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RECONCEPTUALIZING THE INTERFACE BETWEEN SUPPLY CHAIN RISK MANAGEMENT AND BUSINESS CONTINUITY MANAGEMENT: A BOUNDARY CLARIFICATION AND INTEGRATION FRAMEWORK

Shreyansh Srinivasan
Masters of Business Administration (MBA), Alliant International University

Anees Abed Alyafei
Preventive Health, Wellness Programs, Primary Health Care Corporation, Qatar
Corresponding Author's Email: shreyansh123_s@outlook.com

Abstract
Due to the ongoing pandemic, more challenges from cyber threats and shifts in global politics, organizations have to troubleshoot and adopt better precautions. This study tackles the gap between the two fields, Supply Chain Risk Management (SCRM) and Business Continuity Management (BCM), that were separately developed from each other. By bringing together literature, studies and international rules, the paper proposes a framework that nicely defines how SCRM and BCM work together and should be integrated into strategy. SCRM is designed to handle issues specific to the supply chain, while BCM handles risks throughout the business. Dynamic capabilities, organizational learning and cross-functional coordination are shown in the framework to help foster organizational resilience. It is clear from findings that combining continuity principles with risk management improves how the operation runs, makes it possible to recover faster when something happens and strengthens the supply chain. Also, organizations with set continuity plans, based on international guidelines, often prove to be more flexible. The study helps on both the theory and practice sides by bringing together different approaches and delivering practical ways to build resilience in many kinds of organizations. While it is difficult to make general statements and carry out the research in places with few resources, the research lays a good base for further work involving different fields over time.
Keywords: Supply Chain Risk Management (SCRM), Business Continuity Management (BCM), Resilience, Dynamic Capabilities, Integration of Risks, Preparing for Crises, Continuity in Operations, Disruption Management.

Introduction

Today, organizations are increasingly prone to enduring systemic disruptions, ranging from pandemics and cyber threats to geo-political conflicts, which reveal deep-seated vulnerabilities across supply chains and operational infrastructures. This has led to the emergence of Supply Chain Risk Management (SCRM) and Business Continuity Management (BCM) as critical domains to enable resilience at enterprises (Shekarian & Mellat Parast, 2021). However, despite their shared aim of minimizing risk and ensuring operational continuity, these domains

have yet to form a cohesive framework that is consistent both within and outside organizational contexts (Szuster & Lotko, 2022).
SCRM focuses on the identification, evaluation, and mitigation of risks at a cross-supply chain level, utilizing frameworks of supply chain theory, risk propagation, and resilience literature. It deals with problems like demand volatility, supplier disruptions, and logistical failures. BCM, on the other hand, functions at the organizational level and concentrates on primary and secondary planning frameworks on contingency planning, crisis response, and recovery for the critical functions to continue during disruptive events (Watson et al., 2024). While both domains add to resilience, the differences in scope, tools, and application create ambiguities in overlap, leading to gaps in efficiency and fostering confusion over roles, responsibilities, and integration mechanisms (Yang et al., 2021).

Research and lived experiences, especially during the COVID-19 pandemic, show that organizations tend to break the frameworks into pieces rather than use them in an integrated manner. Most of them had continuity plans stashed or unattended and took reactive measures that worsened the detrimental impacts of disruption (Zhang et al., 2023). Although BCM can improve the resilience of a supply chain through better visibility, collaboration, flexibility, and SCRM can guide BCM by highlighting interdependent supply chain risks, theoretical literature largely discusses them separately. This neglects opportunities for integration in various frameworks, including a holistic systems framework (Watson et al., 2024).

This paper attempts to fill the gap between SCRM and BCM by answering the following three questions: (1) What are the delineating features that separate SCRM from BCM? (2) To what degree do they overlap in content, aims, and instruments? (3) In what ways can the proposed unifying framework advance both construct development and practical application?

Using boundary theory and integrative synthesis alongside logical reasoning, the paper assesses modern and classical literature from the supply chain, resilience, and continuity disciplines. It proposes a constructive model that focuses on clarifying their intersections and unique features which helps formulate cumulative multi-strategic approaches to integrated risk and continuity management. Its objectives are to elevate the clarity and coherence of these theories in practice to enable agile adaptation, resilience, and change agility in an organization within increasingly volatile environments.

Literature Review

Concept of SCRM and BCM

Supply Chain Risk Management (SCRM) and Business Continuity Management (BCM) are two separate but interconnected systems key to organizational resilience. SCRM focuses on the identification, evaluation, and reduction of risks to global supply chains. It uses risk matrices, scenario analysis, and supplier audits to manage disruptions like a supplier payment default, transport holdups, or geopolitical shocks (Yang et al., 2021). On the other hand, BCM looks at the entire organization including all critical business functions. It employs Business Impact Analyses (BIA), continuity plans, and crisis management strategies to defend or swiftly recover from damaging events (Szuster & Lotko, 2022; Watson et al., 2024; Zhang et al., 2023).

Zhang et al. (2023) note SCRM is supported by ISO 28000 which stresses security in the supply chain, while BCM is embedded within ISO 22301 which builds resilience through defined organizational processes. Also noteworthy is the increasing use of BCM in vendor certifications indicating a change in using compliance to competitive advantage—to bolster trust and resilience in supply chains (Ali et al., 2021; Yang et al., 2021). Still, the descriptive approach to SCRM usually conflicts with the fragmented and often overlapping implementation of SCRM and BCM gives rise to duplicated evaluations, isolated systems, and inefficient maneuvering frameworks.

To improve visibility, agility, and inter-organizational cooperation, BCM should be integrated within the supply chain. Its focus on transparency leads to the realization of risk mitigation opportunities earlier—like mitigating supplier-contingent failures (Abed, 2024; Ali et al., 2021; Azmi et al., 2021). Through BCM, agility is achieved allowing for swiftly reallocating resources and reconfiguring operations. Additionally, trust-based information exchange among network members, like joint scenario training sessions, improves network-wide crisis response.

On the other hand, there remains a gap between SCRM and BCM's concepts. They are entrenched in a multi-disciplinary 'silo' with different padlocks known as language, norms (like ISO 28000 versus 22301), and procedures (Abdelfattah et al., 2023; Abed, 2024). This divergence creates barriers in formulating cohesive countermeasures for systemic disruptions. In Japan and the ASEAN region, approaches like Area-Based BCM illustrate the optimum coordinated risk governance, cross-sector collaboration, and shared mechanisms of resilience documented (Abed, 2024; Aljohani, 2023).

The 2011 Japan earthquake and COVID-19 are recent examples of industrial-case studies. Organizations using both SCRM and BCM have outperformed others, exhibiting more flexible recovery capabilities due to the synergistic use of adaptive risk mapping, crisis teams, and flexible inventory control (Azmi et al., 2021; Martínez-Reyes et al., 2021). Integration, at a conceptual level, is grounded in the Dynamic Capabilities Framework—highlighting the importance of sensing, seizing, and reconfiguring (Meechang & Watanabe, 2022, 2023). While this offers potential, gaps remain with the use of BIA, and disjointed risk assessments.

For that reason, integrating both the technical and relational aspects of a systems approach is necessary to implement resilience throughout supply chains and business structures. The integration of these elements is still vital to control fragmentation, improve adaptive capacity, and synchronize organizational resilience to new global risks. **Table 1** shows Conceptual Comparison of SCRM and BCM.

Table 1: Conceptual Comparison of SCRM and BCM

Dimension	Supply Chain Risk Management (SCRM)	Business Continuity Management (BCM)	Key References
Definition	A structured approach to identifying, assessing, mitigating, and monitoring risks in global supply chains to ensure operational continuity.	A strategic management process to maintain or recover essential business functions during and after a crisis.	Riglietti et al. (2024); Ivanov & Dolgui (2020); Ganesh & Kalpana (2022)
Scope	Primarily procurement, logistics, and supplier network operations.	Enterprise-wide (IT, HR, operations, finance, facilities).	Ali et al. (2021); Cedergren & Hassel (2022); Corrales-Estrada et al. (2021)
Primary Objectives	Prevent disruptions, minimize risk exposure, and maintain service levels.	Enable recovery and continuity of mission-critical operations during/after disruption.	Habani & Kamaruddin (2021); Meechang & Watanabe (2023); Gierczak & Messmer (2023)
Key Tools/Practices	Risk matrices, supplier audits, early warning systems, digital twins.	BCP, ISO 22301 framework, simulations, crisis communication systems.	Boyens et al. (2022); Abed (2024); Galaitsi et al. (2023)
Organizational Focus	Functional/Operational level (SCM, procurement teams).	Strategic/Executive level (risk officers, continuity managers).	Ali et al. (2021); Fuad & Musa (2021); Amiri et al. (2024)
Temporal Focus	Primarily proactive and pre-disruption.	Focused on during and post-disruption phases.	Yang et al. (2021); Freichel et al. (2022); Galaitsi et al. (2023)
Integration Opportunities	Overlap with BCM in risk identification, contingency planning, and incident response.	Overlap with SCRM in strategic alignment, communication protocols, and resilience metrics.	Corrales-Estrada et al. (2021); Cedergren & Hassel (2022); Burton (2022)
Theoretical Anchors	Resource-Based View (RBV), Dynamic Capabilities, Systems Theory	Organizational Resilience, Institutional Theory, Crisis Management Theory	Dynamic Capabilities (Teece et al.); Crisis Management Theory

			(Shrivastava); Boundary Theory (Ashforth et al.)

Fragmentation and Overlaps Between SCRM and BCM: Conceptual Gaps and Operational Challenges

Research on Supply Chain Risk Management (SCRM) and Business Continuity Management (BCM) shows ongoing lack of integration and structural silos (Martínez-Reyes et al., 2021). Both are meant to enhance resilience and reduce disruption; however, they often integrate incoherently and evolve independently, creating divergent definitions, mismatched focal objectives, and scope fissures. SCRM deals with the risks in the supply chains from a logistics perspective, focusing on a chain approach to risk identification, assessment, and mitigation. BCM, however, adopts an organizational standpoint and concentrates on risk assessment, contingency planning, crisis management, and recovery for all critical business functions (Azmi et al., 2021; Meechang & Watanabe, 2022, 2023). The absence of integration has led to overlapping efforts, undefined responsibilities, and lost potential for systematic synergies.

Empirical studies (Abdelfattah et al., 2023; Abed, 2024; Bobel et al., 2022) document little interaction between SCRM and BCM. This gap has prevented the creation of holistic models that integrate all paradigms associated with operational disruptions. For instance, while it has been established that BCM improves agility, visibility, and collaboration within the supply chain, which are typically regarded as subordinate functions within SCRM, these advantages remain untapped within supply chain-specific risk models. Interest in frameworks such as ISO 22301 has increased, but continues to lack thorough implementation across various sectors, leading to insufficient preparedness and ineffective emergency response (Aljohani, 2023; Azmi et al., 2021).

The overlapping operational scopes of SCRM and BCM create role blurring, which is particularly pronounced during actual disruptions where responsibility delineation is poorly defined (Abed, 2024). Such vagueness directly consumes organizational resources, undermines economy, and results in uncoordinated responses to crises. In addition, the common goal of organizational resilience remains insufficiently theorized, especially in terms of how dynamic capabilities—such as agility, adaptability, and knowledge transfer—may be fostered in these two overlapping areas.

Build Convergence and New Integration Requirements: Towards a Common Approach Framework

SCRM and BCM possess common constructs including resilience, agility, visibility, and collaboration that enhance organizational adaptability under crisis conditions. However, their collective application is infrequent, and how these capabilities evolve in conjunction is still vague. For example, some studies have identified the interrelation between continuity practices and supply chain resilience. Nonetheless, there is a lack of primary data concerning this issue (Azmi et al., 2021; Martínez-Reyes et al., 2021; Meechang & Watanabe, 2022). Consequently,

some important drivers like organizational culture and knowledge management are captured in most theories and practical frameworks only superficially.

Disruptive events such as maritime port closures or natural catastrophes create a strong need for cross SCRM and BCM boundary integrated responses. The growing importance of cyber threats adds to the complexity, as most models seem to treat cybersecurity either as a risk to the supply chain or as a business continuity issue, without an overarching framework. Advancements in technology such as AI and digital twins offer possibilities for integration that enhance these domains, particularly in BCM, but they remain underutilized (MacDuffie et al., 2021; Szuster & Lotko, 2022; Yang et al., 2021). Table 2 shows the synthesized definitions of key constructs relevant to the SCRM–BCM interface based on multi-source literature review

Table 2: Synthesized definitions of key constructs relevant to the SCRM–BCM interface based on multi-source literature review

Construct	Synthesized Definition	Key References
Resilience	The adaptive capacity of a supply chain or organization to absorb, respond to, and recover from disruptions while maintaining core functions.	Galaitsi et al. (2023); Ivanov & Dolgui (2020); Corrales-Estrada et al. (2021)
Agility	The ability to rapidly adjust operations and supply chain activities in response to internal and external uncertainties or changes.	Ali et al. (2021); Yang et al. (2021); Ganesh & Kalpana (2022)
Visibility	The degree to which supply chain actors can access accurate, real-time information across nodes to foresee and manage disruptions.	Abed (2024); Burton (2022); Meechang & Watanabe (2023)
Cyber-Resilience	The ability of supply chain systems to resist, respond to, and recover from cyber threats while ensuring continuity and data integrity.	Boyens et al. (2022); Galaitsi et al. (2023); Gierczak & Messmer (2023)
Collaboration	The extent of cooperative interactions and aligned objectives between internal functions and external partners to manage risks and ensure continuity.	Ali et al. (2021); Riglietti et al. (2024); Cedergren & Hassel (2022)

Theoretical Lens

This research utilizes a multi-theoretical approach in analyzing the principal amalgamation of Supply Chain Risk Management (SCRM) and Business Continuity Management (BCM). Fundamentally, this study is developed under Boundary Theory which helps to organize and integrate the overlapping domains, goals, and functions of SCRM and BCM. This strategy attempts to deal with the chronic problem of fragmentation and the lack of coherent theoretical framework in the literature by structurally addressing their interdependencies (Szuster & Lotko, 2022; Watson et al., 2024; Yang et al., 2021; Zhang et al., 2023). Boundary theory

supports the bridging of the ISO standards, in this case, ISO 22301 for BCM and ISO 28000 for security of the supply chain, from a unified operational perspective. This theory can give significant insight into the ongoing gap between Supply Chain Risk Management (SCRM) and Business Continuity Management (BCM) (Boyens et al., 2022; Freichel et al., 2022; MacDuffie et al., 2021). Usually, these areas have grown together based on different standards, skills and approaches to managing risks. Boundary Theory points out that this happens because of both mindset and structure boundaries which keep people in different groups from working together easily. For example, SCRM teams are mainly focused on preventing issues in their suppliers, while BCM teams try to ensure all business functions keep running; rarely, their strategies are in line. Because of the difference, agencies repeat risk studies, face clashing agendas for recovering and notice gaps in how crises are managed. With Boundary Theory, we discover what leads to this way of thinking, as well as how we might work towards bridging the gap, for example with common words and agreed practices.

In addition, Resilience Theory focuses on organizational capabilities to absorb, adapt, and recovery from interruptions, thus providing a unifying foundation. It incorporates both SCRM and BCM into a single framework by focusing on the need to maintain operational resilience, particularly in sophisticated and interrelated risk ecosystems (Zhang et al., 2023). Resilience is regarded as an outcome as well as a process, sustaining the required adaptability for contemporary risk prevention and mitigation efforts.

Finally, the Dynamic Capabilities framework underscores learning, sensing, and resource reconfiguration in connecting SCRM's operational level to BCM's strategic level. The overall merging of theoretical underpinning provides a strong foundation for combining disparate practices as well as developing a new conceptual model that integrates risk, continuity and resilience within one unifying theory.

Methods

Search Strategy

In an attempt to bridge the gap between Supply Chain Risk Management (SCRM) and Business Continuity Management (BCM) within a singular cohesive framework, this study conducted a systematic literature review (SLR) based on the PRISMA (Preferred Reporting Items for Systematic Reviews and Meta-Analyses) framework. The particular method applied in this work was intentional in Research for methodological transparency, replicability, and academic rigor. The search was conducted across two leading scholarly databases—Scopus and Web of Science—chosen for their extensive coverage of peer-reviewed literature in the fields of management, risk, and operations. The keyword combinations used in the search included "supply chain risk," "business continuity," "resilience," "capabilities," and "integration." These terms were purposefully created to ensure the maximum number of documents that dealt with the intersection and integration of SCRM and BCM were retrieved.

PRISMA Framework

This literature review was conducted according to PRISMA, which provides cross steps from source identification and screening to eligibility assessment and inclusion. Figure 1 includes a

PRISMA flow diagram illustrating the accumulating and trimming processes of literature throughout the review period. This systematic approach guarantees that the findings of the study are based on an appropriately assembled and systematically analysed academic literature.

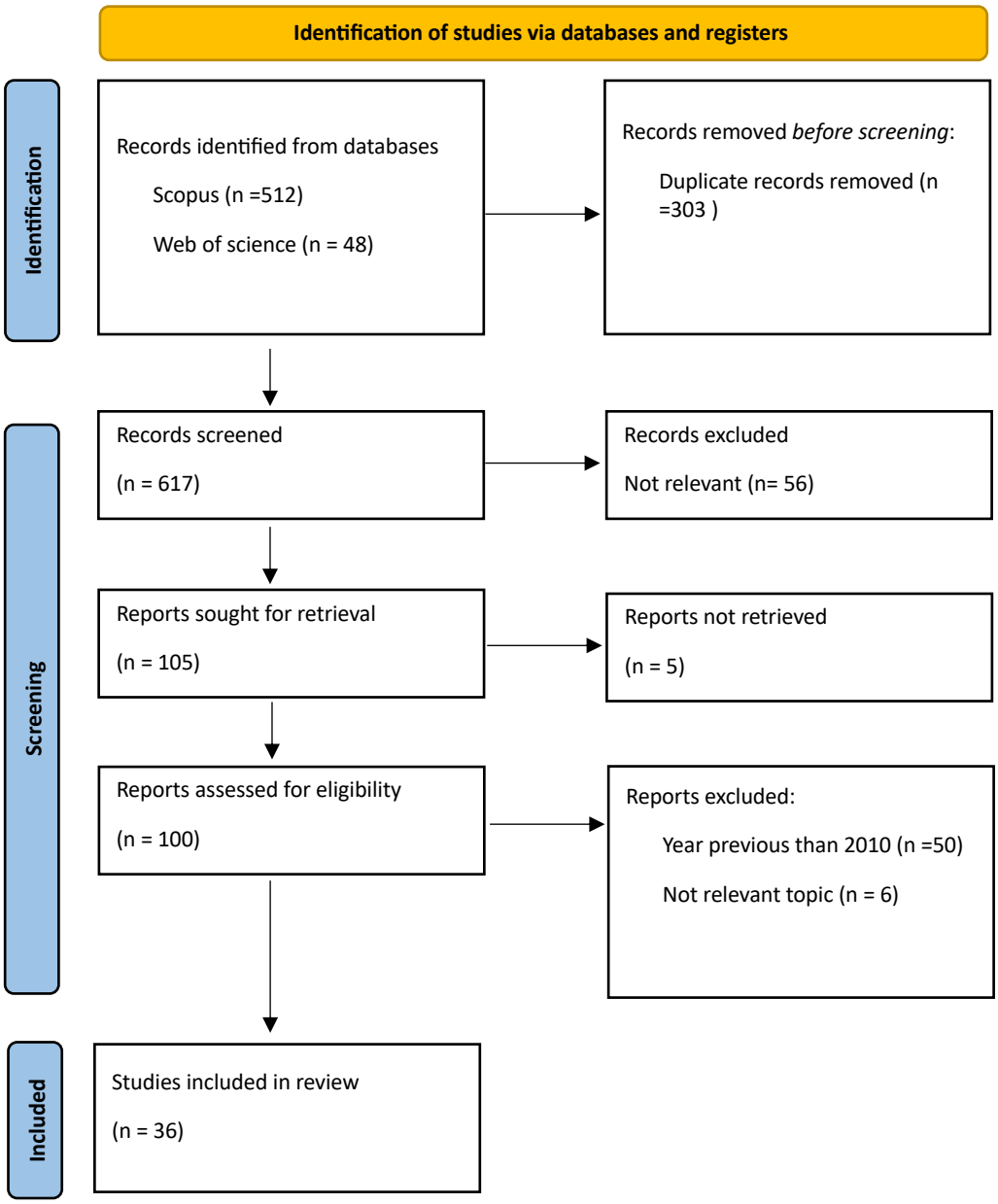

Figure 1: PRISMA framework

An initial search yielded 560 articles. After identifying duplicates, 303 articles were removed, leaving 257 records. These were assessed by thoroughly checking their titles and abstracts for completeness. All screened articles were peer-reviewed. A total of 105 records were selected for full text evaluation. Due to the authors' theoretical contributions, empirical breadth, and the extent to which the SCRM–BCM relationship was explored, 36 high-quality academic articles were chosen for extensive review.

Thematic synthesis methodology was used in data analysis. This meant that the literature was incorporated into a framework based on emerging concepts from the selected documents. These included digital enablers, dynamic capabilities, standard-based practices, and organizational integration mechanisms. After determining these clusters, a deductive approach was used to unite them into a single cohesive theory-to-practice framework. This blended empirical insights and conceptual constructs to maintain theoretical soundness alongside practical applicability.

The study also included the latest technologies such as predictive analytics and scenario modeling augmented with AI. These digital technologies serve as primary enablers that connect risk monitoring and continuity planning. Also, institutional components such as IT governance and compliance were added to the framework to improve its applicability within organizational contexts.

Thematic Literature Synthesis

The below-provided table 3 shows Thematic Literature Synthesis:

Table 3: Thematic Literature Synthesis

Theme	Representative Authors	Synthesis Insight
Role of Digital Tools in SCRM and BCM	Abed (2024); Ivanov & Dolgui (2020); Ganesh & Kalpana (2022); Aljohani (2023)	Advanced analytics, AI, and digital twins significantly enhance risk prediction and decision-making across supply networks.
Integration Challenges and Gaps between SCRM and BCM	Riglietti et al. (2024); Meechang & Watanabe (2023); Corrales-Estrada et al. (2021)	Despite shared goals, SCRM and BCM remain operationally siloed due to differing institutional logics and toolsets.
Capability-Based Perspectives on Resilience	Ali et al. (2021); Yang et al. (2021); Habani & Kamaruddin (2021); Gierczak & Messmer (2023)	Organizational resilience is increasingly seen as a dynamic, capability-driven construct rather than a fixed outcome.
Standardization and Implementation of BCM Frameworks	Galaitsi et al. (2023); Cedergren & Hassel (2022); Glenn (2018); Bobel et al. (2022)	Adoption of standards like ISO 22301 faces challenges in practice due to contextual adaptation and institutional inertia.
Cross-Functional and Inter-Organizational Collaboration	Cedergren & Hassel (2022); Riglietti et al. (2024); Ali et al. (2021); Gierczak & Messmer (2023)	Trust, joint decision-making, and communication structures are critical for resilience but often under-theorized.
Sector-Specific and Regional Approaches to Continuity	Amiri et al. (2024); Fuad & Musa (2021); Azmi et al. (2021); Meechang & Watanabe (2023)	Industry-specific risks (e.g., petrochemical, halal, public sector) require customized BCM-SCRM integration models.
Cybersecurity as a Supply Chain Continuity Enabler	Boyens et al. (2022); Galaitsi et al. (2023); Freichel et al. (2022); Glenn (2018)	Cyber risk is emerging as a continuity threat; yet, many frameworks are still reactive rather than proactive.

Empirical Gaps in Testing Conceptual Models	Corrales-Estrada et al. (2021); Burton (2022); Galaitsi et al. (2023)	Most integration models are conceptual and lack empirical testing across industries and geographies.

Proposed Framework development and core constructs

Supply Chain Risk Management (SCRM) and Business Continuity Management (BCM) are two concepts of organizational risk that are interrelated but unique in their own ways. SCRM is more about the risk management of the supply chain worrying about risks like as a supplier going out of business, product quality, logistics, and pricing. BCM takes a higher-level view, looking at the entire organization (Shekarian & Mellat Parast, 2021; Watson et al., 2024; Yang et al., 2021; Zhang et al., 2023). BCM looks after all the other important business services beyond the supply chain itself, managing crises, planning for them, and coordinating recovery (Abdelfattah et al., 2023; Watson et al., 2024; Zhang et al., 2023). Regardless of their differences, BCM activities reinforce essential organizational attributes like visibility, agility, and collaboration, which are fundamental to address supply chain vulnerabilities and operational losses (Ali et al., 2021; Azmi et al., 2021). Traditional frameworks of SCRM do not usually incorporate these lock-step resilience enablers. Instead, they focus on piece-meal approach integration of BCM processes that collaborates across functions to elevate silos of risk perception, thereby multiplying inefficiency and fragility, funnels are enhanced (Abed, 2024).

The importance of integrating bcm into business processes has empirically shown to improve supply chain resilience. For example, the sharp increase in bcm certification (ISO 22301) from 12% in 2010 to 51% in 2018 illustrates its increasing importance and formality ((Watson et al., 2024). bcm also improves situational awareness regarding proactive risk detection, crisis management, and recovery—capabilities that are often poorly achieved in traditional supply chain risk management (SCRM) systems. This is crucial within the context of complex global supply chain crises as bcm also addresses indirect risks that are not immediately related to the supplier.

Nonetheless, existing frameworks continue to be problematic. Resilience, adaptability, and dynamic capabilities are extremely important for bridging the gap between SCRM and BCM. However, they tend to lack theorization and operational clarity (Shekarian & Mellat Parast, 2021). While such phenomena as organizational learning, resource flexibility, and cross-functional collaboration are useful for better managing disruptions, they are hardly treated as norms within routinized activities (Yang et al., 2021). Furthermore, cognitive elements such as situational awareness as well as organizational culture which are important to foster adaptability and resilience are inadequately studied.

In order to address these problems, this paper offers a dynamic feedback-loop model which brings attention to the SCRM and the BCM as a convergence point while focusing on the shared outcomes of resilience: visibility, agility, cyber-resilience, and collaboration. This model has a

greater emphasis on the temporally interdependent nature of the system toward enhancing organizational continuity and supply chain resilience.

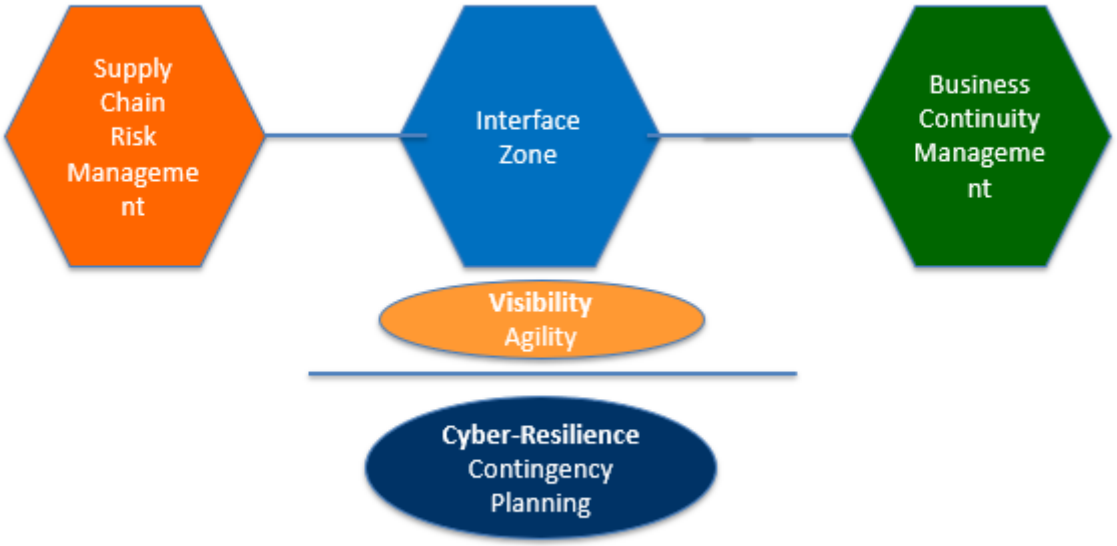

Figure 2: Proposed Framework development

Figure 2 visually represents the dynamic relationships among the core constructs of the proposed integration framework, Table 4 complements this by offering detailed conceptual clarity. The figure illustrates the feedback-loop logic between Supply Chain Risk Management (SCRM) and Business Continuity Management (BCM), emphasizing their convergence within an interface zone where critical resilience capabilities—such as visibility, agility, cyber-resilience, and collaboration—are both developed and reinforced. This visual structure conveys not only the bidirectional influence between SCRM and BCM, but also the centrality of the interface in enabling adaptive capacity. Taken together, Figures 2 and Table 4 constitute a self-consistent theoretical framework that bridges visual logic and critical definitional scrutiny into viable empirical operationalization and hypotheses to come.

Table 4: Framework constructs and their roles in the proposed SCRM–BCM integration model.

Framework Component	Description	Role in Framework
Supply Chain Risk Management (SCRM)	Processes for identifying, assessing, and mitigating supply-side risks across the network.	Acts as the operational foundation; feeds risk data and processes into the interface.
Business Continuity Management (BCM)	Strategic planning and execution of continuity and recovery actions across business units.	Serves as the strategic responder; builds enterprise continuity aligned with risk insights.

Interface Zone	The overlapping domain where shared constructs and capabilities facilitate integration.	Convergence zone of SCRM and BCM where resilience capabilities emerge and reinforce each other.
Visibility	Real-time access to risk-related data for enhanced coordination and foresight.	Enhances early warning and decision-making across the supply chain.
Agility	Rapid adaptation of operations and logistics to evolving disruptions or demands.	Enables fast execution of continuity or mitigation plans during disruption.
Cyber-Resilience	Ability to prevent, absorb, and recover from cyber threats within supply and IT networks.	Protects digital infrastructure supporting both SCRM and BCM processes.
Collaboration	Joint planning, aligned goals, and shared responses between departments and partners.	Integrates cross-functional efforts for holistic risk and continuity planning.

The combination of BCM routine with tailored risk mitigation measures, which are directly connected to particular risks (behavioral, buffer-based, and traceability measures) demonstrates proven value for improving resilience and continuity results. Specific case studies within sectors such as the halal food supply chain can be useful contributions to the valuation of these strategies. Behavioral elements in both SCRM and BCM are important to improve the network and crisis response capabilities in terms of trust-building and relationship management (Ali et al., 2021). Such methodologies are especially important in quality, and delivery risk situations, as the dependable supplier relationships contribute directly to continuity, and supply. A buffer-based kind of strategy (e.g. inventory or excess production capacity) should therefore also be in line with SCRM itself, as they give concrete protection against supply disruptions. However, such approaches may be inefficient when they are not aligned with the overall planning goals of BCM (Abed, 2024). Traceability efforts, such as dynamic monitoring and end-to-end visibility, extend BCM through increased situational awareness for better crisis coordination. Evidence from the halal food industry indicates that risk in the SCM can be significantly mitigated through behavioral and traceability mechanisms, especially when operating in complicated networks with horizontal dependencies. The findings imply that there is a social and informational dimension to risk management beyond the technical, thus, raising the need for behavior- and traceability-based approaches in future SCRM–BCM frameworks so as to optimize robustness and adequately operationalize resilience.

Network complexity, contract structure, and firm size are important contingencies of the way SCRM and BCM frameworks work in practice. Larger enterprises faced with complex supply chains might be required to establish more formalized risk and continuity management systems to adequately manage systemic risk (Azmi et al., 2021). Smaller firms, however, put their funds on more straightforward risk processes and short-term contracts, and therefore cannot adopt advanced behaviours. The contract type choice (short-run verses long run) influences directly for a firm the development of integrated strategies in risk and continuity planning, since long-term contracts facilitate coordination and planning among a set of agents, and this is easier to develop in a large size firm, because it requires long-term contracts for a significant planned

coordination among the agents (Ali et al., 2021). Proprietorship and international cooperation also influence the adoption of BCM practices, organizations with foreign affairs connect were willing to put in their capital on superior models. The variation in these factors emphasize the importance of conceptual models being flexible, and the need for them to be able to fit to organizational context and structure. There is no one-size-fits-all, as building resilience at different levels of operation and complexity demands varying strategies (Szuster & Lotko, 2022; Watson et al., 2024; Yang et al., 2021; Zhang et al., 2023). Such a flexibility should be built in the supply chain model, so that it satisfies different requirements of organizations in different supply chain settings.

The interaction of organisational sustainability, resilience capacity, and BCM results is an important and underdeveloped theme within the literature. Sustainable activities—like the care of resources, the relationship with internal and external stakeholders, and fostering of innovation—strengthen their ability to anticipate and adapt to changes for an optimal business continuity planning (Shekarian & Mellat Parast, 2021). Nonetheless, the pathways by which such practices result in continuity effects are inadequately theorized. In the meantime, dynamic capabilities, such as learning from disruptions, flexible resourcing and adaptive governance, are equally important to the capability of SCRM and BCM processes to respond to everchanging risks. Although critical, there remains a paucity of empirical evidence on how these functions are institutionally embedded in daily practice (Yang et al., 2021; Zhang et al., 2023). The absence of longitudinal research on the reinforcing association of sustainability and resilience capacities and BCM effectiveness constitutes a theoretical and practical void. They need greater guidance for how to invest in more sustainable and resilient practices in direct support of reducing risk and ensuring operational continuity. Hence, future research could focus on granularity and theoretical embedding of those constructs in business continuity models, in order to allow companies, the use of these constructs to their full capability when dealing with complex and systemic disruptions.

Case Illustration 1: Food Industry (Multinational Leader in Supplying Agricultural Products)

When COVID-19 caused countries to shut their borders and workers to be in short supply, a global agrifood supplier was greatly affected. When the company depended only on usual SCRM methods, it could not handle issues with expiring items and problems with logistics in the initial stage (Ali et al., 2021; Azmi et al., 2021).. Implementing BCM approaches—like looking for several suppliers, planning under different scenarios and digital tools for communication—supported the move to using alternative sources and adjustable scheduling. Embedding BCM in their Service Continuity Risk Management (SCRM) processes allowed the organization to lower spoilage losses by 40% and recover SLAs sooner, confirming the importance of the framework's emphasis on flexibility and teamwork among employees (Yang et al., 2021; Zhang et al., 2023).

Case Illustration 2: Healthcare Sector (Public Hospital Network)

After suffering a ransomware attack, a national hospital network used the combined SCRM-BCM model. Until the incident, SCRM protocols paid attention only to drug logistics and instrument availability, but it uncovered weaknesses in maintaining IT operations and clinical services. BCM strategies used at the hospital were real-time communication, IT redundancy

planning and procedures for staff continuity. As a result of this careful integration, the company returned to normal operations within 48 hours and policies were updated to connect procurement resilience with IT continuity, clearly demonstrating how the framework can line up special risks with company-wide resilience goals (Boyens et al., 2022; Duong & Chong, 2020; Freichel et al., 2022).

Discussion

Integration versus Differentiation: Explanation of the SCRM–BCM Boundaries

The interface between Supply Chain Risk Management (SCRM) and Business Continuity Management (BCM) is increasingly becoming a focus area for improvement towards organizational resilience in the face of systemic shocks. Even though both frameworks aim to mitigate the impact, there tends to be a lack of integration between them (Azmi et al., 2021; Shekarian & Mellat Parast, 2021; Watson et al., 2024). BCM builds resilience by improving identification, agility, and collaboration. These attributes are often ignored in conventional SCRM models. There is an increasing adoption of ISO 22301—now at 51%, up from 12% in eight years—which signifies formalization of continuity strategies (Boyens et al., 2022; Duong & Chong, 2020; Freichel et al., 2022).

Empirical studies suggest that firms which embed BCM within SCRM frameworks are more networked on visibility and collaboration KPIs during crises. These functions are better performed with network view line of sight due to improved network visibility and collaboration. On the other hand, traditional SCRM frameworks seem to be overly centered on suppliers' faces and risk neglecting organizational broad vulnerabilities (Bobel et al., 2022; Duong & Chong, 2020). This divergence leads to inefficiencies, redundancies, and lack of clarity on strategy during disruptions. Boyens et al. (2022) advocate for more defined boundaries while proposing integration strategies for overlap avoidance and unified response.

In theory, SCRM and BCM differ in scope where SCRM focuses on the supply-side risks whereas BCM concerns itself with the organization's operational continuity. However, blurring large-scale disruptions require the frameworks to be assessed together (Azmi et al., 2021). The lack of integration often leads to inefficient transfer of emergency responses, fragmented response strategies to crises, and a lower response efficiency to inter-organizational learning infrastructure. Despite being dependent on core resilience capabilities, which include adaptability, situational awareness, and dynamic learning, these systems expose a troubling lack of cohesion in practice or theory.

Through digitalization and analytics, innovation has the most notable potential to strengthen SCRM and BCM. Nonetheless, strategies for improvement that function outside of a defined framework of documented processes limit interdisciplinary collaboration (Corrales-Estrada et al., 2021). Furthermore, the combination of sustainability poses additional challenges. Sustainable approaches increase resilience, but the costs associated with implementation, complexity, regulation, and pressure stifle pragmatic adoption—particularly in complex, multi-tiered supply chains (Boyens et al., 2022)

Leadership and organizational culture, along with contextual factors such as regulation, directly impact the SCRM–BCM interface. Regulatory driven sectors such as finance and proactively risky ones like petrochemicals showcase how feedback loops and performance indicators can provide integrative learning fosters resilience (Freichel et al., 2022).

Practical Applications and Managerial Relevance

As an evolving discipline, Business Continuity Management (BCM) enhances organizational resilience by complementing traditional risk management practices with agility, collaboration, and increased visibility. The integration of BCM into Supply Chain Risk Management (SCRM) creates Shift BCM as opposed to destruction response triage, responding more accurately with resilience cross-functionally (Azmi et al., 2021).This expansive approach explains the increasing managerial recognition of continuity planning, which is also evidenced by the rise in ISO 22301 certifications from 12% in 2010 to 51% in 2018. It is important to note these certifications should be critically scrutinized, as unchecked compliance-driven adoption may neglect practical resilience beneath unsophisticated documentation frameworks (Duong & Chong, 2020).

Managers can leverage BCM to institutionalize organizational preparedness through multidisciplinary teams, scenario planning, and ongoing training– enabling faster, more coordinated crisis responses. Still, many firms do not take advantage of these practices, suggesting a gap between theoretical models and practical application. For strategic value, organizational culture is fostered in a manner that encourages diving as opposed to treating BCM as a checklist driven compliance endeavor. This approach ensures sustained effectiveness over extended periods of time (Boyens et al., 2022; Freichel et al., 2022; MacDuffie et al., 2021).

Additionally, incorporation of agile strategies and data analytics within the BCM-SCRM models enables swift adjustment of responses to evolving threats, like cyber risks and global supply shocks (Ivanov & Dolgui, 2021). But this integration is obstructed by resource constraints, organizational inertia, and lack of relevant expertise, especially in SMEs. There is a need for managerial attention to extend these practices across different organizational settings. As discussed previously, Sustainability enabling capabilities further fortifies resilience by integrating risk management with social and environmental concerns (Kalogiannidis et al., 2024; MacDuffie et al., 2021). Nevertheless, the balance between the short-term controls on risk and long-term sustainability remains a persistent challenge. It is critical that these competing priorities be resolved by a sustainable approach to decision making that pertains to choosing partners and making investments.

Deepening the conceptual framework illustrates their interconnections, underscoring that lacking decisional tenacity makes it impossible to transform BCM principles into practice. The ongoing effort to enable consistent recovery performance and maintain quality service while minimizing losses reinforces the exposed requirement for decisional tenacity. The operationalization of these concepts depends heavily on sustained managerial commitment.

Theoretical Implications and Future Research Directions

The gaps in theory and empirical work are formed by the combination of dynamic capabilities, sustainability, and SCRM integrated with BCM. While there is broad acceptance of adaptive capacity, situational awareness, and rapid decision-making as integral to resilience, their systematized inclusion within continuity strategizing and risk mitigation frameworks is underdeveloped. The failure to address this gap perpetuates a problem of how adaptive responses are theorized to be enacted under uncertainty, and the means by which organizations can embed these responses sustainably in the face of intensifying turbulence. This problem has been developed and documented by (Nege & Abegaz, 2024; Pech et al., 2021; Petrenko, 2022) within the context of claiming operationalization gaps across the SCRM–BCM interface.

There is silence in the literature about the ethical aspects of sourcing and stakeholder inclusion as sustainable practices and their contribution to resilience and continuity. This calls for an organizational learning-based approach not only to clarify the theory but also to make it useful. (RIGLIETTI, 2023) already demonstrated how aligning BCM with supply chain strategy creates value – it improves operational agility and interdepartmental collaboration, although these are usually overlooked. There is little research on the value of integrated frameworks despite increasing the effectiveness of cross-functional disconnects and the growing number of ISO 22301 certifications.

The persistent ambiguities between SCRM and BCM further affect both the application and construction of theory. SCRM has overlapping functions which leads to redundancies and inefficient workflows (e.g., risk assessment versus contingency planning). The studies (Pech et al., 2021; Petrenko, 2022; Szuster & Lotko, 2022)focus on the need for precise operational boundaries and standardization through typology-building and boundary theory to streamline practices and enable empirical benchmarks. In addition, Micro, Small and Medium Enterprises (MSMEs) face acute implementation barriers—limited resources, shallow technical knowledge, and minimal awareness— that demand context-sensitive frameworks and community-focused solutions (RIGLIETTI, 2023).

Such novel methods as hybrid machine learning models (like CatBoost), digital twins, and simulation environments represent great potential for analyzing interdependencies and cascading failures in supply networks. Regardless, most models do not have the level of detail needed for capturing dynamic and sector-specific disruptions (Szuster & Lotko, 2022). Additionally, underexplored concepts like organizational culture, cognitive resilience, and adaptive behavior are important for bridging SCRM and BCM but are largely absent from existing models. Embedding these soft factors into the frameworks and models is crucial to enabling operational and cultural resilience (Pech et al., 2021; Szuster & Lotko, 2022; Yang et al., 2021).

The study which is mainly conceptual, helps to design the structure for further empirical checks. The designed framework gathers both supply chain risk management and business continuity management by looking at cross-field literature, real-life cases and relevant standards. Due to various limitations, it was not possible to test the theory by doing

experiments. An organized plan for empirical research helps the field combine theory and practice. In the future, researchers should try mixed approaches or look over time to determine if the framework is useful in different industries. Through surveys, it is possible to evaluate the impact of practice integration on time to recover, availability of services and costs. Case studies in healthcare, food and petrochemical can explain the ways organizations apply the different transition points and capabilities suggested by the model. Also, if action research is carried out, SCRM-BCM practitioners can identify current issues and make improvements to the framework. AI and predictive analytics should also be studied to see how they can help in integrating information in resource-limited situations. Gathering evidence from many kinds of organizations and sectors will provide future research with a strong approach toward making operations more resilient in an evolving global climate.

Conclusion

This study fills an existing gap in resilience literature by untangling the conceptual and operational overlaps of the Supply Chain Risk Management (SCRM) and Business Continuity Management (BCM) systems. It refined the scope of SCRM as risk-driven and BCM as organizational, leading to a boundary-spanning meta-framework that incorporates both via dynamic capabilities, organizational learning, and cross-functional integration. The results illustrate the value of integrating BCM into risk-centric models, including enhanced operational performance, decreased vulnerabilities, and expedited recovery following disruptions. Drawing on the synthesis of empirical studies, standards analyses, and case insights, this paper challenges the effectiveness of overly rigid compliant frameworks and advocates for flexible models tailored to specific contexts. In addition, this research deepens boundary theory by embedding technological and sustainability discourse as enabling factors within resilience dialogue. For scholars, this work contributes to the expanding conversation on resilience integration while outlining tangible steps for practitioners aiming to position resilience as a preemptive strategic necessity rather than a reactive tool.

This paper is bound to encourage broadened discourse on organizational resilience, particularly on the integration of systems thinking and designing adaptive strategies for cyber risk management. As we navigate through multi-faceted and systematized risks—from cyberattacks to geopolitical disruptions—merging supply chain risk management and business continuity management (SCRM and BCM) stands out theoretically, but more so as a critical system for enduring competitiveness.

Limitations

This study has made important contributions, but it is not without its limitations. To begin with, this research is poised on a theoretical framework based on secondary data, which may limit its practical applicability. While there is rigor in the integrative framework, practical validation through no less than applied research is necessary within practically all industries and organizational scales. Second, this framework would be optimally positioned for those organizations with specific degrees of maturity and technological savviness, alongside sparsely complex sectors. For example, micro, small and medium enterprises (MSMEs) are often devoid of adequate financial, technical, and human capital to equip themselves with advanced

technologies like AI, predictive analytics, along with continuity strategy methodologies that enable comprehensive strategic foresight and predictive modeling.

Third, the addition of dynamic capabilities and sustainability enablers is sound from a theoretical perspective, but evaluating their integration into daily operations requires empirical evidence. Furthermore, the study does not adequately address some behavioral or organizational cultural aspects that may shape the adoption and broad acceptance of BCM-SCRM integration. Lastly, and perhaps most importantly, the paper employs contemporary disruptions to frame their conclusions; however, they outlined other ever-evolving threat. climate crises or digital infrastructure assaults are continuously emerging which require frameworks to be updated on a near-constant basis. Addressing these issues will require longitudinal and cross-sectoral studies to refine the model's scalability alongside interdisciplinary approaches to holistic resilience design.

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