International Journal of Physical Distribution & Logistics Management
Vol. 56 No. 11, 2026
pp. 47-69
Emerald Publishing Limited
e-ISSN: 1758-664X
p-ISSN: 0960-0035
DOI 10.1108/IJPDLM-07-2024-0264

Downloaded from ftp.nowpublishers.com/ijpdlm/article-pdf/56/11/47/11140227/ijpdlm-07-2024-0264en.pdf by guest on 03 October 2026

additional research. We contend that it is vital to understand how individual firms' resilience-creating activities fortify the SC against disruptions.

SCs are complex and changeable systems that benefit from firm-level adjustment capabilities, which enhance SC network resilience (Novak *et al*., 2021). Firms capable of adjusting to disruptions and sustaining their operations manage SC complexity more effectively (Richey *et al*., 2022). Yet, understanding SC resilience requires investigating firm characteristics across the network (Wieland and Durach, 2021). Specifically, we explore the relational nature of SC resilience, where resilience develops through the collaborative responses of network partners (Ambulkar *et al*., 2015). This evolution of SC resilience provides an opportunity to integrate SC responsiveness, resilience, and network literature by exploring how firms contribute to SC network resilience and responsiveness.

The Responsiveness View of logistics and SC management argues that firms adjust both operational and strategic capabilities in response to environmental and organizational complexity by utilizing adaptable, flexible, agile, and improvisational capabilities (Richey *et al*., 2022). Such individual firm responsiveness is a precursor to SC resilience as those strategies spread across the network (Morgan *et al*., 2023). SC network theory supports the Responsiveness View by clarifying how the system's structures and characteristics shape resilience (Wieland and Durach, 2021). Firm level responsiveness capabilities thus enable SCs to persist, change, adapt, and transform in response to a dynamic environment. This phenomenon motivates the following research question (RQ):

RQ1. How do firms responsiveness activities build resilience across a SC network?

To answer this, we conducted an extensive literature review of SC network and SC resilience articles in leading peer-reviewed SC journals to develop a conceptual model and propositions that outline how firms and SC networks influence resilience across the network. One of the main contentions is that resilience across the SC network is a product of information propagating throughout the network as individual firms adjust (Munir *et al*., 2022). The relationships between firms across the SC network facilitate the dissemination of knowledge about successful and unsuccessful adjustments. Through adjustments in response to and preparation for disruptions, the system becomes more resilient as best practices spread across SC network partners and disseminate to individual firms.

This study extends the Responsiveness View by identifying how firms' responsiveness activities (i.e., adjustment capabilities) instill resilience in their SCs, enabling them to address changes that potentially disrupt operations. This responsiveness-resilience relationship highlights how resilience goes beyond "bouncing back" and instead is shaped by an evolutionary process driven by firms' adjustments to their SC processes and structures. The study also clarifies how firms' relationships within and across SC networks shape how they develop and influence resilience across the network. Consequently, firms should balance perceptions of strategic and operational complexity with the resilience capabilities their network possesses.

2. Theoretical background

When disruptions occur, the impact is described as a contagion (McFarland *et al*., 2008) or ripple effect (Dolgui and Ivanov, 2021) which spreads across a SC network. The concept of SC resilience is a product of explaining how inventory movement and service flow is maintained across the SC network despite increasing complexity (Sheffi and Rice, 2005) through both proactive and reactive strategies (Ponomarov and Holcomb, 2009; Tan *et al*., 2019). This conceptualization has evolved over time. We draw from Wieland and Durach (2021)'s more recent definition of SC resilience:

> Supply chain resilience is the capacity of a supply chain to persist, adapt, or transform in the face of change (p. 316).

Downloaded from ftp.nowpublishers.com/ijpdlm/article-pdf/56/11/47/11140227/ijpdlm-07-2024-0264en.pdf by guest on 03 October 2026

Persistence refers to the ability to maintain flow by absorbing and withstanding the shock created by a disruption or, if disrupted, having the ability to quickly restore flow and return conditions to a pre-disruption state (Wieland *et al*., 2023). *Adapt* describes firms' adjustments and alterations to SC structure to restore flow and enable the transition to an improved state (Richey *et al*., 2022). *Transformation* refers to SC structures, processes, and relations as the SC ideally evolves into an improved state post-disruption (Wieland *et al*., 2023; Wieland and Durach, 2021).

Responsiveness expands these concepts to describe a firm's ability to act quickly based on knowledge generated in the face of change. Responsiveness is fundamental in managing both anticipated and unforeseen disruptions. When SCs are responsive, they are better positioned to adjust to complexity early, adapt operations in real time, and preserve swift and even flow — all of which directly contribute to resilience. In essence, responsiveness is an antecedent to resilience, enabling firms to recover and maintain performance in volatile environments (Nikookar and Yanadori, 2022b; Morgan *et al*., 2023).

As firms endure and recover from disruptions, they engage in both prospective and reflective learning that refines their ability to respond to future events (Fletcher *et al*., 2021). The organizational memory formed through resilience-building experiences becomes a foundation for more effective sensing, faster adjustments, and improved coordination across the network. Over time, learning informs responsiveness, creating an evolutionary cycle. Thus, responsiveness and resilience continuously inform and amplify one another in a dynamic loop. Improving resilience demands continuous strategic and operational adjustments where the firm and SC network partners work toward being responsive. SC resilience is thus an outcome and an antecedent within the Responsiveness View due to the cyclical nature of SC management reality. Richey *et al*. (2022) clarify that:

> Responsiveness is the process and outcome of organizational adjustments achieved as individual organizations within a supply chain alter behaviors, norms, and/or policies to help place a supply chain and its members in a favorable position to achieve customer value under dynamic environmental conditions (p. 63).

The Responsiveness View asserts that structure, policy, and process-based adjustments can increase adaptability, flexibility, and agility capabilities not only within individual firms but also across the SC network to achieve resilience (Morgan *et al*., 2023). Preparing for and reacting to change is inherent in this view (Goldsby *et al*., 2024). It requires firm interconnectivity that extends beyond immediate SC partners to include all organizations the focal firm depends on to access scarce resources (Wiedmer and Griffis, 2021). Relationships are thus an important aspect of adjustments to improve resilience as they facilitate collaboration, communication, and information sharing among SC members (Munir *et al*., 2022).

This is where SC network theory becomes a critical component of SC resilience. The central tenets of SC network theory are that SCs are complex, adjustable networks (Choi *et al*., 2001) of connections that collectively impact overall SC performance (Wieland and Durach, 2021). Incorporating SC network theory with responsiveness and resilience clarifies how relationships allow organizations to influence each other's capabilities, enhancing their ability to address disruption risk (Ambulkar *et al*., 2015). The individual capabilities (Zouari *et al*., 2020) and collective adaptation (Feizabadi *et al*., 2021) in response to environmental vulnerabilities are termed SC network resilience (Li *et al*., 2021; Münch and Hartmann, 2022). SC network resilience involves examining the structures of SC networks to determine how SCs remain responsive (Wiedmer and Griffis, 2021). Therefore, we review SC network resilience literature to understand how an organization's SC responsiveness activities influence SC network resilience.

Downloaded from ftp.nowpublishers.com/ijpdlm/article-pdf/56/11/47/11140227/ijpdlm-07-2024-0264en.pdf by guest on 03 October 2026

3. Methodology

We address our research question through a systematic literature review that focuses on SC network resilience guided by the Responsiveness View. Our review gathers input from prior literature through consistent and repeatable steps (Durach *et al*., 2017) that infuse transparency to strengthen validity (Ketchen and Craighead, 2023). To accomplish this, we followed the eight-phase process employed by Cole *et al*. (2025) that expands upon prior literature review methods to provide a comprehensive search and review process. Figure 1 provides an overview of these literature review steps adapted from Cole *et al*. (2025). Where relevant, the number of articles in the literature review is listed in brackets. The first number is the articles returned in the initial search. The second number is from the backward and forward search discussed later.

In *Phase 1*, formulation of the problem, we clarify the purpose of the study by defining our research question: *How do firms' responsiveness activities build resilience across a SC network?* For *Phase 2*, we developed a research protocol. The keywords "Supply Chain Resilience," "Supply Chain Network," and "Risk" were used in conjunction to identify relevant literature [1], as these keywords covered the concepts of our research question. A second search was done that replaced "Supply Chain Network" with "Logistics Network" given the interchangeable nature of those terms. The terms were searched in tandem to ensure the literature includes a discussion on SC resilience with a SC network orientation, as past work on SC resilience has often focused on individual firms, thus lacking nuance around the multi-tier SC network context (Ambulkar *et al*., 2015). We did not use less restrictive keywords (i.e., Resilience and Network) because those words are commonly used in unrelated literature. Less restrictive searches generated thousands of irrelevant results, such as resilience contextualized as a human mental state, a computer network, or an electrical grid. Our more restrictive keywords restricted the returned literature to papers that at least covered topics of interest but still yielded over six hundred studies during the initial search. Using these more restrictive keywords is in line with Cole *et al*. (2025), who similarly did not use individual terms because they were commonly found in unrelated literature.

Journal list selection began with those used by Cole *et al*. (2025). Three journals from that list were removed as they were specifically related to sustainability, the focus of Cole *et al*. (2025), but do not fit within the scope of this review. The journal list from Cole *et al*. (2025) was augmented with four additional journals. First, the *Journal of Business Logistics* was added to align with best practices of including the entire SCM List of journals (Ketchen and Craighead, 2023). Additionally, given the central role of logistics management in addressing disruptions, we further add three leading logistics journals (indicated with an asterisk in Table 1) which have been included in other recent SC-focused systematic literature reviews (Ali and Gölgeci, 2019). The list of journals and number of articles found and kept from each source after both the initial search and backward/forward search, discussed below, is found in Table 1. To avoid an arbitrary timeframe since there is no logical cut-off as to the earliest date to

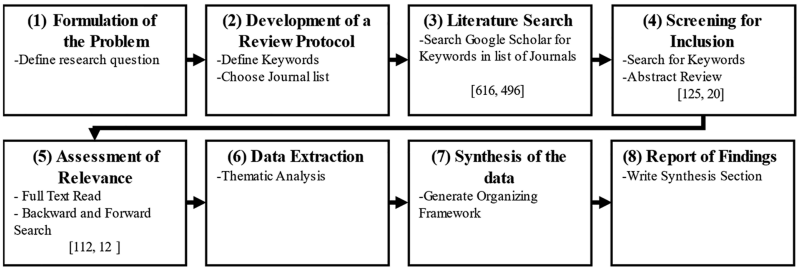

Figure 1. Literature review steps

Downloaded from ftp.nowpublishers.com/ijpdlm/article-pdf/56/11/47/11140227/ijpdlm-07-2024-0264en.pdf by guest on 03 October 2026

Table 1. Journal list and summary statistics of articles retained at each stage

Journal	Initial search	Abstract and keyword retained	Final text retain
Academy of Management Journal	4	0	0
Administrative Science Quarterly	2	0	0
Decision Sciences Journal	15	4	4
European Journal of Operations Research	18	1	1
IEEE Transactions on Engineering Management	25	3	2
*International Journal of Logistics Management**	91	12	9
International Journal of Operations and Production Management	61	10	10
*International Journal of Physical Distribution and Logistics Management**	62	7	7
International Journal of Production Economics	122	21	20
International Journal of Production Research	315	39	29
*Journal of Business Logistics**	30	2	1
Journal of Business Research	29	3	3
Journal of Operations Management	29	5	5
Journal of Purchasing and Supply Management	17	6	5
Journal of Supply Chain Management	13	2	2
Management Science	36	1	1
Manufacturing and Service Operations Management	6	0	0
Operations Research	11	1	1
Production and Operations Management Journal	25	1	1
Strategic Management Journal	2	0	0
Supply Chain Management: An International Journal	109	18	15
*Transportation Part E: Logistics and Transportation Review**	90	9	8
Total Retained	1,112	145	124

search (Ketchen and Craighead, 2023), the literature review covers digitally available articles from the listed journals from their inception to July 2023, when the search was performed. Figure 2 provides the count of articles retained after full-text reading, column (c) in Table 1, by year.

In *Phase 3*, the actual search was performed using Google Scholar following the procedure in Cole *et al*. (2025). After removing duplicates, 616 articles were returned in the initial search. To align with best practices which require two sources be searched (Carter *et al*., 2024), Scopus was used to perform an identical search. No new articles were returned in this second search. *Phase 4*, screening for inclusion, was accomplished with the same two-step approach as Cole *et al*. (2025). First, each article was searched for inclusion of the keywords: "network", "risk", and "resilience". If the keywords only appeared outside the body of the text, such as the reference section, the article was excluded. Second, abstracts were reviewed for studies emphasizing SC resilience in an SC network or multi-firm context. Papers that did not discuss these topics were excluded. Following these steps, 125 articles remained.

Phase 5 was to assess the relevance of each article. The full text of all remaining articles was fully read to assess study fit. To be comprehensive, articles were retained if they offered insights into resilience within SC networks, even if only a smaller portion of the article provided such insight. Thirteen articles that did not provide insights into the topic were removed. An additional step within the fifth phase is to perform a backward and forward search on "landmark" papers within the topic. Following the guidance of Cole *et al*. (2025), "landmark" papers were defined as the top 10% of papers, rounding up, in terms of citations per year at the time of the search. This would equate to 12 papers based on the 112 articles

Downloaded from ftp.nowpublishers.com/ijpdlm/article-pdf/56/11/47/11140227/ijpdlm-07-2024-0264en.pdf by guest on 03 October 2026

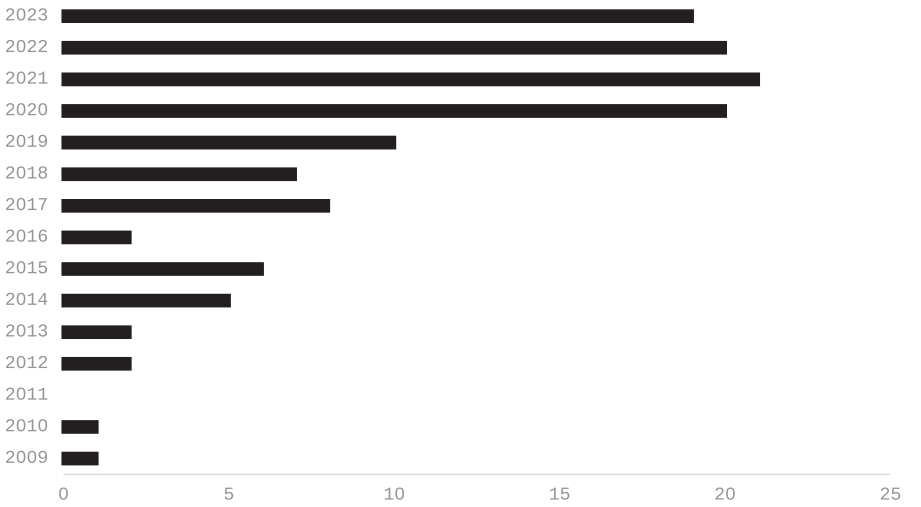

Figure 2. Journal article accounting by year

deemed relevant. Since this number was lower than the 14 papers used for the backward and forward search by Cole *et al*. (2025), we chose to do the backward and forward search for the 14 papers [2]. See queries with the highest number of citations per year at the time of the search to ensure adherence and comprehensiveness.

The backward and forward search entailed creating a list of all the papers cited in those fourteen papers, as well as all papers that cited them per Google Scholar. After duplicate papers, papers in journals outside our search list, and papers reviewed from the original search were removed, the backward and forward search yielded an additional 496 papers. This brought us to a total of 1,112 articles screened for this literature review, as shown in column (a) of Table 1. For these 496 articles, we performed the same two-step process of searching for keywords in the article's main text and reading the abstract. 20 articles were retained after this stage, leading to a total of 145 articles that were fully read. The low ratio of kept articles in the backward and forward search can be attributed to this being a list of articles not returned in our initial search, meaning the articles were often not related to resilience or SC management. After reading the full text of these 20 articles, 12 were deemed relevant and retained, leading to a final list of 124 articles for this literature review, as noted in column (c) of Table 1.

Phase 6 of this process is data extraction. During the extraction phase, we collected data from the articles through an iterative process. This was done with thematic analysis, which has been employed within SC research for theory development of under-researched and emerging topics (Arunachalam *et al*., 2018; Fawcett *et al*., 2014). Braun and Clarke (2006) stated that "*thematic analysis is a method for identifying, analyzing, and reporting patterns or themes in data*" (p. 79). Methodical rigor and validity of this process involves the following steps: A) data familiarization, B) developing codes that evolve and change as the research team immerses in the literature, C) identifying themes, D) refining the themes, E) tracking the process, and F) generating a report (Byrne, 2021). Steps E and F will appear in Phases 7 and 8 of the literature review methods, respectively.

Steps A and B of the thematic analysis involve the research team familiarizing itself with the literature and coding sections of the text. The team applied a reflexive process in which codes were initially identified and evolved as the literature was iteratively reviewed (Braun *et al*., 2013). Wieland and Durach (2021)'s definition of SC resilience, the Responsiveness View, and SC network theory provided the framework for categorizing the codes into the initial codes of structure, relation, and process. Additionally, each of these codes may occur at either

Downloaded from ftp.nowpublishers.com/ijpdlm/article-pdf/56/11/47/11140227/ijpdlm-07-2024-0264en.pdf by guest on 03 October 2026

the firm or SC network level. The Durach *et al*. (2017) approach led to a multi-stage, iterative discussion to solidify initial codes. A summary of the initial codes can be found in Table 2, with extended definitions in Section OS1 of the Online Supplement.

In step C, the research team analyzed the initial codes by meaning. The process consisted of re-reading the applicable literature sections to validate the interpretation of the data. The analysis identified 16 initial themes that help SC networks and organizations manage and recover from disruptions. In step D, the themes were reviewed and analyzed to generate overarching themes. This analysis process further grouped the initial codes to capture the collective meaning from the literature. See Table 3. Drawing on the framework provided by Durach *et al*. (2017), the research team identified six overarching themes. The overarching themes solidified the importance of SC networks in the adaptation to disruptions and the importance of collective adjustments to restore flow across the network.

Phase 7, synthesis of the data, was covered in this methods section of the paper to generate an organizing framework. Also occurring during this phase is step E of the thematic analysis, where the data analysis process is tracked and recorded. *Phase 8*, report the findings, and step F of the thematic analysis, generating the report, appears in the synthesis section.

3.1 Trustworthiness

Establishing interrater agreement of the themes involved multiple rounds of classification and comparison between the author team. In line with best practices, at least two reviewers were required for reviewing each article (Carter *et al*., 2024). First, two authors read each article fully, classifying it as firm or network and either structure, process, or relation. Of the 124 articles, there was an identical assessment for 79 (64%) articles during this stage. Second, a third author assessed all articles where there was any disagreement. If two of the three authors rated an article identically, that was agreed to as the consensus. Of the 45 articles reviewed during this phase, there was consensus on 44. Third, for the one article without a consensus, Baryannis *et al*. (2019a), the three authors discussed the article to form a consensus. Due to the repetition of concepts and the number of articles to summarize, not every paper deemed relevant is cited in the literature synthesis. However, a complete listing of the articles with appraisals and a summary of relevant concepts appears in Section OS2 of the Online Supplement.

Table 2. Literature initial code criteria

Code group	Code	Code definition
Initial codes 1	Firm (F)	Firm efforts to instigate SC resilience measures that minimize impact from disruption or quick recovery when SC disruption occurs
	Network (N)	Multiple firms' collective actions to develop SC resilience measures to address SC disruption
Initial codes 2	*At the Firm Level*	
	Process	Firm policies and procedures to improve SC resilience
	Structure	Firm planning of facilities and external connections to improve SC resilience
	Relationship to Network	Firm relationship management activities to improve SC resilience which connect to the broader network
	Across the Network	
	Process	The collective result of multiple firms' coordinated policy and procedure adjustments to improve SC resilience
	Structure	The collective result of multiple firms' SC design adjustments to improve SC resilience
	Relationship to Individual Firms	The collective result of multiple firms' relationship management activities to improve SC resilience which connect firms across the network

Downloaded from ftp.nowpublishers.com/ijpdlm/article-pdf/56/11/47/11140227/ijpdlm-07-2024-0264en.pdf by guest on 03 October 2026

Table 3. Supply chain network resilience development themes

Initial codes	Initial themes	Overarching themes
At the firm level		
Process	Preparing for contingencies Adopting new technologies Managing resources	Constructing Processes
Structure	Developing sourcing strategies Investing in facility infrastructure Developing structure-adjusting capabilities	Adapting Supply Chain Structures
Relationship to network	Enabling collaboration Managing social networks	Fostering Relations
Across the network		
Process	Mapping interfirm supply chain processes Standardizing management practices	Normalizing Standards
Structure	Maintaining structural variety Developing interoperability Using fortified facilities	Stabilizing Supply Chain Structures
Relationship to individual firms	Forming diversified relations Sharing resources Collaborating	Building Complementarities

4. Synthesis

4.1 Conceptual framework

Based on the findings of the literature review, described in detail in the next two sections, Figure 3 presents a novel conceptual framework that lists the significant concepts drawn from the literature and illustrates how firms' responsiveness activities influence resilience in SC networks. The framework shows how firms' influence permeates throughout SC networks and

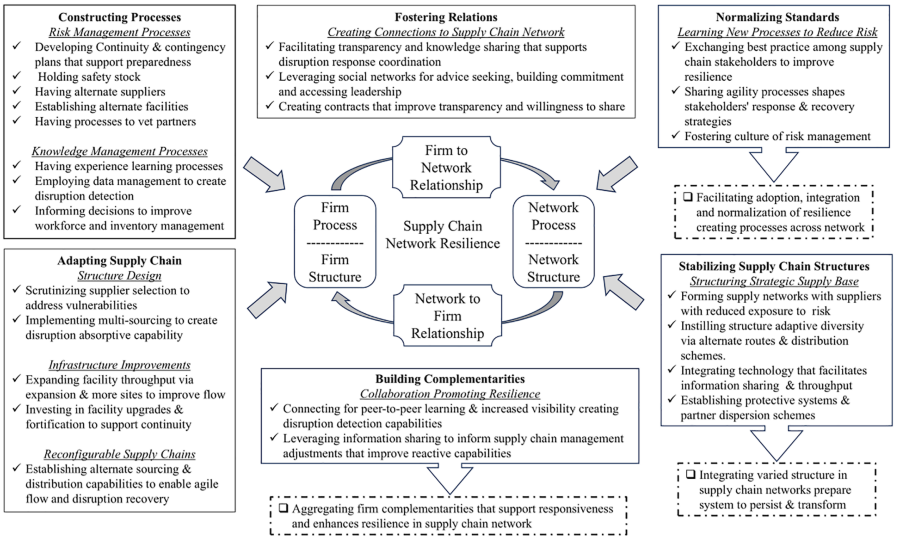

Figure 3. Supply chain network resilience framework

Downloaded from ftp.nowpublishers.com/ijpdlm/article-pdf/56/11/47/11140227/ijpdlm-07-2024-0264en.pdf by guest on 03 October 2026

how the network shapes and influences the types of activities firms adopt to improve or enhance their responsiveness. Responsiveness acts as a crucial building block for resilience, which encompasses a SC's capacity to recover from disruptions (Richey *et al*., 2022). This relationship is depicted as a feedback loop, offering insights into how a collective of firms' responsiveness activities create the ability for SC networks to persist, adapt, and transform. Finally, the figure lists the three propositions proposed in the following sections as untested concepts, highlighting the future direction for SC network resilience research.

4.2 Firm processes, structure, and firm to network relation

4.2.1 Constructing processes. Risk management processes facilitate assessment and inform the development of mitigation capabilities (Schmitt and Singh, 2012). These processes result in the creation of continuity and contingency plans that guide preparedness and recoverability (Adobor and McMullen, 2018; Zhao *et al*., 2023). These encompass proactive measures such as establishing alternate facilities (Brusset and Teller, 2017), holding safety stock (Tan *et al*., 2019), and maintaining alternate suppliers (Hosseini *et al*., 2022a). The plans also include procedures for reactive disruption recovery (Schmitt and Singh, 2012) and enabling coordinated operational adjustments or reconfiguration of resources to recover flow (Zhao *et al*., 2023).

Flow is improved by agility, which is a process-oriented capability that utilizes slack to scale resources, allowing shifts in operational requirements (Goldsby *et al*., 2006). Firms' development of agile processes stems from an understanding that quick adjustments enable reaction to change (Richey *et al*., 2022). Firms also develop processes to evaluate SC partners (Lee, 2017), monitor partners' capabilities to address disruption risk, and sustain SC flow (Bag *et al*., 2023) to ensure resiliency (Kähkönen *et al*., 2023).

Further, firms develop knowledge management processes to make sense of and learn from experiences (Fletcher *et al*., 2013). Knowledge motivates changes to improve firm fitness and enhances responsiveness (Adobor and McMullen, 2018), enabling disruption mitigation capabilities (Nikookar and Yanadori, 2022a). Similarly, firms leverage data management processes to create disruption-detecting capabilities (Kähkönen *et al*., 2023; Zouari *et al*., 2020). This improves the visibility of trends, such as changes in demand or supply which inform adjustments to inventory levels (Hosseini *et al*., 2022a; Zouari *et al*., 2020). Additionally, firms use flexible work policies and a multiskilled workforce to improve labor capacity (Tukamuhabwa *et al*., 2015). Further, inventory buffering (Schmitt and Singh, 2012) increases the ability to respond to possible disruptions (Lee, 2017). Other process changes include modifying transportation modes (Nikookar and Yanadori, 2022a; Ivanov, 2020), and altering products and service offerings (Ivanov and Dolgui, 2020).

4.2.2 Adapting supply chain structures. The Responsiveness View puts forth adaptability of SC structures as one of its major dimensions. SC structures are designed to support firms' exchanges with suppliers and customers (Hearnshaw and Wilson, 2013). Managers pursue different structural designs to address vulnerabilities (Hearnshaw and Wilson, 2013; Zhao *et al*., 2019). One such vulnerability is supplier dependency. Firms address this through supplier selection, sourcing volumes (Lee, 2017), and multi-sourcing strategies to mitigate disruptions (Nikookar and Yanadori, 2022a).

Firms also adapt SC structures through facility expansion and infrastructure improvements (Ghanei *et al*., 2023). Increasing warehousing space (Scala and Lindsay, 2021) and expanding facility locations (Brusset and Teller, 2017) improve throughput and provide network flexibility. Additionally, facility fortification (i.e., making the facility more durable) (Fattahi *et al*., 2017; Ghanei *et al*., 2023) and backup sites (Tan *et al*., 2019) enable preparedness. These provide extra capacity (Schmitt and Singh, 2012) and support continuity (Ponomarov and Holcomb, 2009).

However, structural adaptations depend on perceiving potential risks and being able to act on them. Firms may lack foresight (Spieske *et al*., 2022), knowledge of how to address

Downloaded from ftp.nowpublishers.com/ijpdlm/article-pdf/56/11/47/11140227/ijpdlm-07-2024-0264en.pdf by guest on 03 October 2026

disruption risk (Scholten *et al*., 2014), or sufficient resources to develop robust structures (Chopra *et al*., 2021). Firms may instead design their SC structure to focus on swift adjustments (Aldrighetti *et al*., 2021) and reconfigurability (Childerhouse *et al*., 2020) to speed recovery instead of resisting disruptions. Such adjustment capabilities are made possible through alternate routing strategies (Kähkönen *et al*., 2023), near or local sourcing (Spieske *et al*., 2022), and employing multi-channel distribution (Chopra *et al*., 2021). These adaptations and eventual transformations (Wieland *et al*., 2023) address disruptions and transition to a post-disruption state (Tan *et al*., 2019; Tukamuhabwa *et al*., 2015), but require balancing in-house and outsourced production (Nikookar and Yanadori, 2022a). If the systems fail to persist when confronted with further change, re-adaptation is required (Richey *et al*., 2011).

4.2.3 Fostering relations. Relationships between firms facilitate transparency (Münch and Hartmann, 2022), trust, cooperation, communication (Chowdhury *et al*., 2023), and align goals (Spieske *et al*., 2022). As relationships progress, they culminate in mutually beneficial collaboration (Kähkönen *et al*., 2023) and knowledge sharing (Zhao *et al*., 2023) that reduces disruption risk. To foster these mutually beneficial relationships, firms develop digital information-sharing capabilities (Zouari *et al*., 2020) and invest in information-sharing technologies (Kähkönen *et al*., 2023). Doing so enables transparency across SC members (Zhao *et al*., 2023), fosters collaboration, and motivates managers to build social capital by forming social ties across firm boundaries (Ponomarov and Holcomb, 2009). Relational ties foster commitment among stakeholders (Bag *et al*., 2023), provide access to leadership (Shin and Park, 2021), promote collaboration through institutions such as trade associations (Azadegan and Dooley, 2021), and offer pathways to seek advice.

Establishing contracts is another way that firms foster and govern relations. Contracts improve transparency, influencing the willingness of managers to share information (Yoon *et al*., 2020). Contracts also help establish risk management expectations, delineating the types of procedures to be followed to address disruption (Wu *et al*., 2023). Establishing these expectations helps to improve trust among SC partners, improving coordination and collaboration when disruption occurs (Datta, 2017). Additionally, social network expansion improves flexibility as more resources are made accessible through various relationships (Nikookar and Yanadori, 2022a). These relationships also provide firms with a connection to the network through which they can influence the responsiveness capabilities that other firms implement.

4.3 Network process, structure, and network-to-firm relations

From a SC network perspective, process normalization (i.e., firms adopting similar disruption mitigating practices) and structure variety (i.e., firms establishing and using alternative SC pathways) across SC network stakeholders work in tandem to infuse resilience in SC networks. This dichotomy of normalization and variety originates from the network's reliance on best practice standardization across firms and non-conforming structural diversity needed to find alternatives that can be implemented. While contradictory, the literature reveals that network resilience arises from firms leveraging relationships with other firms that have complementary responsiveness activities, balancing standard practices with structural variety to mitigate disruption risk.

4.3.1 Normalizing standards. Firms act independently to address their SC risk and protect their own interests (Ponomarov and Holcomb, 2009; Tan *et al*., 2019). Yet, they eventually face similar disruption risks (Lee, 2017) and their response depends on other organizations (Feizabadi *et al*., 2021). Disruption is thus mitigated across the SC network through an aggregation of adjustments across firms. These adjustments are facilitated through communication with other SC network members with whom the firm has a relationship (Hosseini *et al*., 2022a). Through these interactions, firms learn from one another about risk-reducing capabilities they can adopt. This facilitates the dissemination of disruption mitigation

Downloaded from ftp.nowpublishers.com/ijpdlm/article-pdf/56/11/47/11140227/ijpdlm-07-2024-0264en.pdf by guest on 03 October 2026

processes (Lee, 2017; Zouari *et al*., 2020). Thus, responsiveness is sustained by firms deliberately sourcing from organizations with agile process capabilities (Küffner *et al*., 2022; Scala and Lindsay, 2021).

Shared agile processes facilitate the development of risk-reducing and reactive capabilities (Fattahi *et al*., 2017). These capabilities are essential for informing strategies related to disruption response and resilience recovery (Schmitt and Singh, 2012). Agile processes depend on firms fostering a culture of risk management (Küffner *et al*., 2022; Spieske *et al*., 2022) to address disruption risk (Chen *et al*., 2022). Thus, firms in their respective SC networks are able to align responsiveness capabilities that address vulnerabilities (Lohmer *et al*., 2020) to improve resilience. Therefore, we propose:

P1. The resilience of SC networks to disruption risks is enhanced through transformation as more firms adopt, integrate, and normalize resilience-creating processes.

4.3.2 Stabilizing supply chain structures. When multiple firms across a network develop resilience by strategically structuring their supply base, it has a stabilizing effect by ensuring that each firm can effectively respond to disruptions (Alikhani *et al*., 2021). This comes from individual firms across the SC network choosing to connect with lower-risk suppliers (Li and Zobel, 2020), maintain backup suppliers (Chen *et al*., 2022), establish ties with geographically dispersed suppliers (Childerhouse *et al*., 2020), and multi-source (Scala and Lindsay, 2021). Resilience across the SC network is also strengthened through structurally adaptive diversity, such as a variety of shipping routes (Wieland *et al*., 2023) and distribution schemes (Chopra *et al*., 2021). This diversity causes SC networks to grow in complexity with increasing touchpoints for firms to manage (Dixit *et al*., 2020) but also helps improve the options they have available to address disruptions.

Stability across SC networks is further improved through structures that enable interoperability through technologies that facilitate information sharing (Dev *et al*., 2021) and designing structures that enable the throughput of resources (Chopra *et al*., 2021). At the network level, interoperable structures improve connectivity across SCs, improve efficiency due to better flow, and facilitate communication (Dixit *et al*., 2020). Dispersion and disruption-persisting facilities also strengthen the structural stability of the SC network. Firms enable these capabilities by constructing facilities in less risk-prone areas, maintaining a geographically dispersed supply base (Fattahi *et al*., 2020), fortifying facilities, and establishing protection systems such as fire suppression systems (Aldrighetti *et al*., 2021; Childerhouse *et al*., 2020). Partner dispersion schemes also increase distance across a SC network, potentially making the system more robust against localized threats (Aldrighetti *et al*., 2021).

Structural variety is another avenue to improve adaptability across SC networks. Alternate supply sources (Yue *et al*., 2023) and distribution channels (Spieske *et al*., 2022) across the network enable disruption reactiveness (Gholami-Zanjani *et al*., 2021). This permits firms to meet supply requirements quickly (Dixit *et al*., 2020), modify distribution channels (Spieske *et al*., 2022), and access additional supplier capacity (Alikhani *et al*., 2021). Consequently, structural variety adds contingency capacity to restore flow when primary channels cannot meet requirements. Thus, structural variety enables SC network-responsive capabilities. Therefore, we propose:

P2. The integration of firms' varied structures across SC networks creates stability that maintains responsiveness while preparing the system to persist, adapt, and transform.

4.3.3 Building complementarities. Just as relationships at the firm level facilitate the dissemination of practices across the SC network, those practices flow back to the individual firms. Collaboration (Kamalahmadi and Parast, 2016) and resource dependency motivate firms to work together (Li and Zobel, 2020; Scholten and Schilder, 2015), connecting the network back to individual firms. This can occur horizontally between firms that provide similar services or products. This provides visibility of peer organizations, benchmarking

Downloaded from ftp.nowpublishers.com/ijpdlm/article-pdf/56/11/47/11140227/ijpdlm-07-2024-0264en.pdf by guest on 03 October 2026

opportunities, and peer-to-peer learning (Durach *et al*., 2020; Massari and Giannoccaro, 2021). It can also occur vertically, in which firms connect with others upstream and downstream across the SC. Vertical relationships create a bridge among suppliers, producers, and distributors (Ghanei *et al*., 2023). This enables disruption detection (Durach *et al*., 2020) and transparency (Bag *et al*., 2023) while harnessing complementarities among firms (Münch and Hartmann, 2022). These connections to improve SC resilience then facilitate the diffusion of best practices across firms (Massari and Giannoccaro, 2021).

SC relationships also inform decisions on quick adjustments (Aldrighetti *et al*., 2021) or balancing inventory levels (Ghanei *et al*., 2023) that improve response time (Kamalahmadi and Parast, 2016). This enables anticipatory (Durach *et al*., 2020) and reactive (Durach *et al*., 2020; Ghanei *et al*., 2023) capabilities that can help with disruption recovery. Finally, relationships uncover complementarities across the SC network through interfirm collaboration. Collaboration is based on interfirm trust (Giannoccaro and Iftikhar, 2022), dependency (Durach *et al*., 2020), cooperation (Durach *et al*., 2020; Ghanei *et al*., 2023), common ground (Ghanei *et al*., 2023; Scholten and Schilder, 2015), relationship longevity (Li *et al*., 2020), and shared risk (Kamalahmadi and Parast, 2016). These attributes bring firms together to address challenges across boundaries and build on one another's strengths and abilities (Adobor and McMullen, 2018). Therefore, we propose:

P3. An aggregate of firms' complementarities that support responsiveness enables disruption risk mitigation, dispersion of these practices, and facilitates the transformation of the SC into a more resilient network.

5. Theory guided research opportunities

The time is ripe for new research on the interplay between responsiveness and resiliency across SC networks. The three propositions offered by this research provide avenues for scholars to advance research on the responsiveness-resilience link in SC network settings. Opportunities in this space are not only abundant but increasingly vital as internal and external uncertainties intertwine to increase complexity. For example, vulnerabilities emerge at different levels of the SC network, which may produce different approaches to utilizing responsiveness adjustment mechanisms that could produce variations in resilience outcomes (Carnovale *et al*., 2025). Network theory may offer a foundation for understanding this phenomenon, as partners in the network may interpret uncertainties differently and apply different adjustment mechanisms. The absence of coordination among partners (consciously or not) may lead to ineffective resilience strategies. This layered exposure provides rich ground for empirical and theoretical development.

An interesting aspect of interorganizational learning is the idea of knowledge transfer. While learning helps firms develop and share insights to create strategies, knowledge transfer may also unintentionally erode competitive advantages as best practices are transferred to competing firms (Zhu *et al*., 2018). This ultimately affects responsiveness capabilities and, in turn, worsens resilience. Organizational learning theory could be applicable in this area. Wieland and Wallenburg (2013)'s findings from a relational view lens suggest that firm integration does not influence resilience. However, the addition and application of responsiveness capabilities that address vulnerabilities may provide more insight (Guntuka *et al*., 2024a). Moreover, resource dependency theory could also help to explain the nuance associated with relationships in the SC network and how the firms utilize their interdependent resources collectively. Table 4 offers research questions to help scholars push important conversations forward.

5.1 Responsiveness-resilience methodological opportunities

Research on responsiveness-resilience interplay could also be advanced through various contexts and methodological approaches. The rise of emerging technologies is an important

Downloaded from ftp.nowpublishers.com/ijpdlm/article-pdf/56/11/47/11140227/ijpdlm-07-2024-0264en.pdf by guest on 03 October 2026

Table 4. Suggested future research questions

Proposition	Gap	Research question	Theory	Method
Proposition 1: The resilience of SC networks to disruption risks is enhanced through transformation as more firms adopt, integrate, and normalize resilience-creating processes	Emerging Technology adoption and process creation	How may managerial biases in interpreting AI-generated inputs impact firm responsiveness and network resilience?	Dynamic Capabilities Theory Network Theory Complexity Theory	Delphi Study
		What impact has firm-level adoption of emerging technology (i.e., machine learning and predictive analytics) had on propagating resilience throughout supply chain networks?	Resource-Dependency Theory	Survey
	Firm improvisation and network resilience	How does firm-level supply chain improvisation affect overall network responsiveness prior to the need for broader supply chain adaptation?		Experiment
Proposition 2: The integration of firms' varied structures across SC networks creates stability that maintains responsiveness while preparing the system to persist, adapt, and transform	Responsiveness element that has the greatest impact on network resilience	How does process standardization in a supply chain network affect the adoption rate of supply chain visibility technologies?	Responsiveness View Organizational Learning Theory Network Theory	Longitudinal Study (Quasi-Experiment)
		How does structure hardening in supply chain networks affect the time firms require to recover from disruptions?		
		What are the effects of firm supplier selection and sourcing strategy on network persistence capability, response, and recovery?		Case Study
Proposition 3: An aggregate of firms' complementarities that support responsiveness enables disruption risk mitigation, dispersion of these practices, and facilitates the transformation of the SC into a more resilient network	Government policy change and responsiveness activities	How do firm complementarities support network resilience across multinational supply networks?	Relational View Resource-Dependency Theory Complexity Theory	Case Study
		How does interfirm resource-sharing in a supply chain network affect overall resource munificence?		Simulation
	Tiered data transparency and resilience building feedback loop	To what degree are the relationships among firms in a supply chain network associated with the structures and processes those firms develop?	Mid-range Theorizing Network Theory	Exploratory Interviews

Downloaded from ftp.nowpublishers.com/ijpdlm/article-pdf/56/11/47/11140227/ijpdlm-07-2024-0264en.pdf by guest on 03 October 2026

area of examination (Rainer *et al*., 2025). Today, more than ever, we need research that uncovers how firms sense, interpret, and act on network information, including the use of technologies in real-time, particularly during disruptions (Jiang *et al*., 2025). Tools like machine learning and predictive AI have reshaped how firms build and scale responsiveness capabilities. Generative AI may bring even more expansive knowledge-based support to SC networks (Modgil *et al*., 2022; Ivanov *et al*., 2021). AI tools can align with the dimensions of the Responsiveness View—adaptability, flexibility, agility, and improvisation—supporting firm-level best practices that impact all levels of the network (Condé and Münch, 2025). We also need a deeper inquiry into how cognitive and behavioral boundaries influence technologically augmented decision-making and what that means for downstream resilience. Equally important is the human side of decision-making. AI can offer faster, data-driven insights, but it does not eliminate the role of managerial judgment (Dai *et al*., 2025). In fact, human biases in interpreting AI-generated outputs may distort and disrupt network-level outcomes. Surveys and experiments have the potential to unlock causality related to this. However, a Delphi study could prove highly valuable in providing a deeper understanding based on experts' perspectives on the critical role of managerial decision-making and the tools (e.g., responsiveness mechanisms) used to achieve resilience under SC uncertainties and disruptions (internal and external influences).

Government policy also deserves more attention as a moderating force. Regulatory mechanisms like tariffs or trade restrictions can either enable or restrict responsiveness. We do not fully understand how these economic levers impact adaptive actions or alter the resilience landscape. In global SCs, the complexity introduced by inconsistent international regulations adds another layer. Studying regulatory heterogeneity as a dynamic moderator could open new pathways for theory and practice. A longitudinal study (i.e., quasi-experiment) could prove useful in understanding the effect these regulatory mechanisms have on SCs and the effectiveness of various kinds of responsiveness measures on assuring SC resilience.

Additionally, transparency and knowledge are essential to responsiveness (Morgan *et al*., 2023). The complexity of internal and external uncertainties highlights the importance of data visibility and the need for transparency across organizational levels. Clear communication upstream and downstream facilitates learning loops that enable coordinated awareness and timely reactions. We urgently need research exploring how network transparency supports feedback mechanisms and enhances network-level adaptability, especially in light of advancing technology. Research in this area could be advanced through case study research augmented by expert interviews and simulation targeting assessment of the interrelationships across SC partner levels. The idea would be to observe and evaluate how interactions within these areas shape and influence the transformation of SC resilience capability that originates at the firm level, transmits to the network, and finally disperses back to the firm level.

6. Conclusion

The framework outlined throughout this research demonstrates how firm-level responsiveness efforts influence SC network resilience. Rather than assuming that SCs revert to a pre-disruption state, the approach aligns with an iterative view of resilience that is enabled by responsiveness' adjustment capabilities (Richey *et al*., 2022). Each incremental improvement reinforces a firm's ability to adjust to its environment, which can then spread across the network to other firms through the relationships between them (Guntuka *et al*., 2024b). This adds network nuance to the conceptualizations of SC resilience and responsiveness where the network itself influences how individual firms detect threats, mobilize resources, and coordinate responses. This interplay between the firm and the network offers promising avenues for research into how the dimensions of responsiveness produce varied outcomes (Carnovale *et al*., 2025). Managers can look beyond simply "bouncing back" and instead view resilience as an ongoing evolution, driven by knowledge-sharing platforms, small-scale policy adjustment, and trust-building measures. For example, our review of the literature identifies a

Downloaded from ftp.nowpublishers.com/ijpdlm/article-pdf/56/11/47/11140227/ijpdlm-07-2024-0264en.pdf by guest on 03 October 2026

more definitive link between responsiveness and resilience within the network, deepening our understanding of how the complexity of resilience facilitates SCs transitioning from bouncing back to adapting and transforming. This link adds to a growing body of literature that highlights a potential curvilinear relationship between complexity and the temporal dimensions of resilience (i.e., persistence and transformation), given the growing need for interorganizational interaction (Guntuka *et al*., 2024b; Carnovale *et al*., 2025). Finally, responsiveness reflects both network and firm capabilities, which can serve as adjustment mechanisms in the face of disruptions.

Establishing this link between responsiveness and resilience also contributes to the growing scholarship on transilience—a concept that explores how firms address major disruptions by partially restoring some SC processes and structures while transforming others to adapt to rapid and profound environmental changes (Gatenholm and Halldorsson, 2023; Craighead *et al*., 2020). Research in this area remains nascent, with scholars calling for further exploration (Craighead *et al*., 2020; Saisridhar *et al*., 2024). Our framework advances this discussion by clarifying how the evolution of responsiveness activities and knowledge sharing among firms facilitates the type of transformation described.

Further, our framework advances mainstream resilience scholarship (Ponomarov and Holcomb, 2009; Wieland and Durach, 2021) by clarifying how different capabilities can be leveraged to emphasize policy, process, or adaptive adjustments to improve persistence, adaptation, and transformation. The responsiveness-resilience relationship also implies that resilience is not only an outcome of effective response to disruptions, but resilience is also embedded in the considerations for responsiveness capabilities (Masorgo *et al*., 2024). For example, utilizing flexibility through policy adjustments such as inventory pooling or managing contractual configurations within the network are tools that can be foundations to develop risk mitigation strategies that address disruption uncertainties.

Managers may further leverage the findings by focusing on how firm responsiveness capabilities and external network relationships combine to bolster SC resilience. For instance, managers may leverage local risk management planning and networked knowledge-sharing processes that guide contingency planning and also enhance overall responsiveness (Friday *et al*., 2024). Fostering strong interfirm relationships through information sharing, contractual agreements, and communication enables coordinated responses and collaborative learning across the network (Budler *et al*., 2023). Adopting multi-sourcing network strategies and investing in infrastructure improvements may also mitigate vulnerabilities present in single-sourcing approaches (Carnovale *et al*., 2025). Overall, our insights empower managers to think strategically about their organizations' positions within networks, their implications, and the roles they play in designing systems that withstand disruptions while responding to evolving challenges and opportunities.

Finally, there are limitations to this study. First, it is limited to what is published in academic articles. There is still much to be explored and understood about responsiveness and the influence it has on resilience within SC networks. Thus, this study offers many opportunities for researchers to continue advancing knowledge on this important topic. Additionally, academic literature lags industry practices, impairing the ability to capture the most recent industry activities. Advances in technology and changes to the latest SC processes outpace the rate at which scholars are able to assess and document these changes. Therefore, continued research is needed to address the gaps these changes create. Finally, academic literature tends to predominantly focus on larger corporations operating in more economically developed countries. The strategies put forth in the literature may not be applicable to smaller organizations in developing regions. Studies that target smaller organizations and less developed regions of the world can further enhance our understanding of responsiveness and resilience relationships, as these may represent untapped data sources further capturing SC network complexities.

Downloaded from ftp.nowpublishers.com/ijpdlm/article-pdf/56/11/47/11140227/ijpdlm-07-2024-0264en.pdf by guest on 03 October 2026

Notes

1. The search performed in google scholar was: "supply chain resilience" AND "supply chain network" AND "risk" source: "*Name of Journal*". For logistics network, "logistics network" was used in place of "supply chain network".
2. The 14 papers were: Juan *et al.* (2022), Ponomarov and Holcomb (2009), Hohenstein *et al.* (2015), Kamalahmadi and Parast (2016), Ivanov *et al.* (2014), Ivanov *et al.* (2017), Ivanov and Dolgui (2019), Baryannis *et al.* (2019b), Baryannis *et al.* (2019a), Ivanov and Dolgui (2020), Singh *et al.* (2020), Sharma *et al.* (2020), Cui *et al.* (2010), Scholten and Schilder (2015), and Hosseini *et al.* (2022b), Hosseini *et al.* (2022a).

Supplementary material

The supplementary material for this article can be found online.

References

Adobor, H. and McMullen, R.S. (2018), "Supply chain resilience: a dynamic and multidimensional approach", *The International Journal of Logistics Management*, Vol. 29 No. 4, pp. 1451-1471, doi: 10.1108/ijlm-04-2017-0093.

Aldrighetti, R., Battini, D., Ivanov, D. and Zennaro, I. (2021), "Costs of resilience and disruptions in supply chain network design models: a review and future research directions", *International Journal of Production Economics*, Vol. 235, 108103, doi: 10.1016/j.ijpe.2021.108103.

Ali, I. and Gölgeci, I. (2019), "Where is supply chain resilience research heading? A systematic and co-occurrence analysis", *International Journal of Physical Distribution and Logistics Management*, Vol. 49 No. 8, pp. 793-815, doi: 10.1108/ijpdlm-02-2019-0038.

Alicke, K., Foster, T. and Trautwein, V. (2024), *Supply Chains: Still Vulnerable*, McKinsey & Company.

Alikhani, R., Torabi, S.A. and Altay, N. (2021), "Retail supply chain network design with concurrent resilience capabilities", *International Journal of Production Economics*, Vol. 234, 108042, doi: 10.1016/j.ijpe.2021.108042.

Ambulkar, S., Blackhurst, J. and Grawe, S. (2015), "Firm's resilience to supply chain disruptions: scale development and empirical examination", *Journal of Operations Management*, Vols 33-34 No. 1, pp. 111-122, doi: 10.1016/j.jom.2014.11.002.

Arunachalam, D., Kumar, N. and Kawalek, J.P. (2018), "Understanding big data analytics capabilities in supply chain management: unravelling the issues, challenges and implications for practice", *Transportation Research Part E: Logistics and Transportation Review*, Vol. 114, pp. 416-436, doi: 10.1016/j.tre.2017.04.001.

Azadegan, A. and Dooley, K. (2021), "A Typology of supply network resilience strategies: complex collaborations in a complex world", *Journal of Supply Chain Management*, Vol. 57 No. 1, pp. 17-26, doi: 10.1111/jscm.12256.

Bae, H.-S., Grant, D.B., Banomyong, R. and Varadejsatitwong, P. (2023), "Investigating the impact of the strength of supply chain integration on cost and responsiveness", *International Journal of Logistics Research and Applications*, Vol. 26 No. 1, pp. 58-76, doi: 10.1080/13675567.2021.1931827.

Bag, S., Sabbir Rahman, M., Rogers, H., Srivastava, G. and Harm Christiaan Pretorius, J. (2023), "Climate change adaptation and disaster risk reduction in the garment industry supply chain network", *Transportation Research Part E: Logistics and Transportation Review*, Vol. 171, 103031, doi: 10.1016/j.tre.2023.103031.

Baryannis, G., Validi, S., Dani, S. and Antoniou, G. (2019a), "Supply chain risk management and artificial intelligence: state of the art and future research directions", *International Journal of Production Research*, Vol. 57 No. 7, pp. 2179-2202, doi: 10.1080/00207543.2018.1530476.

Downloaded from ftp.nowpublishers.com/ijpdlm/article-pdf/56/11/47/11140227/ijpdlm-07-2024-0264en.pdf by guest on 03 October 2026

Baryannis, G., Dani, S. and Antoniou, G. (2019b), "Predicting supply chain risks using machine learning: the trade-off between performance and interpretability", *Future Generation Computer Systems*, Vol. 101, pp. 993-1004, doi: 10.1016/j.future.2019.07.005.

Braun, V. and Clarke, V. (2006), "Using thematic analysis in psychology", *Qualitative Research in Psychology*, Vol. 3 No. 2, pp. 77-101, doi: 10.1191/1478088706qp063oa.

Braun, M.T., Kuljanin, G. and DeShon, R.P. (2013), "Spurious results in the analysis of longitudinal data in organizational research", *Organizational Research Methods*, Vol. 16 No. 2, pp. 302-330, doi: 10.1177/1094428112469668.

Brusset, X. and Teller, C. (2017), "Supply chain capabilities, risks, and resilience", *International Journal of Production Economics*, Vol. 184, pp. 59-68, doi: 10.1016/j.ijpe.2016.09.008.

Budler, M., Quiroga, B.F. and Trkman, P. (2023), "A review of supply chain transparency research: antecedents, technologies, types, and outcomes", *Journal of Business Logistics*, Vol. 45 No. 1, e12368, doi: 10.1111/jbl.12368.

Byrne, D. (2021), "A worked example of Braun and Clarke's approach to reflexive thematic analysis", *Quality and Quantity*, Vol. 56 No. 3, pp. 1391-1412, doi: 10.1007/s11135-021-01182-y.

Carnovale, S., DuHadway, S., Patrucco, A.S. and Yeniyurt, S. (2025), "Balancing risk and resilience: how network structures and firm strategies mitigate supply chain disruptions", *International Journal of Physical Distribution and Logistics Management*, Vol. 55 No. 7, doi: 10.1108/ijpdlm-08-2024-0310.

Carter, C.R., Rockwood, R.F., Patel, P.C., Bachrach, D., Bendoly, E., Duhadway, S. and Kaufmann, L. (2024), "Experiments in supply chain management research: a systematic review and future directions", *Journal of Business Logistics*, Vol. 45 No. 3, e12382, doi: 10.1111/jbl.12382.

Chen, K.D., Li, Y.H. and Linderman, K. (2022), "Supply network resilience learning: an exploratory data analytics study", *Decision Sciences*, Vol. 53 No. 1, pp. 8-27, doi: 10.1111/deci.12513.

Childerhouse, P., Al Aqqad, M., Zhou, Q. and Bezuidenhout, C. (2020), "Network resilience modeling: a New Zealand forestry supply chain case", *International Journal of Logistics Management*, Vol. 31 No. 2, pp. 291-311, doi: 10.1108/ijlm-12-2018-0316.

Choi, T.Y., Dooley, K.J. and Rungtusanatham, M. (2001), "Supply networks and complex adaptive systems: control versus emergence", *Journal of Operations Management*, Vol. 19 No. 3, pp. 351-366, doi: 10.1016/s0272-6963(00)00068-1.

Chopra, S., Sodhi, M. and Lücker, F. (2021), "Achieving supply chain efficiency and resilience by using multi-level commons", *Decision Sciences*, Vol. 52 No. 4, pp. 817-832, doi: 10.1111/deci.12526.

Chowdhury, M.M.H., Quaddus, M. and Chowdhury, M. (2023), "Managing relational practices for performance improvement in a complex supply chain network: the mediating roles of proactive and reactive resilience in apparel industry of Bangladesh", *International Journal of Logistics Management*, Vol. 34 No. 1, pp. 34-59, doi: 10.1108/ijlm-12-2020-0485.

Cole, D., Narayanan, S., Connors, E., Tewari, M. and Onda, K. (2025), "Water stress: opportunities for supply chain research", *Production and Operations Management*, Vol. 7 No. 34, pp. 1597-1615, doi: 10.1111/poms.13923.

Condé, L. and Münch, C. (2025), "Resilient by design: exploring the social abilities and actor-network roles of artificial intelligence in supply chain management", *Journal of Business Logistics*, Vol. 46 No. 4, e70032, doi: 10.1111/jbl.70032.

Craighead, C.W., Ketchen, D.J. Jr and Darby, J.L. (2020), "Pandemics and supply chain management research: toward a theoretical toolbox", *Decision Sciences*, Vol. 51 No. 4, pp. 838-866, doi: 10.1111/deci.12468.

Cui, L., Hertz, S. and Su, S.-I. (2010), "Innovation in an international third party logistics firm: a strategy-as-practice perspective", *Journal of Transport and Supply Chain Management*, Vol. 4 No. 1, pp. 69-88, doi: 10.4102/jtscm.v4i1.12.

Dai, J., Geng, R., Xu, D., Shangguan, W. and Shao, J. (2025), "Unveiling the impact of the congruence between artificial intelligence and explorative learning on supply chain resilience", *International*

Downloaded from ftp.nowpublishers.com/ijpdlm/article-pdf/56/11/47/11140227/ijpdlm-07-2024-0264en.pdf by guest on 03 October 2026

Journal of Operations and Production Management, Vol. 45 No. 2, pp. 570-593, doi: 10.1108/ijopm-12-2023-0990.

Datta, P. (2017), "Supply network resilience: a systematic literature review and future research", *The International Journal of Logistics Management*, Vol. 28 No. 4, pp. 1387-1424, doi: 10.1108/ijlm-03-2016-0064.

Dev, N.K., Shankar, R., Zacharia, Z.G. and Swami, S. (2021), "Supply chain resilience for managing the ripple effect in Industry 4.0 for green product diffusion", *International Journal of Physical Distribution and Logistics Management*, Vol. 51 No. 8, pp. 897-930, doi: 10.1108/ijpdlm-04-2020-0120.

Dixit, V., Verma, P. and Tiwari, M.K. (2020), "Assessment of pre and post-disaster supply chain resilience based on network structural parameters with CVaR as a risk measure", *International Journal of Production Economics*, Vol. 227, pp. 1-17, doi: 10.1016/j.ijpe.2020.107655.

Dolgui, A. and Ivanov, D. (2021), "Ripple effect and supply chain disruption management: new trends and research directions", *International Journal of Production Research*, Vol. 59 No. 1, pp. 102-109, doi: 10.1080/00207543.2021.1840148.

Durach, C.F., Kembro, J. and Wieland, A. (2017), "A new paradigm for systematic literature reviews in supply chain management", *Journal of Supply Chain Management*, Vol. 53 No. 4, pp. 67-85, doi: 10.1111/jscm.12145.

Durach, C.F., Wiengarten, F. and Choi, T.Y. (2020), "Supplier–supplier coopetition and supply chain disruption: first-tier supplier resilience in the tetradic context", *International Journal of Operations and Production Management*, Vol. 40 Nos 7/8, pp. 1041-1065, doi: 10.1108/ijopm-03-2019-0224.

Fan, D., Zhou, Y., Yeung, A.C.L., Lo, C.K.Y. and Tang, C. (2022), "Impact of the U.S.–China trade war on the operating performance of U.S. firms: the role of outsourcing and supply base complexity", *Journal of Operations Management*, Vol. 68 No. 8, pp. 928-962, doi: 10.1002/joom.1225.

Fattahi, M., Govindan, K. and Keyvanshokooh, E. (2017), "Responsive and resilient supply chain network design under operational and disruption risks with delivery lead-time sensitive customers", *Transportation Research Part E: Logistics and Transportation Review*, Vol. 101, pp. 176-200, doi: 10.1016/j.tre.2017.02.004.

Fattahi, M., Govindan, K. and Maihami, R. (2020), "Stochastic optimization of disruption-driven supply chain network design with a new resilience metric", *International Journal of Production Economics*, Vol. 230, 107755, doi: 10.1016/j.ijpe.2020.107755.

Fawcett, S.E., Waller, M.A., Miller, J.W., Schwieterman, M.A., Hazen, B.T. and Overstreet, R.E. (2014), "A trail guide to publishing success: tips on writing influential conceptual, qualitative, and survey research", *Jounal of Business Logistics*, Vol. 35 No. 1, pp. 1-16, doi: 10.1111/jbl.12039.

Feizabadi, J., Gligor, D.M. and Choi, T.Y. (2021), "Examining the resiliency of intertwined supply networks: a jury-rigging perspective", *International Journal of Production Research*, Vol. 61 No. 8, pp. 2432-2451, doi: 10.1080/00207543.2021.1977865.

Fletcher, M., Harris, S. and Richey, R.G.J. (2013), "Internationalization knowledge: what, why, where, and when", *Journal of International Marketing*, Vol. 21 No. 3, pp. 47-71, doi: 10.1509/jim.12.0121.

Fletcher, M., Harris, S. and Richey, R.G. (2021), "Retrospective and prospective learning: accelerating the internationalization process", *Journal of World Business*, Vol. 56 No. 3, 101191, doi: 10.1016/j.jwb.2021.101191.

Friday, D., Melnyk, S.A., Altman, M., Harrison, N. and Ryan, S. (2024), "An inductive analysis of collaborative cybersecurity management capabilities, relational antecedents and supply chain cybersecurity parameters", *International Journal of Physical Distribution and Logistics Management*, Vol. 54 No. 5, pp. 476-500, doi: 10.1108/ijpdlm-01-2023-0034.

Galeano, S. and McSwigan, C. (2022), "The supply chain crisis: what's behind it and what to do about it", Third Way, pp. 1-15.

Downloaded from ftp.nowpublishers.com/ijpdlm/article-pdf/56/11/47/11140227/ijpdlm-07-2024-0264en.pdf by guest on 03 October 2026

Gatenholm, G. and Halldorsson, A. (2023), "Responding to discontinuities in product-based service supply chains in the COVID-19 pandemic: towards transilience", *European Management Journal*, Vol. 41 No. 3, pp. 425-436, doi: 10.1016/j.emj.2022.02.007.

Ghanei, S., Contreras, I. and Cordeau, J.-F. (2023), "A two-stage stochastic collaborative intertwined supply network design problem under multiple disruptions", *Transportation Research Part E: Logistics and Transportation Review*, Vol. 170, 102944, doi: 10.1016/j.tre.2022.102944.

Gholami-Zanjani, S.M., Klibi, W., Jabalameli, M.S. and Pishvaee, M.S. (2021), "The design of resilient food supply chain networks prone to epidemic disruptions", *International Journal of Production Economics*, Vol. 233, 108001, doi: 10.1016/j.ijpe.2020.108001.

Giannoccaro, I. and Iftikhar, A. (2022), "Mitigating ripple effect in supply networks: the effect of trust and topology on resilience", *International Journal of Production Research*, Vol. 60 No. 4, pp. 1178-1195, doi: 10.1080/00207543.2020.1853844.

Goldsby, T.J., Griffis, S.E. and Roath, A.S. (2006), "Modeling lean, agile, and leagile supply chain strategies", *Journal of Business Logistics*, Vol. 27 No. 1, pp. 57-80, doi: 10.1002/j.2158-1592.2006.tb00241.x.

Goldsby, T.J., Kuratko, D.F. and Goldsby, M.G. (2024), "Developing an entrepreneurial mindset in supply chain managers: exposing a powerful potential", *Journal of Business Logistics*, Vol. 45 No. 2, e12372, doi: 10.1111/jbl.12372.

Guntuka, L., Carnovale, S. and Falcone, E. (2024a), "Supply chain plasticity: a responsive network capability to ensure resilience", *Journal of Business Logistics*, Vol. 45 No. 4, e12398, doi: 10.1111/jbl.12398.

Guntuka, L., Corsi, T.M. and Cantor, D.E. (2024b), "Recovery from plant-level supply chain disruptions: supply chain complexity and business continuity management", *International Journal of Operations and Production Management*, Vol. 44 No. 1, pp. 1-31, doi: 10.1108/ijopm-09-2022-0611.

Hearnshaw, E.J.S. and Wilson, M.M.J. (2013), "A complex network approach to supply chain network theory", *International Journal of Operations and Production Management*, Vol. 33 No. 4, pp. 442-469, doi: 10.1108/01443571311307343.

Hohenstein, N.-O., Feisel, E., Hartmann, E. and Giunipero, L. (2015), "Research on the phenomenon of supply chain resilience: a systematic review and paths for further investigation", *International Journal of Physical Distribution and Logistics Management*, Vol. 45 Nos 1-2, pp. 90-117, doi: 10.1108/IJPDLM-05-2013-0128.

Hosseini, S., Ivanov, D. and Blackhurst, J. (2022a), "Conceptualization and measurement of supply chain resilience in an open-system context", *IEEE Transactions on Engineering Management*, Vol. 69 No. 6, pp. 3111-3126, doi: 10.1109/tem.2020.3026465.

Hosseini, S., Ivanov, D. and Dolgui, A. (2022b), "A new resilience measure for supply networks with the ripple effect considerations: a Bayesian network approach", *Annals of Operations Research*, Vol. 319 No. 1, pp. 581-607, doi: 10.1007/s10479-021-03952-1.

Ivanov, D. (2020), "'A blessing in disguise' or 'as if it wasn't hard enough already': reciprocal and aggravate vulnerabilities in the supply chain", *International Journal of Production Research*, Vol. 58 No. 11, pp. 3252-3262, doi: 10.1080/00207543.2019.1634850.

Ivanov, D. and Dolgui, A. (2019), "Digital supply chain management and technology to enhance resilience by building and using digital twins, blockchain, and artificial intelligence", *Annals of Operations Research*, Vol. 276 Nos 1-2, pp. 639-661, doi: 10.1007/s10479-019-03226-5.

Ivanov, D. and Dolgui, A. (2020), "Viability of intertwined supply networks: extending the supply chain resilience angles towards survivability. A position paper motivated by COVID-19 outbreak", *International Journal of Production Research*, Vol. 58 No. 10, pp. 2904-2915, doi: 10.1080/00207543.2020.1750727.

Ivanov, D., Blackhurst, J. and Das, A. (2021), "Supply chain resilience and its interplay with digital technologies: making innovations work in emergency situations", *International Journal of Physical Distribution and Logistics Management*, Vol. 51 No. 2, pp. 97-103, doi: 10.1108/ijpdlm-03-2021-409.

Downloaded from ftp.nowpublishers.com/ijpdlm/article-pdf/56/11/47/11140227/ijpdlm-07-2024-0264en.pdf by guest on 03 October 2026

Ivanov, D., Dolgui, A., Sokolov, B. and Ivanova, M. (2017), "Literature review on disruption recovery in the supply chain", *International Journal of Production Research*, Vol. 55 No. 20, pp. 6158-6174, doi: 10.1080/00207543.2017.1330572.

Ivanov, D., Sokolov, B. and Dolgui, A. (2014), "The ripple effect in supply chains: trade-off "efficiency–flexibility–resilience" in disruption management", *International Journal of Production Research*, Vol. 52 No. 7, pp. 2154-2172, doi: 10.1080/00207543.2013.858836.

Jiang, W., Feng, T. and Wong, C.Y. (2025), "How big data analytics capabilities drive supply chain resilience: the mediating roles of supply chain visibility and flexibility", *International Journal of Physical Distribution and Logistics Management*, Vol. 55 No. 5, pp. 505-539, doi: 10.1108/ijpdlm-07-2024-0252.

Juan, S.-J., Li, E. Y. and Hung, W.-H. (2022), "An integrated model of supply chain resilience and its impact on supply chain performance under disruption", *The International Journal of Logistics Management*, Vol. 33 No. 1, pp. 339-364, doi: 10.1108/IJLM-03-2021-0174.

Kähkönen, A.-K., Evangelista, P., Hallikas, J., Immonen, M. and Lintukangas, K. (2023), "COVID-19 as a trigger for dynamic capability development and supply chain resilience improvement", *International Journal of Production Research*, Vol. 61 No. 8, pp. 2696-2715, doi: 10.1080/00207543.2021.2009588.

Kamalahmadi, M. and Parast, M.M. (2016), "A review of the literature on the principles of enterprise and supply chain resilience: major findings and directions for future research", *International Journal of Production Economics*, Vol. 171, pp. 116-133, doi: 10.1016/j.ijpe.2015.10.023.

Ketchen, D.J. and Craighead, C.W. (2023), "What constitutes an excellent literature review? Summarize, synthesize, conceptualize, and energize", *Journal of Business Logistics*, Vol. 44 No. 2, pp. 164-169, doi: 10.1111/jbl.12339.

Küffner, C., Münch, C., Hähner, S. and Hartmann, E. (2022), "Getting back into the swing of things: the adaptive path of purchasing and supply management in enhancing supply chain resilience", *Journal of Purchasing and Supply Management*, Vol. 28 No. 5, pp. 1-12, doi: 10.1016/j.pursup.2022.100802.

Lee, S.-h. (2017), "A fuzzy multi-objective programming approach for determination of resilient supply portfolio under supply failure risks", *Journal of Purchasing and Supply Management*, Vol. 23 No. 3, pp. 211-220, doi: 10.1016/j.pursup.2017.01.003.

Li, Y. and Zobel, C.W. (2020), "Exploring supply chain network resilience in the presence of the ripple effect", *International Journal of Production Economics*, Vol. 228, 107693, doi: 10.1016/j.ijpe.2020.107693.

Li, Y.H., Zobel, C.W., Seref, O. and Chatfield, D. (2020), "Network characteristics and supply chain resilience under conditions of risk propagation", *International Journal of Production Economics*, Vol. 223, 107529, doi: 10.1016/j.ijpe.2019.107529.

Li, Y., Chen, K., Collignon, S. and Ivanov, D. (2021), "Ripple effect in the supply chain network: forward and backward disruption propagation, network health and firm vulnerability", *European Journal of Operations Research*, Vol. 291 No. 3, pp. 1117-1131, doi: 10.1016/j.ejor.2020.09.053.

Lohmer, J., Bugert, N. and Lasch, R. (2020), "Analysis of resilience strategies and ripple effect in blockchain-coordinated supply chains: an agent-based simulation study", *International Journal of Production Economics*, Vol. 228, 107882, doi: 10.1016/j.ijpe.2020.107882.

Masorgo, N., Dobrzykowski, D.D. and Fugate, B.S. (2024), "Last-mile delivery: a process view, framework, and research agenda", *Journal of Business Logistics*, Vol. 45 No. 4, e12397, doi: 10.1111/jbl.12397.

Massari, G.F. and Giannoccaro, I. (2021), "Investigating the effect of horizontal coopetition on supply chain resilience in complex and turbulent environments", *International Journal of Production Economics*, Vol. 237, 108150, doi: 10.1016/j.ijpe.2021.108150.

McFarland, R.G., Bloodgood, J.M. and Payan, J.M. (2008), "Supply chain contagion", *Journal of Marketing*, Vol. 72 No. 2, pp. 63-79, doi: 10.1509/jmkg.72.2.63.

Downloaded from ftp.nowpublishers.com/ijpdlm/article-pdf/56/11/47/11140227/ijpdlm-07-2024-0264en.pdf by guest on 03 October 2026

Modgil, S., Gupta, S., Stekelorum, R. and Laguir, I. (2022), "AI technologies and their impact on supply chain resilience during COVID-19", *International Journal of Physical Distribution and Logistics Management*, Vol. 52 No. 2, pp. 130-149, doi: 10.1108/ijpdlm-12-2020-0434.

Morgan, T.R., Roath, A.S. and Glenn Richey, R. (2023), "How risk, transparency, and knowledge influence the adaptability and flexibility dimensions of the responsiveness view", *Journal of Business Research*, Vol. 158, 113641, doi: 10.1016/j.jbusres.2022.113641.

Münch, C. and Hartmann, E. (2022), "Transforming resilience in the context of a pandemic: results from a cross-industry case study exploring supply chain viability", *International Journal of Production Research*, Vol. 61 No. 8, pp. 1-19, doi: 10.1080/00207543.2022.2029610.

Munir, M., Jajja, M.S.S. and Chatha, K.A. (2022), "Capabilities for enhancing supply chain resilience and responsiveness in the COVID-19 pandemic: exploring the role of improvisation, anticipation, and data analytics capabilities", *International Journal of Operations and Production Management*, Vol. 42 No. 10, pp. 1576-1604, doi: 10.1108/ijopm-11-2021-0677.

Ngoc, N.M., Viet, D.T., Tien, N.H., Hiep, P.M., Anh, N.T., Anh, L.D.H. and Dung, V. (2022), "Russia-Ukraine war and risks to global supply chains", *International Journal of Mechanical Engineering*, Vol. 7 No. 6, pp. 633-640.

Nikookar, E. and Yanadori, Y. (2022a), "Forming post-COVID supply chains: does supply chain managers' social network affect resilience?", *International Journal of Physical Distribution and Logistics Management*, Vol. 52 No. 7, pp. 538-566, doi: 10.1108/ijpdlm-05-2021-0167.

Nikookar, E. and Yanadori, Y. (2022b), "Preparing supply chain for the next disruption beyond COVID-19: managerial antecedents of supply chain resilience", *International Journal of Operations and Production Management*, Vol. 42 No. 1, pp. 59-90, doi: 10.1108/ijopm-04-2021-0272.

Novak, D.C., Wu, Z. and Dooley, K.J. (2021), "Whose resilience matters? Addressing issues of scale in supply chain resilience", *Journal of Business Logistics*, Vol. 42 No. 3, pp. 323-335, doi: 10.1111/jbl.12270.

Ponomarov, S.Y. and Holcomb, M.C. (2009), "Understanding the concept of supply chain resilience", *The International Journal of Logistics Management*, Vol. 20 No. 1, pp. 124-143, doi: 10.1108/09574090910954873.

Rainer, R.K., Richey, R.G. and Chowdhury, S. (2025), "How robotics is shaping digital logistics and supply chain management: an ongoing call for research", *Journal of Business Logistics*, Vol. 46 No. 1, e70005, doi: 10.1111/jbl.70005.

Richey, R.G., Roath, A.S., Whipple, J.M. and Fawcett, S.E. (2011), "Exploring a governance theory of supply chain management: barriers and facilitators to integration", *Journal of Business Logistics*, Vol. 31 No. 1, pp. 237-256, doi: 10.1002/j.2158-1592.2010.tb00137.x.

Richey, R.G., Roath, A.S., Adams, F.G. and Wieland, A. (2022), "A responsiveness view of logistics and supply chain management", *Journal of Business Logistics*, Vol. 43 No. 1, pp. 62-91, doi: 10.1111/jbl.12290.

Saisridhar, P., Thürer, M. and Avittathur, B. (2024), "Assessing supply chain responsiveness, resilience and robustness (Triple-R) by computer simulation: a systematic review of the literature", *International Journal of Production Research*, Vol. 62 No. 4, pp. 1458-1488, doi: 10.1080/00207543.2023.2180302.

Scala, B. and Lindsay, C.F. (2021), "Supply chain resilience during pandemic disruption: evidence from healthcare", *Supply Chain Management: An International Journal*, Vol. 26 No. 6, pp. 672-688, doi: 10.1108/scm-09-2020-0434.

Schmitt, A.J. and Singh, M. (2012), "A quantitative analysis of disruption risk in a multi-echelon supply chain", *International Journal of Production Economics*, Vol. 139 No. 1, pp. 22-32, doi: 10.1016/j.ijpe.2012.01.004.

Scholten, K. and Schilder, S. (2015), "The role of collaboration in supply chain resilience", *Supply Chain Management: An International Journal*, Vol. 20 No. 4, pp. 471-484, doi: 10.1108/scm-11-2014-0386.

Downloaded from ftp.nowpublishers.com/ijpdlm/article-pdf/56/11/47/11140227/ijpdlm-07-2024-0264en.pdf by guest on 03 October 2026

Scholten, K., Sharkey Scott, P. and Fynes, B. (2014), "Mitigation processes – antecedents for building supply chain resilience", *Supply Chain Management: An International Journal*, Vol. 19 No. 2, pp. 211-228, doi: 10.1108/scm-06-2013-0191.

Sharma, A., Adhikary, A. and Borah, S.B. (2020), "COVID-19's impact on supply chain decisions: strategic insights from NASDAQ 100 firms using Twitter data", *Journal of Business Research*, Vol. 117, pp. 443-449, doi: 10.1016/j.jbusres.2020.05.035.

Sheffi, Y. and Rice, J.B.J. (2005), "A supply chain view of the resilient enterprise", *MIT Sloan Management Review*, Vol. 47 No. 1.

Shin, N. and Park, S. (2021), "Supply chain leadership driven strategic resilience capabilities management: a leader-member exchange perspective", *Journal of Business Research*, Vol. 122, pp. 1-13, doi: 10.1016/j.jbusres.2020.08.056.

Singh, S., Kumar, R., Panchal, R. and Tiwari, M.K. (2020), "Impact of COVID-19 on logistics systems and disruptions in food supply chain", *International Journal of Production Research*, Vol. 58 No. 7, pp. 1993-2008, doi: 10.1080/00207543.2020.1792000.

Sodhi, M.S. and Tang, C.S. (2014), "Buttressing supply chains against floods in Asia for humanitarian relief and economic recovery", *Production and Operations Management*, Vol. 23 No. 6, pp. 938-950, doi: 10.1111/poms.12111.

Spieske, A., Gebhardt, M., Kopyto, M., Birkel, H. and Hartmann, E. (2022), "How did supply chain networks handle the COVID-19 pandemic? Empirical evidence from an automotive case study", *International Journal of Physical Distribution and Logistics Management*, Vol. 52 No. 7, pp. 567-601, doi: 10.1108/ijpdlm-06-2021-0231.

Tan, W.J., Zhang, A.N. and Cai, W. (2019), "A graph-based model to measure structural redundancy for supply chain resilience", *International Journal of Production Research*, Vol. 57 No. 20, pp. 6385-6404, doi: 10.1080/00207543.2019.1566666.

Tukamuhabwa, B.R., Stevenson, M., Busby, J. and Zorzini, M. (2015), "Supply chain resilience: definition, review and theoretical foundations for further study", *International Journal of Production Research*, Vol. 53 No. 18, pp. 5592-5623, doi: 10.1080/00207543.2015.1037934.

Wiedmer, R. and Griffis, S.E. (2021), "Structural characteristics of complex supply chain networks", *Journal of Business Logistics*, Vol. 42 No. 2, pp. 264-290, doi: 10.1111/jbl.12283.

Wieland, A. and Durach, C.F. (2021), "Two perspectives on supply chain resilience", *Journal of Business Logistics*, Vol. 42 No. 3, pp. 315-322, doi: 10.1111/jbl.12271.

Wieland, A. and Wallenburg, C.M. (2013), "The influence of relational competencies on supply chain resilience: a relational view", *International Journal of Physical Distribution and Logistics Management*, Vol. 43 No. 4, pp. 300-320, doi: 10.1108/ijpdlm-08-2012-0243.

Wieland, A., Stevenson, M., Melnyk, S.A., Davoudi, S. and Schultz, L. (2023), "Thinking differently about supply chain resilience: what we can learn from social-ecological systems thinking", *International Journal of Operations and Production Management*, Vol. 43 No. 1, pp. 1-21, doi: 10.1108/ijopm-10-2022-0645.

Wu, Q., Zhu, J. and Cheng, Y. (2023), "The effect of cross-organizational governance on supply chain resilience: a mediating and moderating model", *Journal of Purchasing and Supply Management*, Vol. 29 No. 1, 100817, doi: 10.1016/j.pursup.2023.100817.

Yoon, J., Talluri, S. and Rosales, C. (2020), "Procurement decisions and information sharing under multi-tier disruption risk in a supply chain", *International Journal of Production Research*, Vol. 58 No. 5, pp. 1362-1383, doi: 10.1080/00207543.2019.1634296.

Yue, X.P., Mu, D., Wang, C., Ren, H.Y. and Ghadimi, P. (2023), "Topological structure and COVID-19 related risk propagation in TFT-LCD supply networks", *International Journal of Production Research*, Vol. 61 No. 8, pp. 1-21, doi: 10.1080/00207543.2022.2027039.

Zhao, K., Zuo, Z. and Blackhurst, J.V. (2019), "Modeling supply chain adaptation for disruptions: an empirically grounded complex adaptive systems approach", *Journal of Operations Management*, Vol. 65 No. 2, pp. 190-212, doi: 10.1002/joom.1009.

Downloaded from ftp.nowpublishers.com/ijpdlm/article-pdf/56/11/47/11140227/ijpdlm-07-2024-0264en.pdf by guest on 03 October 2026

Zhao, N., Hong, J. and Lau, K.H. (2023), "Impact of supply chain digitalization on supply chain resilience and performance: a multi-mediation model", *International Journal of Production Economics*, Vol. 259, 108817, doi: 10.1016/j.ijpe.2023.108817.

Zhu, Q., Krikke, H. and Caniëls, M.C.J. (2018), "Supply chain integration: value creation through managing inter-organizational learning", *International Journal of Operations and Production Management*, Vol. 38 No. 1, pp. 211-229, doi: 10.1108/ijopm-06-2015-0372.

Zouari, D., Ruel, S. and Viale, L. (2020), "Does digitalising the supply chain contribute to its resilience?", *International Journal of Physical Distribution and Logistics Management*, Vol. 51 No. 2, pp. 149-180, doi: 10.1108/ijpdlm-01-2020-0038.

Corresponding author
Robert Glenn Richey Jr can be contacted at: richey@auburn.edu

For instructions on how to order reprints of this article, please visit our website:
www.emeraldgrouppublishing.com/licensing/reprints.htm
Or contact us for further details: **permissions@emeraldinsight.com**

Downloaded from ftp.nowpublishers.com/ijpdlm/article-pdf/56/11/47/11140227/ijpdlm-07-2024-0264en.pdf by guest on 03 October 2026