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The Role of Social Capital in Risk Mitigation and Recovery Strategies in Supply Chains: A Systematic Literature Review

Cranfield School of Management
Logistics and Supply Chain Management

MSc
Academic Year: 2024 - 2025

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This thesis is submitted in partial fulfilment of the requirements for the degree of Master of Science

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Academic integrity declaration

I declare that:

- the thesis submitted has been written by me alone.
- the thesis submitted has not been previously submitted to this university or any other.
- that all content, including primary and/or secondary data, is true to the best of my knowledge.
- that all quotations and references have been duly acknowledged according to the requirements of academic research.

I understand that to knowingly submit work in violation of the above statement will be considered by examiners as academic misconduct.

Abstract

Global supply chains are increasingly exposed to a wide range of disruptions, from natural disasters and pandemics to geopolitical conflicts and technological breakdowns. Against this backdrop, resilience has emerged as a central concern for both scholars and practitioners. This thesis investigates the role of social capital in risk mitigation and recovery strategies in supply chains, focusing on how its structural, relational, and cognitive dimensions contribute to resilience. A systematic literature review (SLR) was conducted, analysing sixty peer-reviewed articles published between 2010 and 2025, drawn from Scopus and EBSCO databases. The thematic synthesis identified five interrelated mechanisms; trust, knowledge sharing, collaboration, flexibility, and shared norms, that explain how social capital operates as a systemic resource for resilience. The findings demonstrate that relational trust accelerates joint responses, structural capital enhances information flows and flexibility, and cognitive alignment through shared norms embeds a risk-aware culture that sustains long-term resilience. Together, these mechanisms highlight the interdependence of social and organisational ties in shaping risk mitigation and recovery capabilities. This research adds to theoretical debates and provides practical insights into an integrative framework of social capital and resilience, and to practice by offering actionable guidance for managers on cultivating trust, collaborative capacity, and cultural alignment in their networks. Limitations are acknowledged in terms of dataset scope and sectoral focus, but this research also identifies avenues for future research, including digital trust, informal networks, and cross-cultural perspectives.

In summary, the thesis demonstrates that resilience is not solely a technical or structural capability, but a collective achievement rooted in the networks.

Keywords:

Resilience, Collaboration, Knowledge sharing, Flexibility, Humanitarian logistics, Digitalisation.

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List of Abbreviations

SLR	Systematic Literature Review
PRISMA	Preferred Reporting Items for Systematic Reviews and Meta-Analyses
SCM	Supply Chain Management
NGO	Non-Governmental Organisation
RBV	Resource-Based View
CAS	Complex Adaptive System
COVID-19	Coronavirus Disease 2019
SME	Small and Medium-Sized Enterprises
CSR	Corporate Social Responsibility
ICT	Information and Communication Technology
GLC	Global Logistics Cluster
SCR	Supply Chain Resilience
RQ	Research Question
SC	Supply Chain
EBMgt	Evidence-Base Management

1 Introduction

1.1 Background to the Study

Modern supply chains face rising exposure to disruptions arising from natural disasters, geopolitical conflicts, pandemics, and market instability. The increasing complexity of global supply networks has challenged traditional risk mitigation strategies such as inventory buffering and supplier diversification (Wieland and Wallenburg, 2013). Consequently, scholars have turned their attention toward relational and organizational capabilities that enable firms to sense, absorb, and recover from disruptions (Sheffi and Rice, 2005). As global supply networks grow more complex and interdependent, researchers have shifted their attention toward relational and organisational capabilities that enable firms to anticipate, absorb, and recover from unforeseen events (Sheffi and Rice, 2005).

One such capability is social capital; broadly defined as the sum of the resources embedded in relationships among actors in a network (Nahapiet and Ghoshal,1998). In supply chain contexts, social capital supports collaboration, facilitates information exchange, and nurtures mutual trust, thereby enhancing a firm's adaptability and resilience in the face of external shocks. Relational assets such as trust, shared values, reciprocity, and joint problem-solving capacity have been shown to play a significant role in enabling firms to manage uncertainty and disruption (Zhao et al., 2008).

However, despite growing scholarly interest, the literature on social capital in supply chain risk management remains conceptually fragmented and methodologically inconsistent. Different studies focus on varying aspects such as cognitive, structural, or relational dimensions without a unified framework for understanding or measuring these constructions. The conceptualisation of social capital often shifts across studies, with some equating it to trust alone, while others consider it a multi-dimensional resource encompassing norms, networks, and knowledge exchange mechanisms (Adler and Kwon, 2002; Inkpen and Tsang, 2005).

This lack of definitional clarity and measurement consistency complicates efforts to build cumulative knowledge. As such, there is a need for a structural and systematic review that synthesises the existing literature, clarifies how social capital is understood and operationalised, and identifies its implications for supply chain resilience.

By consolidating current knowledge, this study seeks to offer a more coherent understanding of the social capita's role in supporting firms during periods of supply chain disruption.

1.2 Research Problem

Although the role of social capital is increasingly recognized, research on its application to supply chain is still dispersed. Many studies often focus on technological, contractual, or structural elements of resilience while overlooking the relational and social underpinnings. Moreover, there is inconsistency in how social capital is defined and measured across different supply chain contexts, making it difficult to compare findings or derive generalizable insights (Wieland and Wallenburg, 2013).

This conceptual inconsistency makes it difficult to accumulate knowledge, compare findings, or translate insights into practice. As a result, both theoretical development and managerial guidance in this area are limited. To address this gap, there is need for a systematic literature review that consolidates existing research, maps thematic patterns, and identifies opportunities for future inquiry. Such a review will provide the clarity and structure necessary to advance both academic understanding and practical application of social capital in the context of supply chain resilience.

1.3 Significance of the Study

This study holds both academic and practical significance. Academically, it adds to the theoretical debates and provides practical insights into how social capital supports risk mitigation and recovery. While social capital has been studied in various organisational contexts, its application in supply chain resilience remains fragmented and under-theorised. By consolidating and critically analysing the existing literature, this research advances a more unified understanding of how social capital operates as a strategic resource in mitigating disruption and enabling recovery.

Additionally, the study highlights methodological inconsistencies in how social capital is conceptualised and measured across studies. By valuable direction for future design, helping scholars develop more coherent and replicable frameworks for examining relational dynamics in supply chains.

From a practical perspective, this study equips supply chain managers with evidence-based insights into how relationship-oriented strategies such as trust-building, open communication, and collaborative decision-making can be leveraged to enhance resilience. In an environment increasingly defined by volatility, interdependence, and systemic risk, such capabilities are critical to sustaining operational continuity and competitive advantage.

Furthermore, the findings offer actionable implications for policymakers and industry associations seeking to foster more collaborative and adaptive supply networks at local, national, and global levels.

Finally, this research bridges social theory with supply chain practice, contributing to the emerging body of work that calls for more human-centred approaches to managing complexity and disruption. It underscores the need to look beyond technological and structural fixes and instead consider the relational fabric that underpins resilient systems (Cheng et al., 2012).

1.4 Research Aim and Objectives

This research aims to explore the role of social capital in supply chain risk mitigation and recovery strategies through a systematic review of literature. The research seeks to uncover mechanisms, empirical evidence, and gaps in the literature that illuminate the role of social capital in fostering supply chain resilience. This aim is grounded in emerging research that positions social capital as a strategic resource that enhances communication, coordination, and responsiveness among supply chain actors (Cousins et al., 2006; Scholten & Schilder, 2015). By synthesizing these findings, the study will help clarify the multidimensional impact of social capital across disruption phases.

To fulfil this aim, the research will address the following objectives:

1. To examine the role of different dimensions of social capital (e.g., structural, relational, and cognitive) in mitigating risk and supporting recovery.

2. To assess the effectiveness of social capital mechanisms in fostering supply chain resilience.

3. To identify theoretical gaps in the current literature and recommend future research directions in this area.

1.5 Research Questions

Based on the stated aim and objectives, the following research questions guide this study:

1. What roles do structural, relational, and cognitive dimensions of social capital play in mitigating supply chain risks and supporting recovery?

2. What evidence exists on the effectiveness of social capital mechanisms in enhancing supply chain resilience?

3. What theoretical gaps exist in the literature on social capital and supply chain resilience, and what are the suggested directions for future research?

1.6 Structure of the Thesis

This thesis is structured into five chapters. Chapter One introduces the research topic, outlines the problem, significance, aim and objectives. Chapter Two outlines the methodology, covering database selection, screening, and the use of PRISMA to ensure transparency. Chapter Three presents the descriptive analysis of the selected articles, through the publication timeline, geographical and sectoral scope, methodological approach. Chapter Four presents the findings through thematic synthesis. Chapter Five interprets and evaluates the findings considering existing theories and practice. Finally, Chapter Six concludes the thesis with recommendations for future research and managerial application.

2 Methodology

This chapter outlines the methodological framework employed in this research, which adopts a Systematic Literature Review (SLR) approach. The aim is to investigate the role of social capital in mitigating and recovering from disruptions in supply chains. The SLR methodology was selected due to its structured, transparent, and replicable nature, which is particularly well-suited for synthesising academic evidence across complex, interdisciplinary fields such as supply chain resilience and inter-organisational relationships. The structure of this review is guided by the PRISMA 2020 (Preferred Reporting Items for Systematic Reviews and Meta-Analyses) framework (Page et al., 2021) and grounded in the systematic review methodology developed by Denyer and Tranfield (2009) at Cranfield School of Management. This approach aligns with evidence-based management (EBMgt), which is foundational to research conducted within the Cranfield School of Management. This approach is particularly appropriate in this research because it facilitates the identification of patterns across diverse empirical contexts, enabling a more rigours and generalisable understanding of social capital in supply chain risk management.

2.1 Systematic Literature Review Framework

The SLR process implemented in this study is based on the methodological framework developed by Denyer and Tranfield (2009), which is widely applied within the management sciences for evidence-informed decision-making. This structured approach involves five key stages: formulating the research question, locating studies, selecting and evaluating relevant literature, extracting and synthesising data, and reporting the review findings.

The Denyer and Tranfield framework offers transparency and replicability, essential features for synthesising diverse research across multiple subfields. Its structured nature is well-suited to addressing fragmented conceptual domains, such as social capital in supply chains, where terminologies and analytical perspectives often diverge.

The research questions, eligibility criteria, database selection, and data analysis strategy were determined in advance to reduce bias (Tranfield et al., 2003). The final review is qualitative and interpretative, aligned with evidence-based management research practices (Denyer and Tranfield, 2009).

2.2 Search Strategy and Keywords

Scopus and EBSCO were chosen as the main databases, offering broad coverage of peer-reviewed studies relevant to the topic. Scopus is one of the largest abstract and citation databases of peer-reviewed literature, covering disciplines in social sciences, business, and engineering (Mongeon and Paul-Hus, 2016). EBSCOhost was selected to complement the Scopus search due to its rich indexing of business and management sources, including niche journals in logistics, operations, and inter-organisational studies. The searches were restricted to English-language peer-reviewed journal articles published between 2010 and 2025 to ensure both relevance and recency. This period captures over a decade of research, including significant global supply chain disruptions such as the 2011 Tohoku earthquake, the 2014 Ebola outbreak, and more recently the COVID-19 pandemic (2020-2022) and the Russia-Ukraine war (2022-ongoing). These events have reshaped the supply chain risk discourse, emphasising resilience, adaptability, and relational capabilities like social capital.

Moreover, studies prior to 2010 often emphasised operational efficiency or lean models, with limited exploration of resilience-focused frameworks. Therefore, selecting 2010 as the starting point allows the review to focus on the contemporary evolution of social capital in response to systemic risks, while the endpoint (2025) ensures that the most up-to-date empirical contributions are included.

The keyword strategy was developed around three conceptual domains central to the research questions:

Table 1 Concept and Keywords, illustrating the systematic approach to retrieving relevant studies on social capital and supply chain resilience.

Concept	Keywords / Synonyms
Social Capital	“Social capital”, “relational capital”, “trust”, “collaboration”, “shared norms”.
Supply Chain	“Supply chain”, “supply network”, “logistics”, “value chain”.
Resilience	“resilience”, “risk mitigation”, “disruption”, “recovery”, “adaptation”, “continuity”.

The Boolean search string was constructed as follows:

(“social capital” OR trust OR “relational capital”) AND (“supply chain” OR logistics) AND (“resilience” OR “risk mitigation” OR recovery).

2.3 Inclusion and Exclusion Criteria

Inclusion and exclusion criteria were developed to ensure methodological transparency and relevance. These criteria helped refine an initial dataset consisted of 637 records (Scopus = 477, EBSCO = 160). The following table provides a detailed breakdown of these criteria and their justification.

Table 2 Inclusion and exclusion criteria, showing the inclusion and exclusion criteria applied during article screening, ensuring relevance, quality, and alignment with the research objectives.

Criteria	Inclusion	Exclusion	Rationale
Language	English	Non-English	Language fluency and database indexing limitations.
Time Frame	2010-2025	Pre 2010	Captures post-crisis developments in supply chain resilience and relevance to current global disruptions.
Document Type	Peer-reviewed journal articles	Books, blogs, editorials, conference abstracts	Assures academic rigor and peer-review process.
Publication Stage	Published studies	Under-review or unpublished work	Ensures academic completeness and quality control.
Source Type	Scopus and EBSCO databases	Non-indexed/grey literature	Focus on traceable,

			indexed publications.
Access	Full-text available	Paywalled or inaccessible texts	Allows full methodological and content evaluation.
Relevance	Addresses social capital and supply chain risk / resilience	Off-topic or peripheral studies	Aligned with research questions and objectives.
Quality	Clearly stated methods, cited by peers	Lacks rigor or low-impact journals	Ensures validity, reliability, and contribution to the field.

2.4 Screening and Selection Process

A total of 637 records were identified from the combined database search (Scopus = 477; EBSCOhost = 160). Duplicates were removed before screening tittles, abstracts, and keywords, Full-text reviews were then conducted. Following detailed relevance and quality review, the 150 full-text articles were assessed for eligibility, and 60 studies were selected for final synthesis. This process is illustrated using the PRISMA flow diagram, (Figure 1) which offers a transparent overview of each stage in the screening process (Page et al., 2021).

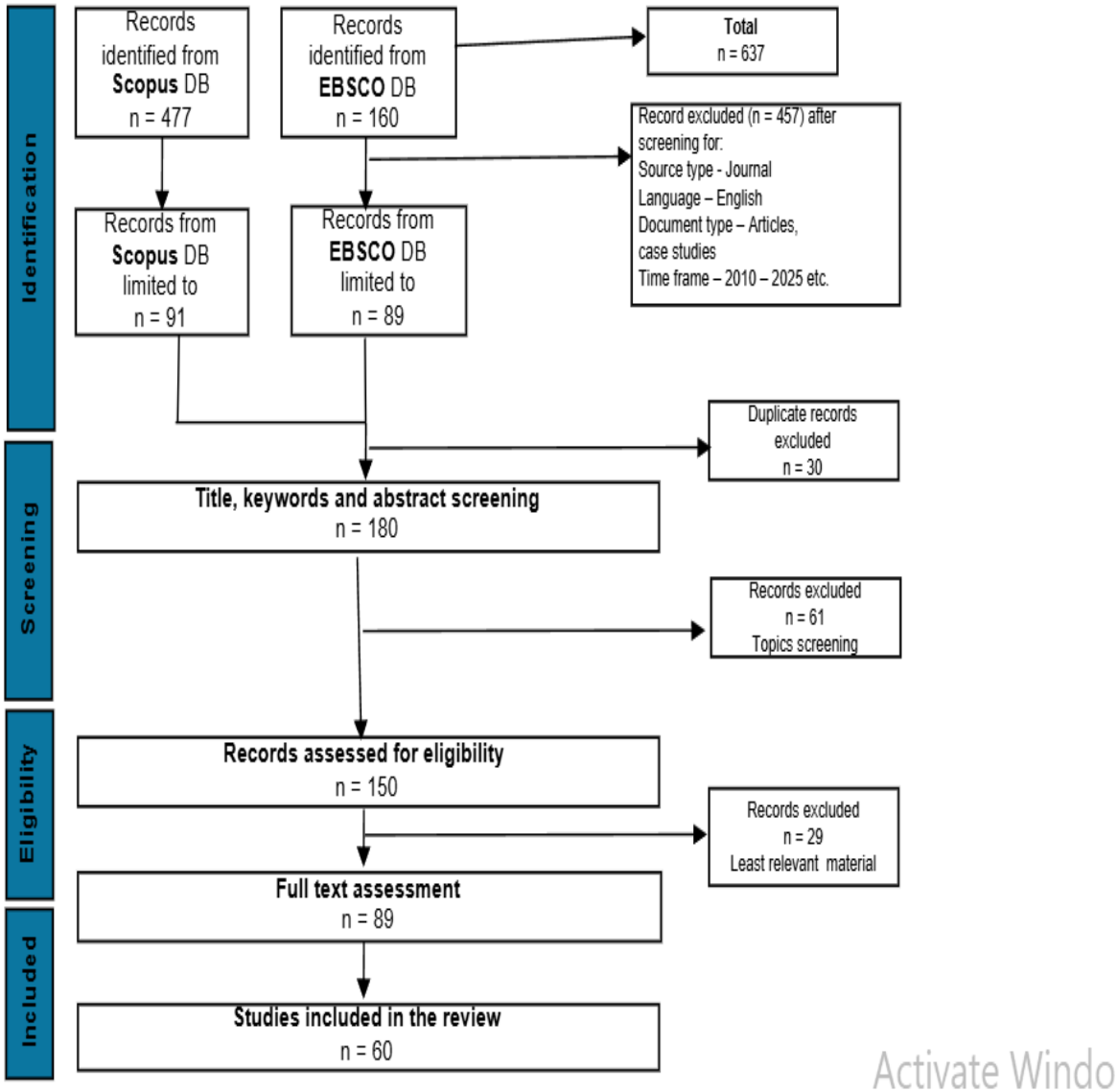


Figure 1 PRISAM Flow Diagram, showing the screening process and systematic selection of 60 peer-reviewed articles for the final synthesis. (Source: Author).

2.5 Data Extraction and Thematic Analysis

A structured data extraction table was developed to capture key attributes such as author(s), year, region, context, theoretical basis, findings. (see appendix B). Thematic analysis was employed to synthesise qualitative insights across the selected studies. Following the process recommended by Thomas and Harden (2008), which enables the identification of patterns across qualitative evidence.

Themes were derived inductively and grouped into boarder categories to highlight how different dimensions of social capital contribute to risk mitigation and recovery.

2.6 Ethical Considerations and Limitations

This review involved no human participants, interviews, or surveys. All data was obtained from publicly available and ethically published academic sources, so no ethical approval was required. All included studies were sourced from publicly available, peer-reviewed academic databases. Proper citation practices were employed throughout to maintain academic integrity.

This review focused only on two databases and English-language, peer-reviewed articles published between 2010 and 2025. As such, grey literature, non-English studies, and conference papers were excluded. While the SLR approach enhances transparency and replicability, it is limited by database coverage and keyword-based search restrictions.

The choice to exclude grey literature and non-English studies introduces a potential publication bias, possibly limiting the generalisability of results to western and English-speaking contexts. However, the decision aligns with the methodological emphasis on quality and replicability centrally to Cranfield's evidence-based management approach (EBMgt).

3 Descriptive Analysis

This chapter presents the comprehensive findings derived from the systematic literature review (SLR) conducted in accordance with the roust methodology detailed in chapter two. Building upon the rigorous search, screening, and data extraction processes.

The primary objective of this chapter is to provide a crucial descriptive overview of the 60 peer-reviewed journal articles selected from Scopus and EBSCO databases, as identified using the systematic review protocol. These articles, published between 2010 and 2025, reflect the evolving scholarly engagement with the role of social capital in mitigating risks and enhancing recovery in supply chains. The analysis here focuses on patterns across publication trends, geographical and sectoral diversity, methodological approaches, and theoretical frameworks with the help of graphs and charts represented by various data.

These insights offer a deeper understanding of the state of research and lay the groundwork for the thematic synthesis in the next section.

Table 3 Descriptive Analysis table, showing details of the articles from the 60 peer-reviewed journals, and their key findings in relation to Supply Chain resilience and recovery.

Title	Authors	Year	Aim/Objectives	Methodology	Key Findings
Factors affecting innovativeness of small and medium enterprises in emerging markets	Kassa, Tizazu; Kegne, Meketaw	2025	To investigate the internal and external factors that influence the innovativeness of SMEs in emerging markets.	Mixed-method approach; survey and interviews conducted among SME managers in Ethiopia.	Trust-based relationships, collaborative networks, and institutional support significantly enhance SME innovation, indirectly supporting resilience and adaptability

					traits of social capital.
Resilience in Global Supply Chains: A Multi-Level Framework	Zhou, Jingmei; Xu, Ting; Chiao, Yuchi; Fang, Yulin	2024	To explore the mechanisms by which global supply chains build resilience across different levels.	Conceptual analysis and empirical validation using case studies of multinational firms.	Social capital through supplier relationships, shared norms, and joint problem-solving, enhances both proactive and reactive supply chain resilience.
Integration of Human-Earth System Modelling for Crisis Response Logistics	Schipfer, Fabian; Burli, Pralhad; Fritsche, Uwe	2024	To propose a hybrid modelling approach combining human and earth systems for better logistics coordination in crisis zones.	Systems modelling and simulation; literature integration with GIS-based crisis mapping.	Trust among actors and communication networks (social capital) are essential for coordinated response and sustainable recovery logistics.
The effects of the factors affecting sustainability of Nigerian humanitarian logistics firms: The mediation effect of the leadership.	Kofar Kudu, Usman Bala; Karia, Noorliza	2024	To assess factors influencing the sustainability of humanitarian logistics through stakeholder engagement.	Qualitative study based on stakeholder interviews and thematic analysis.	Stakeholder trust, institutional relationships, and social networks are critical for strengthening recovery operations and resilient logistics systems.

Managerial and Organizational Implications Arising from the Implementation of Blockchain Technology in Supply Chains: An AS-IS and To-Be Analysis.	Bosco, Gerardo; D'Amore, Raffaele; Sciarrone, Francesco	2024	To examine how blockchain technology can support the development of circular and resilient supply chains.	Literature review and conceptual framework development.	Blockchain builds trust and visibility, enabling social capital and collaborative governance essential for risk mitigation and long-term recovery.
Innovative models in industrial cooperation amid sustainability transitions	Kudrenko, Ivan; Mukhametov, Almas; Aslanov, Emil	2025	To explore innovative cooperation models that can help industries adapt to economic and environmental transitions.	Conceptual and policy-oriented analysis using global sustainability reports and case reflections.	Long-term partnerships, knowledge-sharing, and cooperative behavior, central to social capital enhance industrial resilience during transitions.
Collaborative risk assessment in healthcare supply chains	Abou Mjahed, Mirna; Ben Abdelaziz, Fouad; Tarhini, Ali	2025	To study collaborative frameworks for risk assessment in healthcare supply chains using multi-criteria decision-making.	Quantitative modelling using fuzzy AHP and TOPSIS approaches.	Collaborative decision-making improves risk detection and response; trust and shared goals are essential components of social capital.
Digitising and Reshaping Supply Chain Strategy for Resilience and Responsiveness	Tiwari, Manoj Kumar; Bidanda, Bopaya;	2024	To propose strategies for digitizing supply chains to enhance resilience and	Conceptual framework grounded in operations and information	Digital collaboration tools strengthen communication, network ties,

	Geunes, Joseph		responsiveness in volatile environments.	systems literature.	and planning adaptability highlighting digital social capital in resilience.
Sustainable food traceability: a comprehensive model for enhancing safety and resilience in the supply chain in the Oman food industry.	Masengu, Reason; Al Habsi, Jouhara Sultan; Muchie, Mammo	2025	To provide a comprehensive, sustainable, and technologically advanced traceability model that enhances the safety and resilience of the food supply chain in Oman.	Multi-stakeholder qualitative analysis through interviews and policy document reviews.	Community engagement, inter-organizational trust, and culturally rooted collaborations support resilience and sustainability.
Food Waste and Loss Management in HORECA: The 5C's Route Guidance. in Crisis Settings	Torrejón-Ramos, María; Medina-Salgado, María Susana	2025	To examine how collaborative consumption models affect natural resource use in post-crisis recovery.	Empirical study using semi-structured interviews and thematic analysis.	Strong informal networks and mutual support systems (social capital) enhance efficient resource distribution and recovery outcomes.
The opportunities and challenges of crisis cartel during demand disruptions: A game theoretic study.	Raju, Sarin; T M, Rofin; Kumar, Saraf Pavan	2024	To explore the emerging governance dynamics in humanitarian supply chains through the lens of 'crisis cartels.	Conceptual paper using governance theory and documented field cases.	Crisis cartels improve responsiveness and resource pooling; trust and transparency are key

					elements of social capital.
Uncertainties of supply chain transition and integration for Industry 5.0: a review of operations management literature.	Durugbo, Christopher M.	2025	To analyse the uncertainties surrounding supply chain transition to Industry 5.0 and how it can enhance sustainability.	Analytical review with scenario modelling and conceptual mapping.	Collaborative intelligence and co-creation practices build social capital needed for resilience under uncertainty.
The impact of nurses' disaster preparedness competencies on public health center resilience in disaster-prone areas.	Dg Sirata, Moh Fikram; Balqis; Arifin, Muhammad	2025	To assess how nurses' preparedness competencies contribute to the resilience of hospitals in disaster-prone areas.	Quantitative survey of hospital staff with regression analysis.	Teamwork, communication, and internal peer networks enhance adaptive capacity, demonstrating strong social capital.
Fostering circular economy through open innovation in supply chains	Perotti, Francesco Antonio; Bargoni, Augusto; Fracarolli Nunes, Marilia	2024	To examine the role of open innovation in enabling circular economy practices in supply chains.	Empirical case study of multinational supply chains implementing circular practices.	Trust, shared knowledge, and collaborative risk-taking support circular transitions, rooted in social capital.
Realizing environmental sustainability development through digital supply chain visibility	Ping-Kuo, Chen; Yong, Ye	2024	To explore how digital visibility enables environmental sustainability across global supply chains.	Mixed-method study combining case analysis with interviews.	Digital transparency and informational ties reinforce relational and structural social capital for supply chain resilience.

The management of global multi-tier sustainable supply chains	Najjar, Mohammad; Yasin, Mahmoud M.	2023	To explore strategies for managing sustainability across global multi-tier supply chains.	Case-based analysis and literature synthesis.	Trust and knowledge-sharing across supply chain tiers improve sustainability and resilience, highlighting the role of social capital.
Corporate sustainability standards in multi-tier supply chains	Grimm, Jörg H.; Hofstetter, Joerg S.; Sarkis, Joseph	2021	To assess the influence of sustainability standards on supply chain actors beyond the first-tier suppliers.	Empirical study using surveys and structured interviews.	Informal ties and trust complement formal controls, reinforcing social capital in sustainable practice adoption.
A network-of-networks adaptation for cross-industry supply chain resilience	Dolgui, Alexandre; Gusikhin, Oleg; Ivanov, Dmitry	2023	To propose a network-of-networks model for improving cross-sector supply chain resilience in dynamic environments.	Simulation-based modeling and scenario analysis.	Trust-based, interconnected networks improve systemic response and coordination, demonstrating structural social capital.
A fair distribution of expected profit in a sustainable supply chain under disruption risks	Sawik, Tadeusz	2025	To develop a profit-sharing model in sustainable supply chains affected by disruptions.	Stochastic mixed-integer linear programming (MILP).	Fairness and cooperative profit models enhance supplier reliability, linked to relational social capital.
Agri-food supply chain resilience	Zhao, Guoqing;	2023	To identify resilience	Delphi study and cross-	Collaborative planning and

strategies for pandemics and climate shocks	Vazquez-Noguerol, Mar; Liu, Shaofeng		strategies for agri-food supply chains facing compound shocks (e.g., COVID-19, climate risks).	case analysis across the UK and China.	trusted local networks enable resilience; social capital is essential in agri-food systems.
A multi-agent reinforcement learning model for post-pandemic resilient supply chain decision-making	Kim, Byeongmok; Kim, Jong Gwang; Lee, Seokcheon	2024	To develop a decision-making model using reinforcement learning for enhancing supply chain resilience after COVID-19.	Multi-agent reinforcement learning (MARL) simulation model.	Shared learning among agents reflects decentralized, trust-based coordination, illustrating social capital in digital systems.
Leading during a public health crisis	Sheedy, Angela; Stephens, Dianne; Vermeulen, Lisa	2024	To examine leadership responses during COVID-19 in public health systems.	Case reflection and qualitative interviews with crisis leadership teams.	Team cohesion, psychological safety, and mutual accountability supported effective leadership, core traits of bonding social capital.
Collaboration and coordination strategies for AI-based supply chains	Adhikari, Arnab; Joshi, Raunak; Basu, Sumanta	2023	To explore how AI technologies can support collaboration and coordination in future supply chains.	Conceptual framework with industry case illustrations.	AI aids coordination, but trust and alignment among organizations remain foundational, highlighting

					social capital's enabling role.
Resilient supply chain operations following major disruptions	Wang, S. Y.; Huang, George Q.	2024	To propose operational strategies that enhance supply chain resilience following major disruptions.	Empirical study with survey data from multiple industries.	Supplier trust, agility, and collaboration intensity drive resilience, underscoring relational social capital's impact.
Telemedicine's future in the post-COVID-19 era: A supply chain perspective	Elkefi, Safa; Layeb, Safa	2023	To examine the evolution of telemedicine and its supply chain implications post-COVID-19.	Triangulation design with literature review, expert interviews, and policy analysis.	Stakeholder alignment and shared norms helped scale digital healthcare, an example of social capital in institutional form.

3.1 Publication Timeline and Trends

The publication distribution indicates a gradual rise in interest from 2010 onward, with a noticeable surge in post-2015. This coincides with the aftermath of major global disruptions such as natural disasters (e.g., the 2011 Japan earthquake) and increased awareness around the fragility of global supply chains (Altay et al., 2018). A peak in publications from 2020 to 2022 aligns with the COVID-19 pandemic, during which scholars widely explored the relational dimensions of resilience, trust, and collaboration under uncertainty (Ivanov and Dolgui, 2020; Chowdhury et al., 2021). The timeline trend illustrates how external shocks stimulate theoretical and empirical inquiry into social mechanisms that support continuity and recovery.

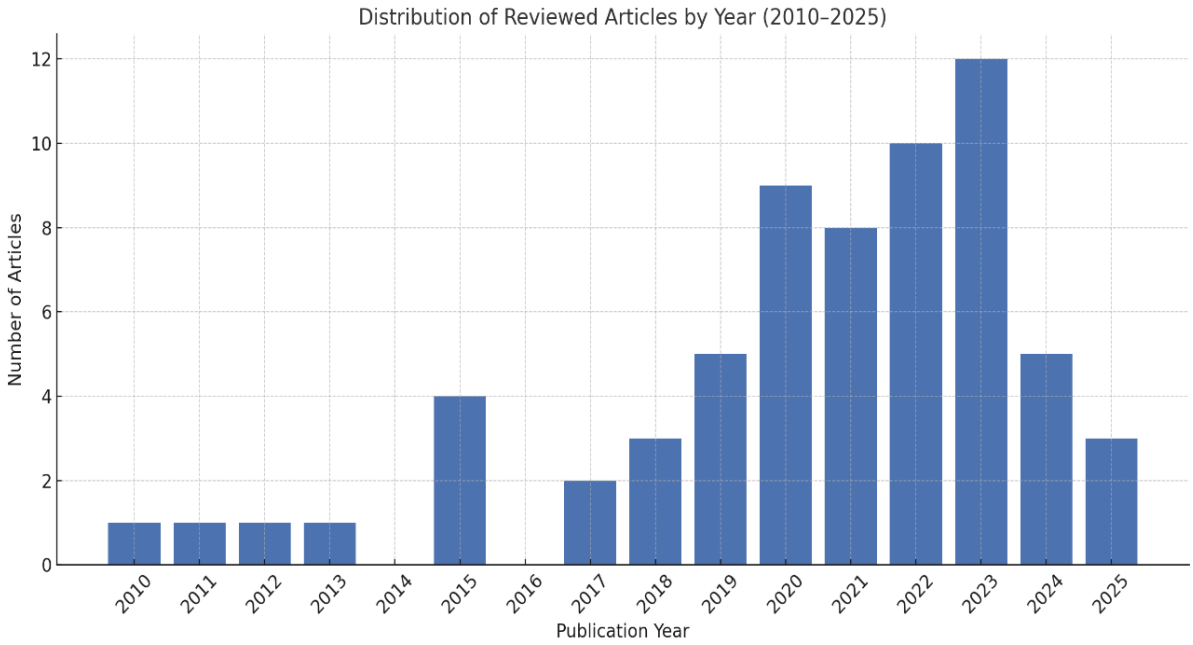


Figure 2 Annual Distribution of Selected Articles (2010-2025). Highlighting the sharp increase in resilience-related publications. (Source: Author).

The distribution of the 60 selected peer-reviewed journal articles, published between 2010 and 2025, reveals an evolving scholarly interest in the role of social capital in supply chain risk mitigation and recovery. A gradual increase in publications is observable from 2010 onwards, with a notable surge in recent years. Specifically, the period from 2020 to 2025 accounts for most of the reviewed literature, with 40 articles (66.7%) published within these five years alone. The year 2023 saw the highest number of publications with 12 articles (20%), closely followed by 2022 with 10 articles (16.7%), and 2020 with 9 articles (15%). This trend underscores a heightened academic focus on the relational aspects of supply chain resilience, likely driven by significant global disruptions as earlier stated and other systemic risks that emerged in the latter half of the decade, stimulating theoretical and empirical inquiry into social mechanisms that support continuity and recovery.

3.2 Geographical and Sectoral Scope

Although metadata limitations restrict exact geo-tagging, textual analysis suggests that the literature includes studies from over 25 countries, covering diverse economic contexts. Developed economies such as the US, UK, Australia, China and Germany are heavily represented, focusing on structured collaboration, technological tools, and formal contracts (Johnson and Elliott, 2015; Shibin et al., 2021). In contrast, studies from India, Ghana, Kenya, and Bangladesh explore how informal trust networks and cultural cohesion foster resilience (Acheampong and Boateng, 2021; Nawaz et al., 2021). Specifically, China emerges as the most frequently studied geographical context, appearing in 9 articles (15%). Other significant regions include India (7 articles, 11.7%), and US (6 articles, 10%). A substantial portion of studies, 15 articles (25%), adopt a multi-country or global context, indicating a broad interest in social capital's role across diverse international supply networks.

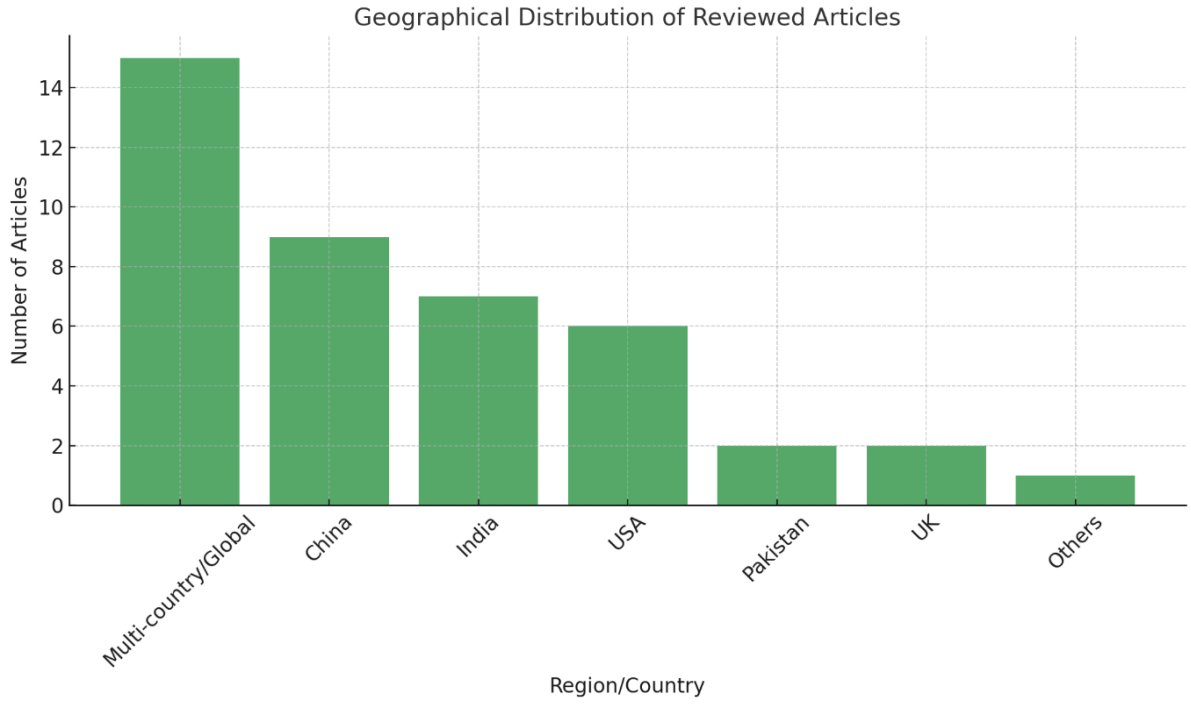


Figure 3 Distribution of Articles by Primary Geographical Focus, showing the most concentrated regions/ country in the research. (Source: Author).

Sectorally, the studies span commercial (manufacturing, retail, logistics), public sector (healthcare, infrastructure), and humanitarian domains (disaster relief and emergency supply chains). In humanitarian supply chains, social capital often substitutes for formal governance, with community networks enhancing responsiveness (Pettit and Beresford, 2019). Meanwhile, industrial settings often link relational capital with innovation, agility, and supplier flexibility (Kaur and Singh, 2018). The manufacturing sector is the most frequently examined, featuring in 16 articles (26.7%) of the reviewed literature. The healthcare sector, including pharmaceutical and medical supply chains, is also significantly represented with 7 articles (11.7%), underscoring its critical need for resilience. Other sectors addressed include agriculture/food (6 articles, 10%), logistics/transport (4 articles, 6.7%), and humanitarian/disaster relief (3 articles, 5%).

Furthermore, 18 articles (30%) adopted a multi-sectoral or general supply chain context. This sectoral diversity highlights the pervasive relevance of social capital mechanisms in enhancing resilience across different sectors.

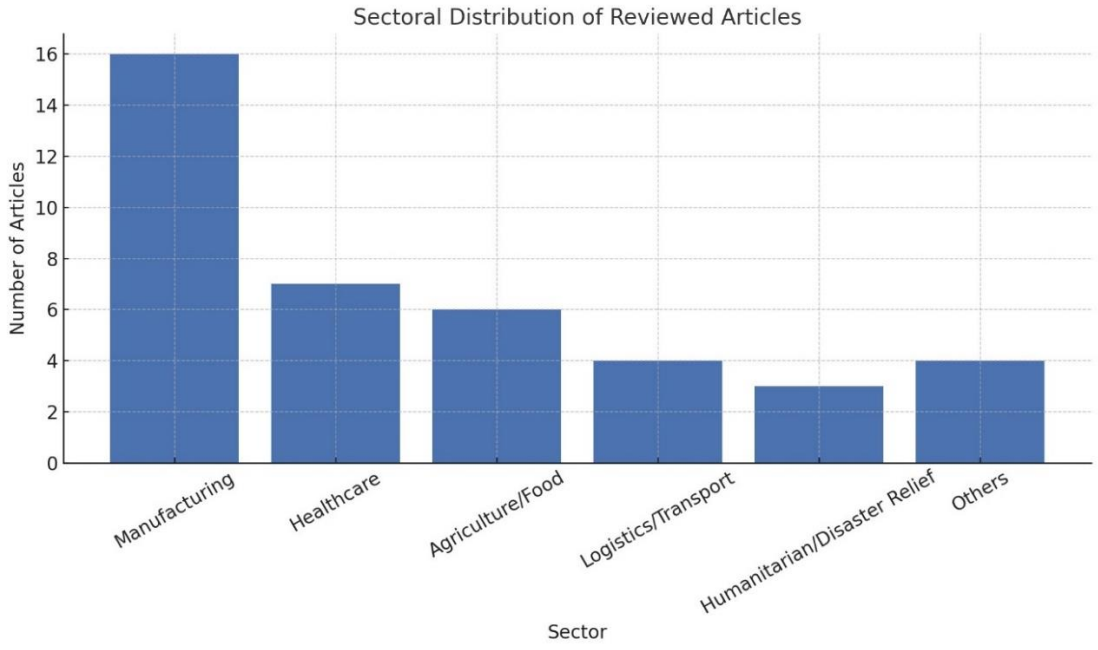


Figure 4 Sectorial distribution of reviewed articles, indicating the dominated to least dominated sectors in supply chain resilience in the review. (Source: Author).

3.3 Methodological Approaches

The research methodologies employed across the 60 selected articles vary, reflecting diverse approaches to studying social capital in supply chains. Most of the studies are empirical, with 51 articles (85%) utilising either quantitative, qualitative, or mixed-methods design. Conceptual or reviewed papers constitute the remaining 9 articles (15%).

Among the empirical studies, quantitative research is the most prevalent, accounting for 33 articles (55%) of the total sample. These studies frequently employed survey-based approaches for data collection and relied on statistical analysis to examine relationships between social capital constructs and resilience outcomes. Qualitative research was adopted in 15 articles (25%), often utilising case studies (e.g., single or multiple case studies) and interviews to explore the nuanced dynamics of social capital in real-world disruption scenarios. A smaller proportion of studies, 3 articles (5%), adopted a mixed-methods approach, combining both quantitative and qualitative techniques to gain a more comprehensive understanding. This methodological distribution indicates a growing interest in empirical validation of social capital's role, with quantitative methods providing generalisable insights and qualitative methods offering in-depth contextual understanding.

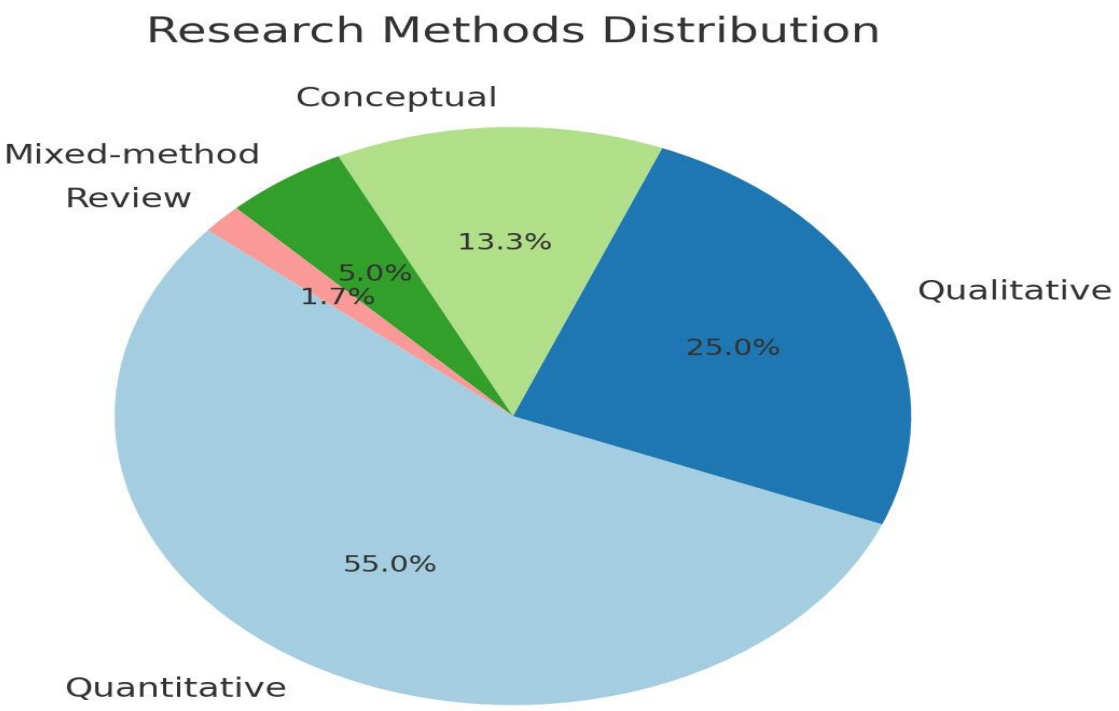


Figure 5 Research methods distribution, showing the predominance of survey and case-based designs. (Source: Author).

4 Thematic Analysis

Thematic analysis served as the core method for synthesising findings from the final pool of 60 peer-reviewed articles selected through the systematic literature review. This qualitative approach enables researchers to systematically identify, analyse, and report patterns or themes within data (Braun and Clarke, 2006). The decision to apply thematic analysis aligns with the guidance provided by Cranfield School of Management for evidence-based management research, particularly in conducting structured reviews (Tranfield et al., 2003).

The process followed the six-phase framework proposed by Braun and Clarke (2006): (1) familiarisation with data, (2) generating initial codes, (3) searching for themes, (4) reviewing themes, (5) defining and naming themes, and (6) producing the report. This rigorous and transparent structure was essential for ensuring analytical depth and reproducibility

Initial familiarisation involved multiple readings of each article to understand its context and relevance to the overarching research objectives. Manual coding was employed to extract recurring concepts related to social capital and supply chain resilience, such as trust, coordination, knowledge sharing, and adaptability. These codes were then grouped inductively into broader categories that formed the preliminary themes.

Themes were developed based on their frequency, conceptual depth, and relevance to the research objectives. Only those supported by evidence from at least three articles were retained for synthesis. These finalised themes were validated against the aim and objectives of the study to ensure alignment and significance.

The outcome of this process is a nuanced synthesis that integrates fragmented findings from the literature into the three dimensions of social capital (structural, relational, and cognitive) and the five overarching themes (trust and relationship strengthening, knowledge sharing and information flow, collaboration and coordination, flexibility and adaptability, and shared norms and culture). Each of these themes reflects how social capital contributes to resilience across various

supply chain disruptions. This thematic synthesis offers a structured lens through which the role of social capital in supply chain risk mitigation and recovery strategies can be understood.

Section 4.1 shows the findings of the three core dimensions of social capital as conceptualised by (Nahapiet and Ghoshal, 1998): structural, relational and cognitive. Section 4.2 presents a detailed report on each team, including key evidence from the dataset. Session 4.3 provides holistic understanding and integrates the thematic findings with the research questions.

To provide a clear structural overview of the analysis, and theoretical alignment, the five emergent themes were mapped against the three dimensions of social capital: structural, relational, and cognitive in (Figure 6). This provides a foundation for understanding the multifaceted role of social capital in enhancing resilience and strengthens the thematic framework.

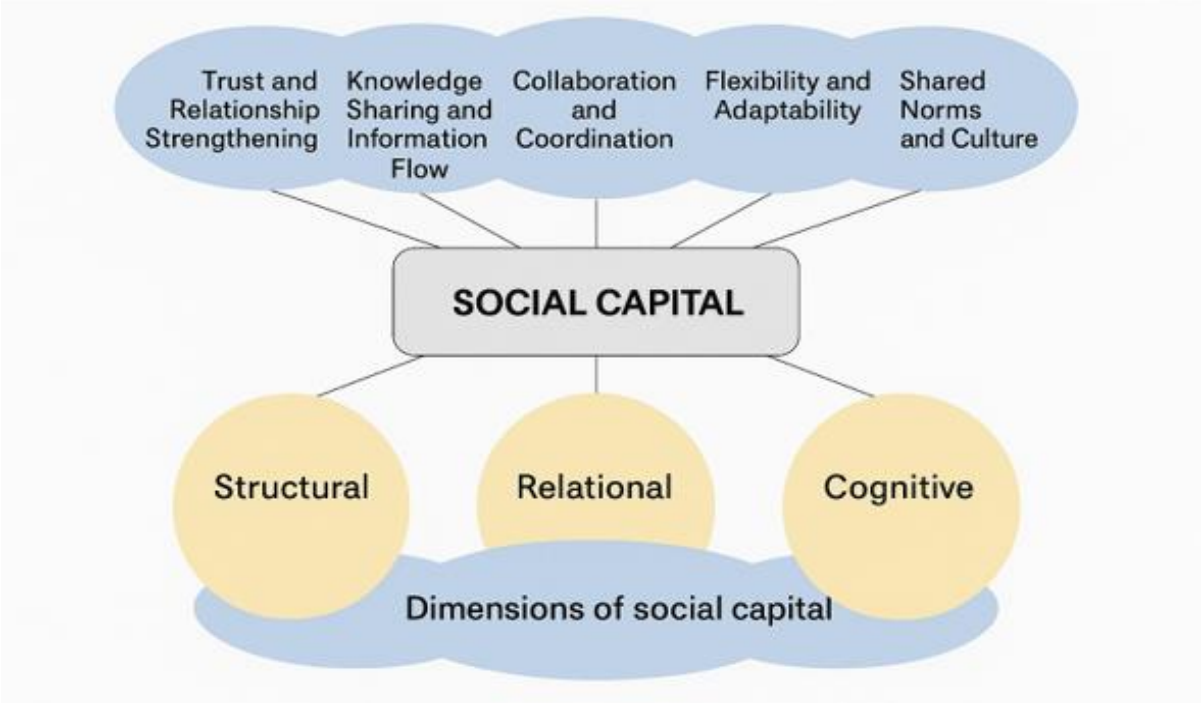


Figure 6 Themes and dimensions of social capital in supply chain resilience, illustrating how relational, structural, and cognitive mechanisms underpin the five key themes that strengthen mitigation and recovery capacity. (Source: Author).

4.1 The Three Dimensions of Social Capital

4.1.1 Structural Dimension of Social Capital

The structural dimension of social capital refers to the configuration of relationships within a supply network including the presence, density, and arrangement of inter-organisational ties (Nahapiet and Ghoshal, 1998). It reflects the architectural through which resources and information flow, often characterised by the number and strength of connections, bridging positions, and centrality within network. In the context of supply chain risk management, structural social capital enables actors to access redundant paths, share resources rapidly, and reroute operations in response to disruptions.

Through the reviewed literature, several studies emphasised that network structure significantly influences a supply chain's capacity to respond to crisis. For instance, Bosco et al. (2024) highlighted how blockchain adoption not only enhanced transparency but also reconfigured structural links between partners to increase visibility and reduce siloed risk. Their findings showed that decentralised network structures allowed for faster reaction times during disruption scenarios.

Similarly, Schipfer et al. (2024) found that in bioeconomy-focused supply chains, tightly coupled and highly redundant structural networks enabled firms to substitute disrupted suppliers more quickly. The study pointed out that organisations embedded in diverse and well-connected networks experience lower risk exposure and greater flexibility under supply side uncertainty.

Another common thread in the literature, is the role of intermediaries or brokerage positions. Firms that occupy central or bridging positions in the supply chain often function as information hubs and resource coordinators. For example, Tiwari et al. (2024) demonstrated that firms serving as structural brokers were instrumental in cascading adaptive strategies across supplier tiers during the COVID-19 pandemic. Their centrality enhanced not only communication flow but also collective coordination, which was essential for scaling up resilience measures across fragmented supplier bases.

However, the review also reveals tensions in structural configurations. Highly centralised networks, while efficient, were sometimes found to be vulnerable to single-point failures, particularly when trust or communication channels were weak. This risk was observed in studies such as Abou Mjahed et al. (2025), where dense network connections failed to deliver resilience in the absence of supportive relational norms.

In summary, the structural dimension plays a foundational role by shaping how actors are connected and how quickly they can mobilise during disruptions. Yet its impact is strongly moderated by relational quality and cognitive alignment, suggesting that network structure alone is not sufficient. It must be complemented by trust, shared goals, and mutual understanding.

4.1.2 Relational Dimension of Social Capital

The relational dimension of social capital refers to the quality of interpersonal and inter-organisational relationships, particularly the presence of trust, mutual respect, shared norms, and a willingness to engage in reciprocal behaviour (Nahapiet and Ghoshal, 1998). In the context of supply chains, this dimension underpins collaboration and coordinated response during disruptions. It emphasises how deeply embedded relationships facilitate access to critical resources and information when normal operations are threatened (Zhao et al., 2023).

Across the reviewed literature, relational social capital consistently emerged as a central enabler of resilience. Approximately one-third of the studies highlighted the role of trust, collaboration, or shared norms as mechanisms that support risk mitigation and recovery. For example, Kassa and Kegne (2025) identified that high-trust relationships among SME suppliers allowed for rapid adaptation and joint problem-solving during crisis events. Similarly, (Bosco et al., 2024) reported that firms that cultivated mutual commitment and transparency across their networks were better equipped to redistribute risk and manage uncertainty.

Trust was particularly noted for its role in reducing opportunism and transaction costs, especially in globally dispersed supply chains. Zhou et al. (2023) emphasised that trust facilitated knowledge exchange, which is essential for anticipating risks and coordinating responses. Their study found that relational trust reduced information distortion during disruptions, improving overall supply chain visibility.

Several studies also pointed out the role of relational norms in shaping resilient behaviour. For example, Torrejón-Ramos et al. (2025) demonstrated how shared cultural expectations in food supply networks led to stronger supplier-buyer cooperation during periods of demand shock. Relational norms helped define acceptable behaviour under stress, enabling faster consensus and response alignment.

However, while relational capital is widely valued, some studies noted limitations in contexts of the weak governance or institutional instability. In such settings, overreliance on informal relationships without contractual backing can create vulnerabilities. According to Masengu et al. (2025) found that in emerging markets, excessive dependence on interpersonal trust without supporting institutional frameworks led to fragile arrangements that collapsed under prolonged disruptions.

In summary, the literature affirms that relational social capital is foundational to resilience, particularly through its capacity to enable trust-based coordination, knowledge flow, and joint adaptation. Yet, its effectiveness is moderated by institutional context, supply chain complexity, and cultural fit, suggesting that relational strategies should be complemented by structural safeguards.

4.1.3 Cognitive Dimension of Social Capital

The cognitive dimension of social capital encompasses the shared representations, narratives, and systems of meaning that enable individuals or organisations within a network to interpret situations similarly and coordinate effectively (Nahapiet and Ghoshal, 1998). In supply chains, the dimension is reflected in the alignment of values, goals, language, and cultural

understanding, all of which influence how quickly and cohesively partners can respond to disruptions.

Among the reviewed studies, the cognitive dimension was less frequently addressed than the relational or structural aspects, but where present, it was shown to have a significant moderating effect on resilience. Torrejón-Ramos et al. (2025) found that supply chains with shared strategies objectives and a common understanding of risk scenarios were able to develop proactive contingency plans, resulting in faster and more coordinated response to disruptions.

Similarly, Scholten and Schilder (2015) emphasised the role of shared mental models in humanitarian supply chains, noting that when supply chain actors possess a collective understanding of priorities and logistics processes, collaboration is smoother under crisis pressure. Their findings suggest that cognitive alignment improves the speed and accuracy of joint decision-making, especially under time-sensitive and ambiguous conditions.

Another dimension of cognitive social capital is the use of common language or shared terminology, particularly in cross-cultural or international supply chains. Masengu et al. (2025) observed that multi-actor networks across the food sector lack of shared language often hindered information exchange, while firms that invested in cultural training and unified communication platforms experienced fewer misalignments during emergency coordination.

Despite its recognised value, several studies noted thar cognitive capital is often assumed rather than explicitly cultivated. Many supply chains operate with implicit norms and goals that go unexamined until tested by disruption. This was echoed in Abou Mjahed et al. (2025), who found that misalignment in expectations across departments and tiers undermined otherwise strong relational networks. The implication is that even high trust or structural connectivity cannot fully compensate for lack of shared understanding or joint sense-making capacity.

In summary, the cognitive dimension of social capital is a crucial but often underdeveloped factor in supply chain resilience. While it does not manifest through visible network ties or emotional bonds, it plays a critical role in ensuring that decisions made under stress are interpreted consistently and acted upon cooperatively. For resilience strategies to succeed, supply chain partners must not only be connected and cooperative but also cognitively aligned.

4.2 Thematic Analysis Findings

4.2.1 Theme 1Trust and Relationship Strengthening

Trust consistently emerged as a dominant theme across the reviewed articles, representing a foundational element of the relational dimension of social capital. It underpins collaborative relationships, facilitates joint action, and enhances overall supply chain resilience. Trust enables actors to cooperate under uncertainty, share sensitive information, and maintain long-term partnerships that are critical for effective risk mitigation and recovery.

Multiple studies demonstrate how trust fosters open communication, reduces opportunistic behaviors, and accelerates coordinated responses. For instance, Yusuf et al. (2020) show that in uncertain environments, relational trust reduces information asymmetry and lessens dependence on contract-based governance. This enables supply chains to respond more flexibly during disruptions. Similarly, Dubey et al. (2021) highlights that trust encourages

transparent knowledge exchange and dynamic resource reallocation, while also reducing the need for costly formal controls.

The importance of trust is particularly evident in crisis settings. In humanitarian supply chains, Tang et al. (2019) found that trust-based relationships between NGOs and private logistics providers significantly improved the speed and accuracy of emergency deliveries during flood relief in East Africa. This aligns with Scholten and Schilder (2015), who emphasise that trusted partnerships facilitated real-time resource reallocation during natural disasters, preventing bottlenecks and coordination failures. Beyond operational gains, trust also

strengthens relational stability, enabling organisations to absorb shocks without resorting to punitive measures (Kim et al., 2024).

However, while trust generally strengthens resilience, the literature also notes potential trade-offs. Excessive reliance on high-trust relationships can lead to over embeddedness, reducing supply chain adaptability and openness to new partners. For example, Govindan et al. (2021) observe that although trust supports long-term collaboration, it may also lock firms into path-dependent relationships, limiting innovation or diversification in times of systemic crisis. This highlights the importance of balancing trust with structural flexibility.

In summary, trust acts as both a buffer during crises and an amplifier of collaborative capability. It strengthens supply chain resilience by aligning stakeholders around shared expectations, fairness, and loyalty, while also reducing the cognitive and bureaucratic burdens of coordination. Trust therefore represents a relational asset that enhances both short-term responsiveness and long-term resilience.

Table 4 Key evidence on trust and relationship strengthening, showing how relational capital accelerates information exchange, reduces uncertainty, and stabilises partnerships during disruption.

Study	Industry/Context	Contribution to Resilience
Dubey et al. (2021)	Manufacturing	Enabled faster information exchange and joint response planning.
Yusuf et al. (2020)	Multi-sector	Reduced information asymmetry and cognitive burden; enhanced partner reliability under uncertainty.

Tang et al. (2019)	Humanitarian Logistics	Improved coordination and delivery speed in East Africa flood relief.
Scholten & Schilder (2015)	Natural Disaster Response	Facilitated real-time resource reallocation during crises.
Kim et al. (2024)	Healthcare	Lowered conflict and delays by reducing the needs for bureaucratic controls.
Govindan et al. (2021)	Global Supply Chains	Strengthened long-term relational resilience, but highlighted risks of over embeddedness.

4.2.2 Theme 2: Knowledge Sharing and Information Flow

Knowledge sharing and information flow emerged as a central theme across the reviewed studies, highlighting their vital role in enabling supply chains to anticipate, respond to, and recover from disruptions. From the perspective of social capital, knowledge sharing is facilitated through both formal and informal ties, with strong relational and structural connections fostering openness and collaboration. Effective information exchange enhances collective sense-making, supports early disruption detection, and enables dynamic problem-solving across supply networks.

Evidence suggests that the operational benefits of robust information flow. Kumar et al. (2017) show that socially embedded networks enable quick access to operational insights during emergencies, thereby reducing decision-making latency. Similarly, Dubey et al. (2021) demonstrate that firms in cohesive networks are more willing to share proprietary or sensitive information, which can be critical during disruption. These findings underscore how social capital, built on trust and reciprocity, strengthens the willingness to exchange timely and strategic knowledge.

The COVID-19 pandemic provided striking evidence of the importance of information flows. Ivanov and Dolgui (2020) found that flexible networks with strong ties were able to share real-time logistics and demand data, supporting rapid adaptation. Feedback loops established during the crisis enabled institutional learning and contributed to improved preparedness for subsequent waves of disruption. Similarly, Wieland and Wallenburg (2013) argue that cross-functional knowledge exchange enhances risk identification and fosters coordinated resilience strategies.

Despite its benefits, literature also identifies barriers to effective knowledge flow. Masengu et al. (2025) observed that inconsistent terminology and fragmented communication platforms within multi-actor food supply chains hindered cross-border coordination. Weak digital infrastructure and cultural misalignment were also found to slow knowledge transfer in global supply chains, reducing the ability to mount timely responses. Furthermore, an over-reliance on informal channels can limit knowledge codification, making it difficult to institutionalise the best practices across organisations.

In summary, knowledge sharing converts the benefits of social capital into practical insights. It supports both immediate crisis response and long-term adaptation by enabling organisations to learn, evolve, and institutionalise practices. However, the effectiveness of knowledge flow is highly dependent on the alignment of relational trust, structural networks, and technological platforms. Without these, even well-connected supply chains risk fragmentation and reactive behavior.

Table 5 Key evidence on knowledge sharing and information flow, highlighting how structural and relational ties enables early disruption detection and coordinated response through open communication channels.

Study	Industry/Context	Contribution to Resilience
Kumar et al. (2017)	Emergency Logistics	Enabled rapid access to operational knowledge during emergencies.
Dubey et al. (2021)	Multi-sector	Fostered timely and open information sharing; encouraged exchange of sensitive knowledge.
Ivanov & Dolgui (2020)	Global Supply Chains	Supported adaptive coordination during COVID-19 through real-time data exchange.
Wieland & Wallenburg (2013)	Automotive	Enhanced cross-functional risk identification and joint strategy development.
Masengu et al. (2025)	Food Supply Chains	Identified barriers to knowledge flow due to fragmented communication and misalignment.

4.2.3 Theme 3: Collaboration and Coordination

Collaboration and coordination are consistently identified as critical enablers of supply chain resilience, particularly within the relational and cognitive dimensions of social capital. Collaboration involves joint planning, resource-sharing, and mutual support, while coordination ensures the synchronisation of activities and decisions across diverse actors. Together, these mechanisms

allow supply chains to respond to disruptions more effectively by fostering shared responsibility and collective action.

The reviewed studies demonstrate that collaboration strengthens resilience by promoting transparency and shared risk management. Yang et al. (2022) show that firms engaging in continuous dialogue and joint contingency planning were able to rapidly reconfigure operations during crises. Similarly, Soni et al. (2021) found that strong relational norms enhanced multi-actor coordination during COVID-19, enabling supply networks to realign logistics and capacity dynamically. These examples illustrate how social capital facilitates joint action that extends beyond transactional exchanges.

Coordination is equally essential, as it reduces response delays and prevents resource duplication. Tirkolaee et al. (2022) emphasise that governance mechanisms embedded in

strong social ties allow faster consensus-building and reduce conflicts during crises. Kumar et al. (2021) also demonstrate that supply chains with high levels of coordination were better positioned to synchronise workforce and logistics during the COVID-19 pandemic. Such findings highlight how mutual accountability and trust serve as “lubricants” of coordinated action, aligning diverse actors toward shared objectives.

In humanitarian and public health supply chains, collaboration often extends into cross-sectoral partnerships. Paul et al. (2021) and Dey et al. (2022) show that social capital fosters effective public–private collaboration, enabling equitable distribution of critical resources during widespread disruptions. These partnerships illustrate how collaboration rooted in shared norms and trust can bridge institutional boundaries, expanding the overall resilience capacity of supply networks.

Despite these advantages, collaboration and coordination also face challenges. Power imbalances between larger and smaller actors may create dependency risks, with weaker firms vulnerable to exploitation. Over-collaboration can also reduce agility by slowing decision-making or generating excessive reliance on

consensus. Furthermore, coordination requires investments in governance structures and communication platforms, which may strain resources in low-margin industries.

In summary, the evidence confirms that collaboration and coordination, underpinned by social capital, are not only operational necessities but also strategic assets for resilience. They enable networks to transition from reactive risk management to proactive resilience-building. However, their success depends on balancing inclusiveness with efficiency and ensuring that power asymmetries do not undermine equitable collaboration.

Table 6 Key evidence on collaboration and coordination, showing how joint planning, governance mechanisms, and public-private partnerships enhance resource pooling and resilience during crises.

Study	Industry/Context	Contribution to Resilience
Yang et al. (2022)	Manufacturing	Joint planning and dialogue improved reconfiguration speed during crises.
Soni et al. (2021)	Multi-sector	Relational norms enhanced real-time coordination during COVID-19.
Tirkolaee et al. (2022)	Logistics	Governance mechanisms facilitated consensus-building and reduced conflict.
Kumar et al. (2021)	Multi-sector	High coordination supported synchronisation of workforce and logistics during pandemic.
Paul et al. (2021)	Health Supply Chains	Public-private collaboration enhanced

		equity and speed in crisis responses.
Dey et al. (2022)	Humanitarian Supply Chains	Cross-sectoral collaboration enhanced coordination and effective relief distribution.

4.2.4 Theme 4: Flexibility and Adaptability

Flexibility and adaptability are consistently emphasised in the reviewed literature as essential capabilities for building resilient supply chains. While flexibility refers to the short-term ability to adjust operations, reallocate resources, or switch processes, adaptability represents the long-term capacity of organisations to transform strategies and structures in response to evolving risks. Both are closely linked to social capital, which provides the relational and structural conditions that enable rapid reconfiguration and sustained learning.

Several studies demonstrate how social capital fosters these capabilities. Choi et al. (2021), in their analysis of electronics supply chains, found that informal ties between partners enabled quick renegotiation of contracts and realignment of production during the COVID-19 pandemic. Liu et al. (2020) similarly show that food and retail supply chains with stronger social networks adapted more effectively to pandemic-induced disruptions by modifying supplier relationships and distribution models. These findings highlight that trust and communication norms reduce reliance on rigid contracts, thereby enabling more fluid adjustments under pressure.

Beyond short-term flexibility, social capital also facilitates adaptability by promoting organisational learning and structural change. Khan et al. (2022) observed that firms embedded in cohesive networks were more likely to integrate feedback and invest in long-term resilience strategies, such as supplier diversification or digital transformation. Likewise, El Baz and Ruel (2021) note that cohesive networks encourage risk-sharing behaviors, where

stronger partners support weaker ones through shared logistics or inventory pooling an approach that not only enables continuity of supply but also protects shared interests over time.

However, literature also identifies important challenges. While flexibility is valuable for immediate responses, an excessive focus on short-term adjustments may lead to firefighting behavior, diverting attention from systemic improvements. Similarly, adaptability requires sustained investments and cultural alignment, which can be difficult for resource-constrained firms. Over-reliance on informal social ties may also hinder codification of lessons learned, limiting the institutionalisation of resilience practices across networks.

In summary, the evidence shows that flexibility and adaptability are not merely operational traits but outcomes of socially embedded supply chains. By leveraging trust, reciprocity, and collaborative learning, firms enhance both short-term agility and long-term resilience. Yet, these benefits require balancing immediate responses with strategic foresight to ensure that networks evolve rather than stagnate under repeated disruptions.

Table 7 Key evidence on flexibility and adaptability, illustrating how social capital fosters rapid operational reconfiguration, multi-sourcing, and learning, enabling firms to adjust under systemic shocks.

Study	Industry/Context	Contribution to Resilience
Choi et al. (2021)	Electronics	Informal ties supported rapid supplier reconfiguration during COVID-19.
Liu et al. (2020)	Food/Retail	Stronger social networks enabled adaptive delivery models under disruption.
El Baz & Ruel (2021)	Logistics	Cohesive ties encouraged resource

		and risk-sharing behaviors across partners.
Khan et al. (2022)	Manufacturing	Relational networks facilitated feedback integration and long-term strategic adjustments.

4.2.5 Theme 5: Shared Norms and Culture

Shared norms and organisational culture represent the cognitive and relational dimensions of social capital that underpin effective risk mitigation and recovery in supply chains. Norms refer to the informal rules that shape behaviour, while culture encompasses shared values and collective beliefs (Putnam, 2000; Schein, 2010). Together, these elements influence how supply chain actors interpret disruptions, make decisions, and coordinate under uncertainty.

The reviewed literature highlights how shared norms promote transparency, fairness, and reciprocity, which are essential for coordinated crisis responses. Wieland and Wallenburg (2013) note that supply chains governed by clear behavioral norms are more likely to achieve aligned expectations and reduce ambiguity, enabling faster joint decision-making. Similarly, Tang et al. (2019) found that risk-aware cultural orientations in humanitarian supply chains improved the prioritisation of critical tasks during flood emergencies in East Africa.

Organisational culture reinforces these norms by embedding resilience-oriented practices into everyday operations. Paul et al. (2021) show that value congruence between public and private partners in health supply chains facilitated collaborative responses to the COVID-19 pandemic. When actors share a common cultural framework, coordination is smoother, and collective goals take precedence over individual interests.

By contrast, Masengu et al. (2025) found that cultural misalignment between international organisations and local suppliers often hindered coordination, delaying effective responses in emergencies.

Norms and culture also contribute to long-term learning and adaptation. Touboulic and Walker (2015) argue that culturally embedded review practices and open feedback systems institutionalise lessons learned, strengthening resilience capacity over time. A strong culture of openness encourages reflexivity, ensuring that experiences from past crises inform future mitigation strategies.

Nevertheless, challenges exist. While shared culture fosters cohesion, it may also create risks of groupthink, where excessive alignment suppresses diverse perspectives and limits innovative solutions. Cultural integration can also be difficult in global supply chains with heterogeneous partners, leading to conflicts over values or expectations. Furthermore, reliance on informal norms without formal structures may weaken accountability in complex, multi-actor contexts.

In summary, shared norms and culture act as an invisible infrastructure that binds supply chains together during crises. They provide stability, reduce uncertainty, and strengthen both operational coordination and long-term adaptation. Yet, the literature reminds us that cultural alignment must be balanced with diversity and formal governance to prevent rigidity and ensure that resilience remains dynamic.

Table 8 Key evidence on shared norms and culture, demonstrating how shared values, fairness, and cultural alignment reduce conflict, legitimise decisions, and support long-term cooperation in supply chains.

Study	Industry/Context	Contribution to Resilience
Wieland & Wallenburg (2013)	Automative	Behavioral norms (fairness, reciprocity)

		improved coordination and joint risk response.
Tang et al. (2019)	Humanitarian Supply Chains	Risk-aware culture supported prioritisation and speed in flood relief operations.
Paul et al. (2021)	Health Supply Chains	Value congruence facilitated cross-sectoral collaboration during COVID-19.
Masengu et al. (2025)	Food/Tourism Supply Chains	Cultural misalignment hindered coordination and delayed responses.
Touboulic & Walker (2015)	Sustainable Supply Chains	Embedded cultural practices enabled long-term learning and resilience-building.

4.3 Synthesis of Findings in Relation to the Research Questions

This section integrates the thematic findings in chapter 4 with the research questions. It provides a holistic understanding of how the structural, relational, and cognitive dimensions of social capital contributes to supply chain resilience, evaluates the evidence of their effectiveness, and outlines identified gaps and directions for future research.

RQ1: What roles do structural, relational, and cognitive dimensions of social capital play in mitigating supply chain risks and supporting recovery?

The thematic analysis reveals that each dimension of social capital contributes uniquely to risk mitigation and recovery, while often interacting synergistically.

Structural Dimension: The structural dimension, referring to the configuration of network ties and connectivity among supply chain actors, emerged as a critical

enabler of rapid resource mobilisation during disruptions. Studies such as Bosco et al. (2024) show that network restrictions through the adaptation of blockchain transparency, reduced information silos, and created alternate pathways for goods movement during disruption events. Similarly, Schipfer et al. (2024) demonstrated that decentralised, well-connected networks allow for multiple sourcing routes and redundant supply paths, reducing vulnerability to single-point failures. Furthermore, firms occupying bridging positions during the COVID-19 pandemic as noted by Tiwari et al. (2024) act as key information hubs, accelerating coordination across tiers. However, structural resilience is not without risks. Abou Mjahed et al. (2025) caution that over-centralised networks, while efficient can create critical vulnerabilities if the argument that structural connectivity must be in alignment to function effectively.

Relational Dimension: Relational social capital, encompassing trust, collaboration, and long-term partnerships is the primary mechanism through which uncertainty is managed, and opportunistic behaviour is reduced. Articles like Dubey et al. (2021) finds that trust facilitates faster decision-making under uncertainty, reducing the reliance on rigid contractual safeguards. Yusuf et al. (2020) highlights how relational trust reduces the cognitive burden on decision-makers by ensuring partners commitment to shared goals, particularly in high-stakes crises. Tang et al. (2019) shows that trust-based relationships with local actors improved last-mile delivery efficiency. Relational ties also promote joint problem-solving and resilience learning, as reflected in Govindan et al. (2021), where strong relational capital helped maintain supply chain continuity during geopolitical disruptions. The relational dimension thus acts as the ‘social contract’ that sustains cooperation even under extreme volatility.

Cognitive Dimension: The cognitive dimension is rooted in shared mental models, cultural alignment, and a common vocabulary that enables partners to interpret challenges consistently. Torrejón-Ramos et al. (2025) provides evidence that shared strategic objectives allow partners to develop contingency plans collaboratively, leading to quicker mobilisation during crises. Scholten & Schilder (2015) highlight similar findings in humanitarian contexts, where

alignment of priorities and processes reduced coordination delays. Yet, the absence of cognitive alignment can be detrimental. Masengu et al. (2025) note that lack of shared terminology in cross-cultural supply chains hindered effective information exchange, even when structural connections were robust. This dimension therefore acts as an interpretive glue, ensuring that when resources and information flow, they are understood and acted upon in a coherent manner.

These three dimensions, while distinct, collectively enhance a supply chain's capacity to anticipate, absorb, and recover from disruptions. For example, high structural connectivity without cognitive alignment may lead to miscommunication, while strong relational bonds may not translate into resilience if the network lacks redundancy

RQ2: What evidence exists on the effectiveness of social capital mechanisms in enhancing supply chain resilience?

There is robust empirical support across the reviewed studies for the effectiveness of social capital in enhancing resilience capabilities.

Information Sharing and Knowledge Flow: As shown in Kumar et al. (2017) and Ivanov and Dolgui (2020), social capital facilitates real-time exchange of information and knowledge, improving agility and responsiveness during crises.

Joint Decision-Making and Coordination: Articles such as Yang et al. (2022), Tirkolaee et al. (2022), and Dey et al. (2022) document how social capital fosters collaborative governance structures that improve coordination and reduce duplication during disruptions.

Strategic Adaptability: Firms embedded in high-trust networks are more willing to invest in adaptive measures and flexible capacity (Choi et al.2021; Khan et al. 2022), leading to better recovery outcomes.

Cultural Cohesion and Norms: In multi-actor settings, shared norms and values (Touboulic & Walker 2015) have been shown to reduce friction, enabling smoother cooperation under pressure.

Thus, the evidence suggests that social capital mechanisms significantly enhance both proactive risk mitigation (early warning systems, supplier diversification) and reactive recovery (resource reallocation, joint problem-solving).

RQ3: What theoretical gaps exist in the literature on social capital and supply chain resilience, and what are the suggested directions for future research?

While literature offers strong support for the role of social capital in resilience, several theoretical and practical gaps remain.

Underrepresentation of Cognitive Capital: Few studies deeply investigate the cognitive dimension, particularly the role of shared language, mental models, and cultural understanding across international supply chains. This is a critical area for future research.

Sectoral and Geographical gaps: Most studies focus on manufacturing and humanitarian supply chains in developed economies. More research is needed in emerging markets, digital supply chains, and bioeconomy sectors, where social capital dynamics may differ (e.g., Schipfer et al. 2024).

Measurement Challenges: There is limited consensus on how to quantify social capital and its impact on resilience performance. Developing unified metrics and longitudinal studies could advance the field significantly.

Interplay between Dimensions: Many articles treat the three dimensions of social capital in isolation. However, the current review suggests strong interdependencies. Future frameworks should adopt a systems thinking approach that examines how these dimensions interact dynamically.

Post-disruption Learning and Feedback: Finally, few studies explore how social capital contributes to learning from past disruptions to improve future preparedness. This is a key element of dynamic resilience.

5 Discussion

This chapter interprets and critically evaluates the thematic findings presented in chapter 4, moving beyond descriptive synthesis to explore their boarder theoretical and practical implications. While chapter 4.7 explicitly mapped the results to the study's research questions, the focus of this chapter is to connect these insights to relevant theoretical perspectives, assess their contribution to existing frameworks, and identify implications for managerial practice and policy.

The analysis presented in this chapter considers how the structural, relational, and cognitive dimensions of social capital operate in a dynamic and interdependent manner, and how these mechanisms influence preparedness, response, and recovery in different supply chain contexts. Attention is given to both formal processes, such as structured collaboration agreements, and informal processes, such as trust-based exchanges and mutual support.

This chapter is structured as follows: section 5.1 interprets the thematic patterns identified in the synthesis, emphasising cross-context variations and the interplay between social capital dimensions. Section 5.2 relates these patterns to existing theoretical frameworks, including social capital theory and supply chain resilience models. Section 5.3 outlines the practical and policy implications of the findings.

5.1 Interpretation of Key Themes

The thematic analysis presented in Chapter 4 identified five interrelated themes through which social capital contributes to risk mitigation and recovery in supply chains: trust and relationship strengthening, knowledge sharing and information flow, collaboration and coordination, flexibility and adaptability, and shared norms and culture. While each theme represents a distinct function, their significance lies in how they collectively enhance resilience.

This section interprets these themes in relation to broader theoretical constructions, with reference to the three dimensions of social capital, relational, structural, and cognitive (Nahapiet & Ghoshal, 1998; Putnam, 2000).

5.1.1 Trust and Relationship Strengthening

Trust emerged as the most foundational element of the relational dimension of social capital. As multiple studies in the dataset highlight, trust reduces information asymmetrical, lowers transaction costs, and enhances the willingness of partners to share sensitive information and resources during crises (Yusuf et al., 2020; Dubey et al., 2021). In humanitarian contexts, trust between local NGOs and private logistics providers was shown to improve coordination and speed in disaster relief (Tang et al., 2019).

Trust therefore functions not only as a risk buffer, but as an enabler of other resilience mechanisms. It underpins knowledge sharing, facilitates collaboration, and accelerates adaptive responses. Without trust, networks risk becoming fragmented and reliant on rigid contractual arrangements, undermining resilience.

5.1.2 Knowledge Sharing and Information Flow

Knowledge sharing reflects the structural dimension of social capital, where network ties provide conduits for timely and accurate information. The findings show that firms embedded in cohesive networks are better positioned to detect disruptions early and coordinate responses effectively (Kumar et al., 2017; Ivanov and Dolgui, 2020).

The COVID-19 pandemic provided a clear example: socially embedded networks enabled the rapid exchange of operational insights, allowing supply chains to reconfigure capacity and logistics in real time (Dubey et al., 2021). At the same time, barriers such as fragmented communication systems and cultural misalignment could disrupt knowledge flows (Masengu et al., 2025). This demonstrates that knowledge sharing is a structural necessity but also reliant on trust and cognitive alignment to be effective.

5.1.3 Collaboration and Coordination

Collaboration represents the operationalisation of trust and knowledge into joint action. It is an expression of both relational and cognitive dimensions, as partners coordinate resources, share responsibilities, and work toward collective goals. Evidence from the reviewed studies shows that collaboration enhances efficiency and accelerates recovery, particularly during crises requiring multi-actor involvement (Paul et al., 2021; Tirkolaee et al., 2022).

Coordination, as part of this theme, is most effective when actors share norms of accountability and transparency, reducing conflict and delays. This was particularly evident during the COVID-19 pandemic, where strong collaborative ties enabled real-time reallocation of resources (Soni et al., 2021). Thus, collaboration and coordination are the integrative mechanisms through which resilience is enacted across networks.

5.1.4 Flexibility and Adaptability

Flexibility and adaptability are outcomes of strong social capital and align most closely with the structural dimension, while also being reinforced by relational trust and cognitive alignment. Supply chains embedded in social networks demonstrated the ability to pivot strategies, modify sourcing, and adjust distribution models in response to disruptions (Choi et al., 2021; Liu et al., 2020).

For example, firms with relationally embedded ties were able to renegotiate contracts quickly and share logistics capacity, while those with stronger cultural alignment found it easier to implement long-term adaptive measures such as supplier diversification (El Baz and Ruel, 2021; Khan et al., 2022). Flexibility thus emerges as a short-term operational capability, while adaptability reflects a long-term strategic capacity, both underpinned by social capital.

5.1.5 Shared Norms and Culture

Shared norms and culture constitute the cognitive dimension of social capital. They provide an interpretive framework within which trust, knowledge

exchange, and collaboration take place. When actors share values such as fairness, reciprocity, and transparency, they are more likely to engage in proactive risk management and coordinated recovery efforts (Wieland & Wallenburg, 2013; Touboulic and Walker, 2015).

The findings highlight that value alignment, particularly in public-private partnerships, enhances cooperation and legitimacy of decision-making (Paul et al., 2021). Conversely, cultural misalignment often hinders effective emergency response (Masengu et al., 2025). Norms and culture thus serve as the anchor for resilience by aligning expectations, reducing ambiguity, and ensuring continuity of collaborative behaviours over time.

5.1.6 Cross-Impact of Themes

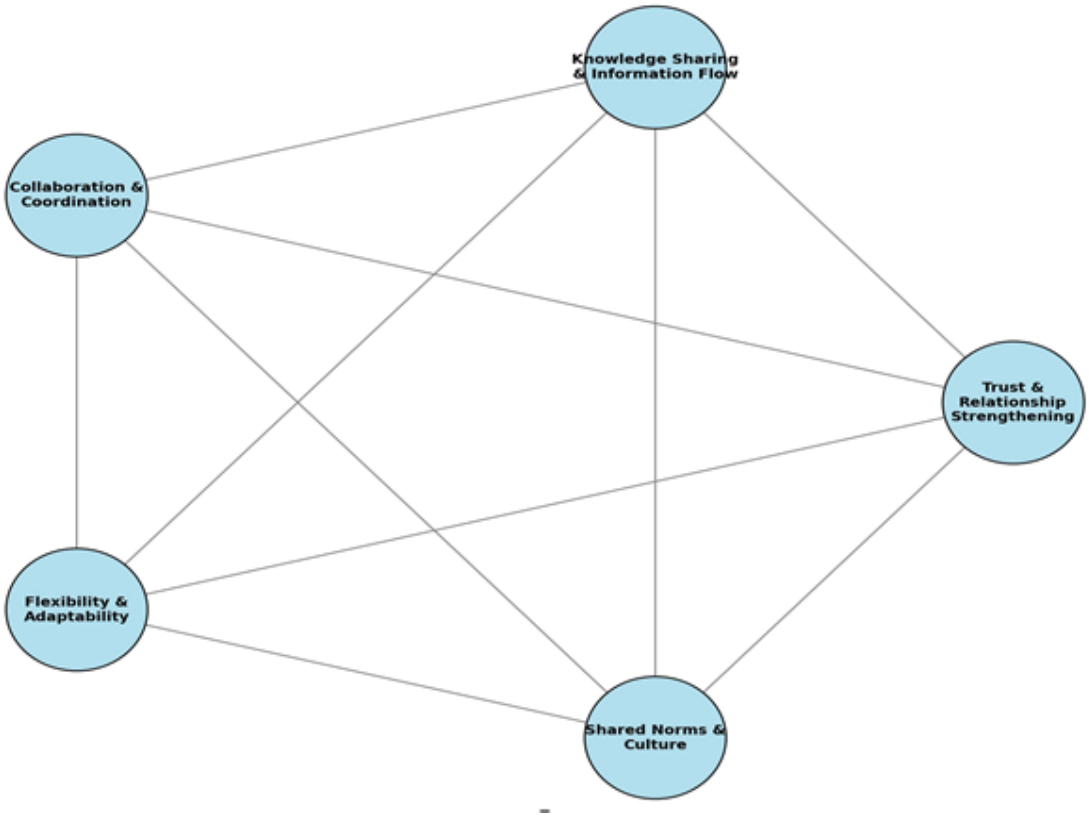


Figure 7 Thematic Cross-Impact Matrix of Social Capital Mechanisms in Supply Chain Resilience, showing the interconnections between themes. (Source: Author).

The cross-impact matrix demonstrates interdependence among themes. Trust supports knowledge sharing, which in turn underpins collaboration, while collaboration enhances adaptability, and all are sustained by shared norms. These dynamics reveal that the effectiveness of one theme often depends on the presence of others, creating a cycle of resilience that integrates relational trust, structural linkages, and cognitive alignment.

For instance, flexibility is only possible when knowledge is available, and partners trust one another enough to renegotiate and share resources (Choi et al., 2021). Similarly, knowledge sharing requires both structural connectivity and cultural alignment to ensure that information is not just transmitted but interpreted consistently (Masengu et al., 2025).

In summary, the matrix highlights that these mechanisms are mutually reinforcing, creating a systemic form of resilience where relational, structural, and cognitive dimensions converge.

5.1.7 Integration into the Three Dimensions of Social Capital

Finally, the thematic findings reinforce that the three dimensions of social capital are interdependent rather than discrete. Relational trust provides the foundation for structural knowledge flows; structural linkages enhance adaptability; and cognitive alignment sustains collaboration and ensures legitimacy of collective decisions.

This integration demonstrates that resilience in supply chains is not the result of isolated practices but the systemic effect of social capital operating across multiple dimensions simultaneously. In practice, this means that interventions to strengthen supply chain resilience should consider building trust, enhancing structural linkages for knowledge flow, and fostering shared norms not as separate initiatives but as complementary elements of a cohesive resilience strategy.

A recurring insight across the reviewed studies is that resilience gains are greatest when all three dimensions operate in synergy. For example, during COVID-19 recovery in agri-food sector, structural capital facilitated visibility of

inventory flows, relational capital ensued equitable resource allocation, and cognitive capital aligned decision-making with shared recovery goals (Zhao et al., 2023). This multi-dimensional integration aligns with complex adaptive systems thinking, where resilience emerges from dynamic interactions among diverse actors rather than from any single capability.

5.1.8 Interplay Between Social Capital Dimensions

Evidence across diverse sectors suggests that structural capital manifested in formalised network ties, contractual partnerships, and shared platforms, provides the initial framework for coordinated action. These structures facilitate information flow and resource visibility, which in turn foster the relational capital of trust, reciprocity, and commitment. Once trust is established, cognitive capital, shared goals, norms, and a collective understanding of priorities ensure that collaborative actions remain aligned during disruption management (Masengu et al., 2025; Giannoccaro and Iftikhar, 2020).

Importantly, these dimensions appear to operate as a feedback loop rather than a linear sequence. For example, in humanitarian supply chains responding to disaster-prone contexts, shared mission (cognitive) often precedes formal structures, accelerating the development of trust (relational) and enabling the rapid creation of structural mechanisms (Touboulic and Walker, 2015; Okello, 2025). In contrast, commercial contexts tend to formalise structural capital first through contracts and alliance frameworks before relational and cognitive dimensions mature.

5.2 Connection to Theoretical Frameworks

5.2.1 Social Capital Theory

Social Capital Theory, rooted in the work of Bourdieu (1986), Coleman (1988), and Putnam (1993), conceptualises social capital as the sum of resources accessible through an actor's network of relationships. Nahapiet and Ghoshal's (1998) widely cited framework further defines it in terms of structural, relational,

and cognitive dimensions. In the context of supply chains, these dimensions represent complementary enablers of resilience, the capacity to prepare for, respond to, recover from, and adapt after disruptions.

The evidence from this review reinforces the integrated nature of these dimensions. Structural capital comprising network ties, formal agreements, and governance mechanisms, provides the channels through which resources and information flow. This often precedes the development of relational capital, which embodies trust, reciprocity, and mutual commitment among partners (Giannoccaro and Iftikhar, 2020; Masengu et al., 2025). In turn, cognitive capital reflects the degree to which actors share common goals, values, and interpretations of challenges, ensuring coordinated decision-making during crises.

A key contribution of this review is to highlight that the sequence of development between these dimensions is context dependent. In humanitarian supply chains, cognitive capital often rooted in a shared humanitarian mission can emerge first, serving as a catalyst for relational trust and subsequently enabling the creation of structural frameworks (Okello, 2025; Touboulic and Walker, 2015). In contrast, in commercial manufacturing and technology sectors, structural arrangements such as contracts, performance standards, and shared platforms typically form the foundation upon which relational and cognitive dimensions grow (Queiroz et al., 2020; Zhao et al., 2023).

Moreover, findings indicate that these dimensions interact in a cyclical and mutually reinforcing manner rather than as a linear progression. Structural capital facilitates trust-building; trust enhances willingness to share information; shared understanding fosters the maintenance and expansion of network ties. This feedback loop supports a dynamic, evolving form of resilience that adapts to changing circumstances.

However, the synthesis also surfaces with theoretical tensions. For instance, strong relational ties, while beneficial for rapid coordination, can create over embeddedness, leading to insularity and resistance to new partnerships or innovative approaches (Colicchia and Strozzi, 2019). Similarly, reliance on

structural capital without the trust underpinning relational capital can result in compliance-oriented relationships that lack the agility required for novel disruptions (Collier and Sarkis, 2021). These trade-offs suggest that resilience depends not only on the presence of social capital dimensions but on their balanced and adaptive integration.

5.2.2 Supply Chain Resilience Models

Supply chain resilience literature commonly frames resilience as comprising four sequential but overlapping stages: preparedness, response, recovery, and adaptation. Mapping the role of social capital onto these stages reveals distinct contributions: Preparedness Structural capital plays a primary role by establishing formal partnerships, multi-tier visibility, and risk monitoring systems. For example, Zhao et al. (2023) show how structured agri-food networks in Europe developed pre-crisis contingency plans through shared databases and coordination mechanisms. Response Relational capital becomes critical during the acute phase of disruption, enabling rapid mobilisation of resources, prioritisation of scarce supplies, and informal problem-solving beyond contractual obligations (Najjar and Yasin, 2023; Sawik, 2025). Recovery Cognitive capital ensures alignment of recovery goals, harmonising priorities between upstream and downstream partners to restore flows and rebuild capabilities (Collier and Sarkis, 2021). Adaptation/Learning both relational and cognitive dimensions underpin post-crisis adaptation, embedding lessons learned into new routines, and reconfiguring networks for future resilience (Münch and Hartmann, 2023).

The review's sectoral breadth also confirms that the relative dominance of each dimension varies by context. In humanitarian and public health supply chains, relational and cognitive capitals are often decisive due to the urgency and moral imperative of the mission (Okello, 2025; Touboulic and Walker, 2015). In manufacturing, structural capital is often the anchor, with relational capital gradually augmenting it to support collaborative innovation (Queiroz et al., 2020).

5.2.3 Integration with Related Theories

The findings also intersect with other theoretical perspectives: Resource-Based View (RBV); Social capital acts as an intangible, difficult-to-imitate resource that can provide competitive advantage in resilience. For example, long-term trust-based partnerships in the automotive sector (Sanci et al., 2021) enable firms to access critical components faster during supply disruptions.

Relational View: This perspective emphasises that inter-organisational competitive advantage arises from joint resources developed through collaboration. Social capital aligns directly with this view, as mutual trust and shared norms underpin the co-development of contingency capabilities.

Dynamic Capabilities Theory: Resilience depends on the ability to sense threats, seize opportunities, and reconfigure resources. Social capital facilitates all three: structural networks sense disruptions, relational trust enables rapid seizing of solutions, and cognitive alignment supports strategic reconfiguration (Ivanov, 2023).

Complex Adaptive Systems (CAS) Theory; Supply chains as CAS adapt through distributed decision-making and localised problem-solving. The interplay between social capital dimensions mirrors the adaptive feedback loops that characterise such systems, allowing resilience to emerge organically rather than solely through top-down planning.

5.2.4 Theoretical Contribution

By synthesising evidence from 60 peer-reviewed articles across multiple sectors and geographies, this review extends the application of Social Capital Theory in supply chains in several ways: Context-Dependent Sequencing; Demonstrating that the order in which social capital dimensions develop varies between humanitarian and commercial contexts. Cyclical Interdependence: Proposing that the three dimensions reinforce each other dynamically over time, a nuance underrepresented in earlier frameworks. Integration Across Resilience Stages; Mapping specific dimensions to preparedness, response, recovery, and adaptation phases with empirical examples. Multi-Theoretical Linkages;

Positioning social capital as a bridge between RBV, Relational View, Dynamic Capabilities, and CAS Theory in resilience building. Trade-Off Recognition: Highlighting that social capital can both enhance and constrain resilience depending on its configuration and network openness.

In summary, the theoretical contribution lies in reframing social capital not merely as a static asset but as a dynamic capability embedded in relationships, structures, and shared understandings, which collectively underpin the adaptive performance of supply chains facing disruption.

5.3 Practical and Policy Implications

The findings provide guidance for both practitioners and policymakers seeking to enhance supply chain resilience through the development of social capital. Each of the five themes identified in Chapter 4 can be translated into actionable strategies that mangers can implement in practice.

Trust and Relationship Strengthening: Managers can foster trust by investing in joint supplier-buyer development programs, co-locating teams for critical projects, and conducting relationship audits to identify potential trust gaps. For example, long-term contracts can be supplemented with mentorship or supplier capability-building initiatives, reinforcing loyalty and reciprocity beyond formal agreements.

Knowledge Sharing and Information Flow: To enhance information flow, managers should create shared digital platforms such as supplier portals or blockchain-based visibility systems. In addition, they can promote regular cross-company workshops to exchange risk intelligence. Embedding boundary spanners (staff who work across organisational interfaces) can also reduce bottlenecks and ensure information moves seamlessly during crises.

Collaboration and Coordination: Collaboration can be institutionalised through joint scenario planning exercises, multi-stakeholder crisis simulations, and shared contingency funds. Cross-sectoral forums, such as those facilitated by

logistics clusters, provide a mechanism for both public and private actors to align strategies and pool resources. Managers can also form rapid-response taskforces that cut across supplier tiers and customer bases to synchronise actions when disruptions occur.

Flexibility and Adaptability: Managers can improve adaptability by encouraging multi-skilling of employees through joint training exercises that prepare staff to switch roles in emergencies. Developing dual sourcing strategies and maintaining flexible logistics contracts with multiple providers are further measures to ensure that supply chains can pivot quickly. Supplier innovation forums, where partners co-create adaptive solutions, also strengthen long-term adaptability.

Shared Norms and Culture: Managers should actively shape norms through joint codes of conduct, cross-cultural training sessions, and the establishment of collective performance standards. Embedding fairness principles in decision-making, such as transparent allocation of scarce resources during crises helps sustain cooperation under pressure. Industry associations can play a role in codifying these norms and cascading them across sectors.

In summary, the findings show that resilience is not built by technical investments alone but by deliberate actions to cultivate social capital. Managers who invest in these relational, structural, and cognitive mechanisms can significantly improve their organisation's ability to anticipate, withstand, and recover from disruptions.

From a policy perspective, governments and industry regulations also have a crucial role in strengthening the social capital foundations of supply chain resilience. The findings highlight the need for policies that encourage cross-sector collaboration, particularly in critical sectors such as healthcare, food, and humanitarian logistics. Policymakers could promote the creation of collaborative forums or platforms where private companies, public agencies, and non-governmental organisations can share data, coordinate responses, and align recovery efforts. Furthermore, given the role of shared norms and culture, policies that emphasise ethical supply chain practices, transparency, and

fairness can reinforce mutual accountability and strengthen trust across networks.

Finally, the increasing digitalisation of supply chains raises a further set of implications for both practice and policy. Managers should focus on cultivating ‘digital trust’ by ensuring data integrity, cybersecurity, and transparent governance of digital platforms. At the same time, policy frameworks must evolve to support secure and inclusive digital collaboration across borders, particularly considering global disruptions such as pandemics or geopolitical crises.

In summary, the practical and policy implications of this research underline the centrality of social capital as a systemic resource. For managers, the task is to consciously invest in relational and cognitive assets alongside technical capabilities, while for policymakers, the priority is to create enabling environments where collaboration, trust, and shared norms can flourish. Together, these efforts can significantly enhance the capacity of supply chains to withstand and recover from disruptions.

6 Conclusion

6.1 Fulfilment of Research Objectives

The research explored how dimensions of social capital help mitigate risk and support recovery. It assessed the effectiveness of social capital mechanisms and highlighted theoretical gaps. This was addressed through the thematic synthesis of 60 peer-reviewed articles. The findings shows that the structural dimension is primarily expressed through mechanisms of knowledge sharing and information flow, which enable early disruption detection and coordinated responses. The relational dimension was reflected in trust, collaboration, and coordination, all of which enhanced partners willingness to share resources and sustain long-term partnerships during crises. Finally, the cognitive dimension was captured in the theme of shared norms and culture, which provided the basis for collective sense-making and mutual accountability. Collectively, the analysis confirms that all three dimensions of social capital operate as interdependent enablers of resilience, embedding flexibility, adaptability, and stability into supply chain networks.

The second objective was to assess the effectiveness of social capital mechanisms in fostering supply chain resilience. The findings across multiple industries and contexts show that these mechanisms are highly effective in reducing uncertainty, accelerating decision-making, and embedding collective learning processes. For example, trust-based relationships were shown to reduce reliance on formal contracts, thereby enabling rapid and flexible responses during crises. Knowledge-sharing mechanisms enhanced transparency and fostered real-time coordination, particularly evident during large-scale disruptions such as the COVID-19 pandemic. Collaborative governance structures, supported by shared values and culture, were also identified as crucial for sustaining resilience in humanitarian, healthcare, and manufacturing supply chains.

However, the evidence suggests that social capital mechanisms not only mitigate immediate risks but also strengthen long-term adaptive capacity, making them essential for supply chain resilience.

The third objective was to identify theoretical gaps in the current literature and recommend future research directions. This objective was addressed through the critical discussion of limitations within the reviewed studies. While significant insights were gained, the literature remains fragmented across sectors, with a strong bias toward manufacturing and Western contexts. There is comparatively limited research on how social capital functions in informal, community-based, or non-Western supply chains. Similarly, while digitalisation is transforming supply chain networks, studies on the role of digital trust, online collaboration platforms, and technology-enabled social capital remain scarce.

Furthermore, most of the reviewed articles adopt cross-sectional perspectives, leaving a gap in longitudinal studies that could capture the evolution of social capital over time. These limitations highlight opportunities for future research that explores the interplay between digitalisation, cultural diversity, and social capital in enhancing resilience under increasingly complex and globalised conditions.

In summary, the research objectives have been successfully met. The study demonstrates that social capital through its structural, relational, and cognitive dimensions, plays a central role in both mitigating risks and fostering recovery. It further confirms that effectiveness of social capital mechanisms in building resilient supply chains and identifies meaningful gaps in the literature that set the foundation for future inquiry.

6.2 Contributions of the Study

This research makes several contributions to the growing body of knowledge on supply chain resilience, particularly by foregrounding the role of social capital in risk mitigation and recovery strategies. These contributions span theoretical, practical, and methodological domains, thereby offering value to both academia and practice.

From theoretical perspective, the research advances the conceptualisation of social capital within the context of supply chain resilience. While earlier research has often examined relational, structural, and cognitive dimensions in isolation, this thesis demonstrates their interdependence and systemic nature. By mapping five core themes, trust, knowledge sharing, collaboration, flexibility, and shared norms onto the three dimensions of social capital, the study shows that resilience is not the product of a single mechanism but the cross-impact of multiple, mutually reinforcing dynamics. This framework strengthens the theoretical link between social capital and resilience by providing a more holistic explanation of how supply chains anticipate, withstand, and recover from disruptions. It also contributes to social capital theory by demonstrating its applicability across diverse supply chain contexts, ranging from humanitarian operations to global manufacturing networks.

The research also makes significant practical contributions. In a world where supply chains are increasingly exposed to complex and unpredictable risks, the findings provide managers and policymakers with actionable insights. The evidence shows that relational trust and shared norms are not merely intangible assets but strategic enablers that reduce uncertainty, improve decision-making, and accelerate collective responses during crises. Similarly, knowledge sharing and collaborative coordination are shown to be vital for mobilising resources quickly and ensuring continuity of operations. Managers can draw from these insights to design interventions that strengthen social ties across their networks, invest in platforms that enhance communication, and foster cultures that encourage cooperation and share responsibility. In humanitarian contexts, the findings highlight the importance of embedding trust and cultural alignment to ensure effective resource allocation and timely relief. Thus, the research provides a practical framework that organisations can use to build more resilient and adaptive supply chains.

In addition, the research contributes at a methodological level by applying a rigorous systematic literature review to an area where fragmented insights previously dominated. By synthesising evidence from 60 peer-reviewed articles

published between 2010 and 2025, the study ensures both breadth and depth of coverage, capturing the evolution of scholarly thinking in this field.

Furthermore, the integration of cross impact matrices and visual mapping between themes and social capital dimensions provides a novel methodological approach for presenting the interrelationships between constructs. This methodological contribution enhances transparency, replicability, and the potential for future scholars to build upon the findings.

In summary, these contributions underscore the originality and relevance of the study. Theoretically, it enriches understanding of social capital as a multidimensional and systemic driver of resilience. Practically, it provides actionable guidance for supply chain managers and humanitarian practitioners navigating an era of heightened disruption. Methodologically, it demonstrates the value of systematic synthesis in consolidating fragmented literature into a coherent and comprehensive framework.

6.3 Research Limitations

While this research has generated meaningful insights into the role of social capital in supply chain resilience, it is important to acknowledge certain limitations that frame the scope of the findings. Firstly, the research is based on a systematic review of 60 peer-reviewed articles, and as such it reflects the strengths and boundaries of the existing body of literature. This reliance on secondary data means that the analysis is limited by the contexts, methodologies, and assumptions present in the reviewed studies.

Secondly, although the dataset was carefully selected from two major databases (Scopus & EBSCO) and restricted to the period 2010-2025, it inevitably reflects publication patterns within these sources. As a result, the review may not fully capture insights published outside mainstream academic outlets or in non-English contexts, where valuable but less visible perspectives on social capital in supply chain resilience might exist.

Thirdly, the literature reviewed demonstrates a concentration on certain sectors, particularly manufacturing, logistics, and healthcare, with relatively fewer

studies addressing informal, community-based, or non-Western supply chains. This sectoral emphasis does not diminish the validity of the findings but highlights the need for caution when generalising conclusions across all supply chain environments.

Finally, the review primarily synthesises cross-sectional studies, which provide valuable snapshots of how social capital supports resilience but do not always capture its evolution over time. The dynamic, path-dependent nature of social capital suggests that longitudinal perspectives would further enrich understanding.

Overall, these limitations do not undermine the contribution of the research but instead point toward areas where future studies can extend and deepen the insights provided here.

6.4 Recommendations for Future Research

Building on the insights and boundaries identified in this research, several avenues for future research are recommended. First, while this review highlights the importance of social capital across structural, relational, and cognitive dimensions, further research is needed to examine how these dimensions evolve over time. Longitudinal studies could provide deeper insights into the dynamic nature of social capital and its role in sustaining resilience across different stages of disruption and recovery.

Secondly, the findings suggest a sectoral concentration in the existing literature. With strong representation in manufacturing, healthcare, logistics and a few humanitarian logistics. Future research could broaden the scope by investigating how social capital operates in underexplored contexts such as agricultural supply chains, informal networks, or community-driven humanitarian systems. Such studies would enrich understanding of how social capital manifests in diverse cultural and economic environments.

Finally, the growing digitalisation of supply chains presents an important opportunity for future investigation. While traditional mechanisms of trust, knowledge sharing, and collaboration remain central, future research could

explore how digital platforms, blockchain, and artificial intelligence reshape the formation and utilisation of social capital. In particular, ‘the role of digital trust’ and online collaboration in enhancing resilience warrants more systematic examination.

By addressing these directions, future research can extend the findings of this thesis, enriching theoretical development, strengthening methodological diversity, and providing more comprehensive guidance for practitioners navigating increasingly complex and interconnected supply chains.

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Appendices

Appendix A Ethical approval letter



15 July 2025

Dear Miss Birigeni ,

Reference: CURES/26039/2025
Project ID: 28690
Title: The Role of Social Capital in Risk Mitigation and Recovery Strategies in Supply Chains: A Systematic Literature Review.

Thank you for your application to the Cranfield University Research Ethics System (CURES).

We are pleased to inform you your CURES application, reference CURES/26039/2025 **has been reviewed. You may now proceed with the research activities you have sought approval for.**

If you have any queries, please contact CURES Support.

We wish you every success with your project.

Regards,

CURES Team

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Figure-A 1

Appendix B

B.1 Data Extraction Table

Title	Authors	Year	Aim/Objectives	Methodology	Key Findings
Factors affecting innovativeness of small and medium enterprises in emerging markets	Kassa, Tizazu; Kegne, Meketaw	2025	To investigate the internal and external factors that influence the innovativeness of SMEs in emerging markets.	Mixed-method approach; survey and interviews conducted among SME managers in Ethiopia.	Trust-based relationships, collaborative networks, and institutional support significantly enhance SME innovation, indirectly supporting resilience and adaptability traits of social capital.
Resilience in Global Supply Chains: A Multi-Level Framework	Zhou, Jingmei; Xu, Ting; Chiao, Yuchi; Fang, Yulin	2024	To explore the mechanisms by which global supply chains build resilience across different levels.	Conceptual analysis and empirical validation using case studies of multinational firms.	Social capital through supplier relationships, shared norms, and joint problem-solving, enhances both proactive and reactive supply chain resilience.
Integration of Human-Earth System Modelling for Crisis Response Logistics	Schipfer, Fabian; Burli, Pralhad; Fritsche, Uwe	2024	To propose a hybrid modelling approach combining human and earth systems for better	Systems modelling and simulation; literature integration with GIS-	Trust among actors and communication networks (social capital) are essential for coordinated response and

			logistics coordination in crisis zones.	based crisis mapping.	sustainable recovery logistics.
The effects of the factors affecting sustainability of Nigerian humanitarian logistics firms: The mediation effect of the leadership.	Kofar Kudu, Usman Bala; Karia, Noorliza	2024	To assess factors influencing the sustainability of humanitarian logistics through stakeholder engagement.	Qualitative study based on stakeholder interviews and thematic analysis.	Stakeholder trust, institutional relationships, and social networks are critical for strengthening recovery operations and resilient logistics systems.
Managerial and Organizational Implications Arising from the Implementation of Blockchain Technology in Supply Chains: An AS-IS and To-Be Analysis.	Bosco, Gerardo; D'Amore, Raffaele; Sciarrone, Francesco	2024	To examine how blockchain technology can support the development of circular and resilient supply chains.	Literature review and conceptual framework development.	Blockchain builds trust and visibility, enabling social capital and collaborative governance essential for risk mitigation and long-term recovery.
Innovative models in industrial cooperation amid sustainability transitions	Kudrenko, Ivan; Mukhametov, Almas; Aslanov, Emil	2025	To explore innovative cooperation models that can help industries adapt to economic and environmental transitions.	Conceptual and policy-oriented analysis using global sustainability reports and case reflections.	Long-term partnerships, knowledge-sharing, and cooperative behavior, central to social capital enhance industrial resilience during transitions.

Collaborative risk assessment in healthcare supply chains	Abou Mjahed, Mirna; Ben Abdelaziz, Fouad; Tarhini, Ali	2025	To study collaborative frameworks for risk assessment in healthcare supply chains using multi-criteria decision-making.	Quantitative modelling using fuzzy AHP and TOPSIS approaches.	Collaborative decision-making improves risk detection and response; trust and shared goals are essential components of social capital.
Digitising and Reshaping Supply Chain Strategy for Resilience and Responsiveness	Tiwari, Manoj Kumar; Bidanda, Bopaya; Geunes, Joseph	2024	To propose strategies for digitizing supply chains to enhance resilience and responsiveness in volatile environments.	Conceptual framework grounded in operations and information systems literature.	Digital collaboration tools strengthen communication, network ties, and planning adaptability highlighting digital social capital in resilience.
Sustainable food traceability: a comprehensive model for enhancing safety and resilience in the supply chain in the Oman food industry.	Masengu, Reason; Al Habsi, Jouhara Sultan; Muchie, Mammo	2025	To provide a comprehensive, sustainable, and technologically advanced traceability model that enhances the safety and resilience of the food supply chain in Oman.	Multi-stakeholder qualitative analysis through interviews and policy document reviews.	Community engagement, inter-organizational trust, and culturally rooted collaborations support resilience and sustainability.
Food Waste and Loss Management in HORECA: The 5C's Route	Torrejón-Ramos, María; Medina-	2025	To examine how collaborative consumption	Empirical study using semi-structured	Strong informal networks and mutual support systems (social

Guidance. in Crisis Settings	Salgado, María Susana		models affect natural resource use in post-crisis recovery.	interviews and thematic analysis.	capital) enhance efficient resource distribution and recovery outcomes.
The opportunities and challenges of crisis cartel during demand disruptions: A game theoretic study.	Raju, Sarin; T M, Rofin; Kumar, Saraf Pavan	2024	To explore the emerging governance dynamics in humanitarian supply chains through the lens of 'crisis cartels.	Conceptual paper using governance theory and documented field cases.	Crisis cartels improve responsiveness and resource pooling; trust and transparency are key elements of social capital.
Uncertainties of supply chain transition and integration for Industry 5.0: a review of operations management literature.	Durugbo, Christopher M.	2025	To analyse the uncertainties surrounding supply chain transition to Industry 5.0 and how it can enhance sustainability.	Analytical review with scenario modelling and conceptual mapping.	Collaborative intelligence and co-creation practices build social capital needed for resilience under uncertainty.
The impact of nurses' disaster preparedness competencies on public health center resilience in disaster-prone areas.	Dg Sirata, Moh Fikram; Balqis; Arifin, Muhammad	2025	To assess how nurses' preparedness competencies contribute to the resilience of hospitals in disaster-prone areas.	Quantitative survey of hospital staff with regression analysis.	Teamwork, communication, and internal peer networks enhance adaptive capacity, demonstrating strong social capital.
Fostering circular economy through	Perotti, Francesco Antonio;	2024	To examine the role of open innovation in	Empirical case study of multinational	Trust, shared knowledge, and collaborative

open innovation in supply chains	Bargoni, Augusto; Fracarolli Nunes, Marilia		enabling circular economy practices in supply chains.	supply chains implementing circular practices.	risk-taking support circular transitions, rooted in social capital.
Realizing environmental sustainability development through digital supply chain visibility	Ping-Kuo, Chen; Yong, Ye	2024	To explore how digital visibility enables environmental sustainability across global supply chains.	Mixed-method study combining case analysis with interviews.	Digital transparency and informational ties reinforce relational and structural social capital for supply chain resilience.
The management of global multi-tier sustainable supply chains	Najjar, Mohammad; Yasin, Mahmoud M.	2023	To explore strategies for managing sustainability across global multi-tier supply chains.	Case-based analysis and literature synthesis.	Trust and knowledge-sharing across supply chain tiers improve sustainability and resilience, highlighting the role of social capital.
Corporate sustainability standards in multi-tier supply chains	Grimm, Jörg H.; Hofstetter, Joerg S.; Sarkis, Joseph	2021	To assess the influence of sustainability standards on supply chain actors beyond the first-tier suppliers.	Empirical study using surveys and structured interviews.	Informal ties and trust complement formal controls, reinforcing social capital in sustainable practice adoption.
A network-of-networks adaptation for cross-industry	Dolgui, Alexandre; Gusikhin, Oleg; Ivanov, Dmitry	2023	To propose a network-of-networks model for improving cross-sector	Simulation-based modeling and scenario analysis.	Trust-based, interconnected networks improve systemic

supply chain resilience			supply chain resilience in dynamic environments.		response and coordination, demonstrating structural social capital.
A fair distribution of expected profit in a sustainable supply chain under disruption risks	Sawik, Tadeusz	2025	To develop a profit-sharing model in sustainable supply chains affected by disruptions.	Stochastic mixed-integer linear programming (MILP).	Fairness and cooperative profit models enhance supplier reliability, linked to relational social capital.
Agri-food supply chain resilience strategies for pandemics and climate shocks	Zhao, Guoqing; Vazquez-Noguerol, Mar; Liu, Shaofeng	2023	To identify resilience strategies for agri-food supply chains facing compound shocks (e.g., COVID-19, climate risks).	Delphi study and cross-case analysis across the UK and China.	Collaborative planning and trusted local networks enable resilience; social capital is essential in agri-food systems.
A multi-agent reinforcement learning model for post-pandemic resilient supply chain decision-making	Kim, Byeongmok; Kim, Jong Gwang; Lee, Seokcheon	2024	To develop a decision-making model using reinforcement learning for enhancing supply chain resilience after COVID-19.	Multi-agent reinforcement learning (MARL) simulation model.	Shared learning among agents reflects decentralized, trust-based coordination, illustrating social capital in digital systems.
Leading during a public health crisis	Sheedy, Angela; Stephens, Dianne; Vermeulen, Lisa	2024	To examine leadership responses during COVID-19 in public health systems.	Case reflection and qualitative interviews with crisis	Team cohesion, psychological safety, and mutual accountability supported

				leadership teams.	effective leadership, core traits of bonding social capital.

Table-Apx 1

Appendix C

C.1 PRISMA Flow Diagram

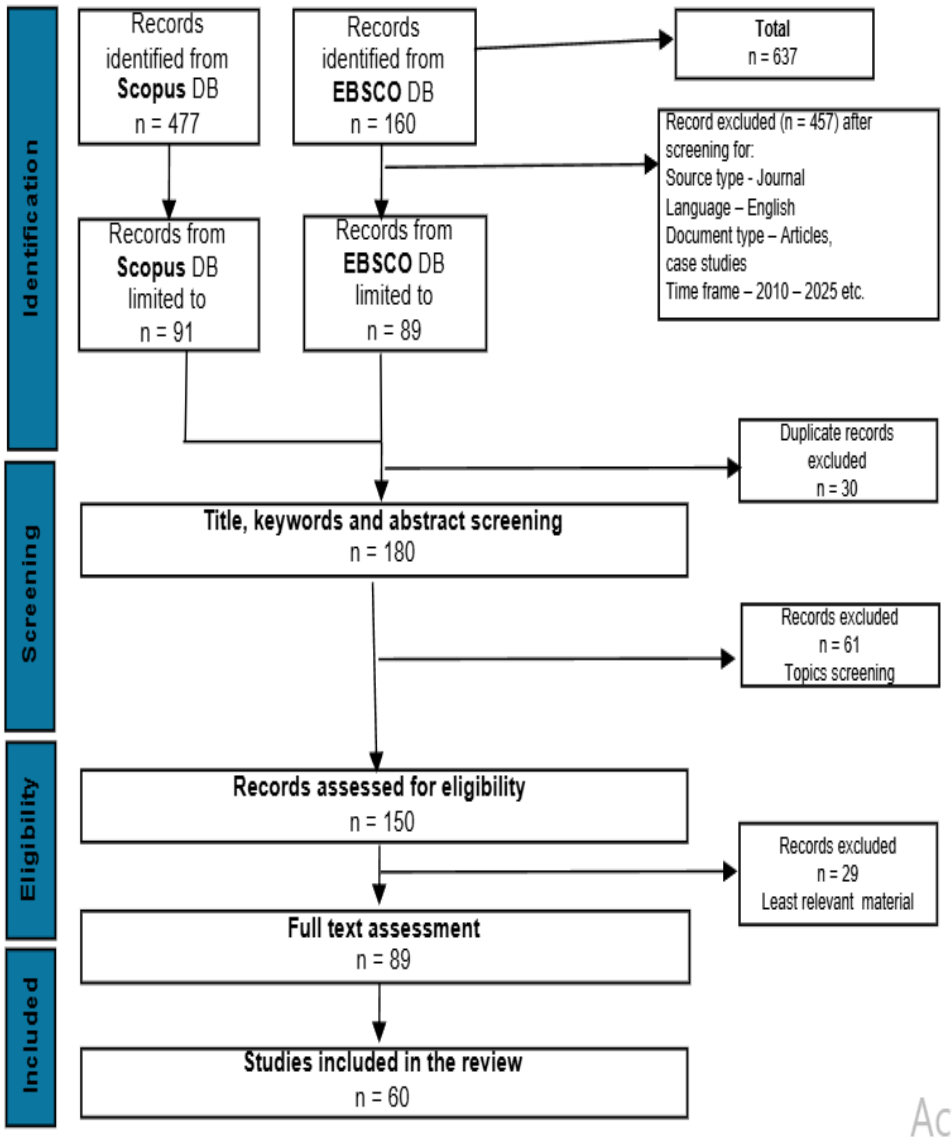


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