

COLLABORATIVE SUPPLY CHAIN RESILIENCE FOR MSMEs: A FRAMEWORK FOR INFORMATION SHARING, FLEXIBILITY, AND CONTINUITY

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Abstract

This conceptual paper develops an integrative framework for collaborative supply chain resilience in micro, small, and medium enterprises (MSMEs). It synthesizes established literature on the resource-based view, dynamic capabilities, organizational learning, absorptive capacity, social capital, resilience, and entrepreneurial ecosystems. The analysis explains how supplier collaboration, information sharing, sourcing flexibility, continuity planning, and relationship governance can be organized into proportionate managerial routines. No primary survey, interview, experimental, or statistical data are claimed. The framework proposes diagnosis, capability mapping, bounded experimentation, evidence review, governance, resource reconfiguration, and learning retention as a cumulative cycle. Implications are developed for owner-managers, support institutions, and future empirical research.

Keywords: MSMEs; Collaborative Supply Chain Resilience; Dynamic Capabilities; Organizational Learning; Business Resilience

INTRODUCTION

Collaborative Supply Chain Resilience is increasingly important for MSMEs operating under volatile market, technological, and institutional conditions. The central managerial question is how supplier collaboration, information sharing, sourcing flexibility, continuity planning, and relationship governance can be translated into repeatable decisions without exceeding limited organizational capacity.

Small enterprises differ from larger organizations because ownership and management are often concentrated, formal information systems may be limited, and resource buffers are thinner. These conditions make prioritization, staged commitment, and rapid learning especially important.

The resource-based view explains why valuable resources can support advantage, while dynamic-capabilities theory explains how resources are mobilized and reconfigured when conditions change (Barney, 1991; Teece et al., 1997).

This paper develops a conceptual framework rather than claiming new empirical findings. Its purpose is to integrate established theoretical perspectives into propositions and managerial mechanisms that can later be tested in different MSME contexts.

LITERATURE REVIEW AND THEORETICAL FOUNDATION

The resource-based view emphasizes that performance depends on the quality and deployment of resources rather than on possession alone. For MSMEs, this distinction is critical because scarce financial, human, informational, and relational resources increase the cost of weak allocation decisions. In the context of collaborative supply chain resilience, this mechanism should connect supplier collaboration, information sharing, sourcing flexibility, continuity planning, and relationship governance with a clearly defined business problem and reviewable evidence.

Dynamic-capabilities theory complements the resource-based view by explaining how firms sense changes, seize feasible opportunities, and reconfigure resources under uncertainty. This perspective is especially relevant when established routines no longer fit market or technological conditions. In the context of collaborative supply chain resilience, this mechanism should connect supplier collaboration, information sharing, sourcing flexibility, continuity planning, and relationship governance with a clearly defined business problem and reviewable evidence.

Organizational learning provides a mechanism through which experience changes later decisions. Exploration expands the range of options, whereas exploitation improves the reliability of practices that already work. Sustainable adaptation requires a balance between the two. In the context of collaborative supply chain resilience, this mechanism should connect supplier collaboration, information sharing, sourcing flexibility, continuity planning, and relationship governance with a clearly defined business problem and reviewable evidence.

Absorptive capacity explains why access to external information is not sufficient. Enterprises must recognize relevant knowledge, assimilate it, transform it for local use, and apply it in recurring routines. In the context of collaborative supply chain resilience, this mechanism should connect supplier collaboration, information sharing, sourcing flexibility, continuity planning, and relationship governance with a clearly defined business problem and reviewable evidence.

Social capital introduces the relational dimension. Trusted ties can lower coordination costs, while bridging relationships can expose firms to non-redundant information and alternative resources. Both types of ties can contribute to resilience when dependence is actively managed. In the context of collaborative supply chain resilience, this mechanism should connect supplier collaboration, information sharing, sourcing flexibility, continuity planning, and relationship governance with a clearly defined business problem and reviewable evidence.

Taken together, these perspectives suggest that capability is cumulative and relational: learning, resource allocation, network access, and governance must reinforce one another over time. In the context of collaborative supply chain resilience, this mechanism should connect supplier collaboration, information sharing, sourcing flexibility, continuity planning, and relationship governance with a clearly defined business problem and reviewable evidence.

The framework therefore treats collaborative supply chain resilience as cumulative. Capability strengthens when learning from one decision improves later decisions and when managers can reconfigure resources while preserving business continuity.

CONCEPTUAL FRAMEWORK

The framework begins with problem definition. Managers identify the focal constraint, the decision that influences it, and the minimum evidence required to judge whether an intervention creates improvement. In the context of collaborative supply chain resilience, this mechanism should connect supplier collaboration, information sharing, sourcing flexibility, continuity planning, and relationship governance with a clearly defined business problem and reviewable evidence.

The second stage maps internal and external capability. Existing knowledge, routines, relationships, technology, finance, and institutional links are assessed before new resources are committed. In the context of collaborative supply chain resilience, this mechanism should connect supplier collaboration, information sharing, sourcing flexibility, continuity planning, and relationship governance with a clearly defined business problem and reviewable evidence.

The third stage is bounded experimentation. Scope, ownership, resource limits, expected learning, and a review date are specified so that uncertainty can be reduced at manageable cost. In the context of collaborative supply chain resilience, this mechanism should connect supplier collaboration, information sharing, sourcing flexibility, continuity planning, and relationship governance with a clearly defined business problem and reviewable evidence.

The fourth stage is evidence review. Managers compare outcomes with baseline conditions and distinguish activity indicators from improvements in customer value, decision quality, productivity, resilience, or financial performance. In the context of collaborative supply chain resilience, this mechanism should connect supplier collaboration, information sharing, sourcing flexibility, continuity planning, and relationship governance with a clearly defined business problem and reviewable evidence.

The fifth stage is resource reconfiguration. Effective practices receive greater commitment, while weak initiatives are redesigned or discontinued before sunk-cost logic dominates managerial judgment. In the context of collaborative supply chain resilience, this mechanism should connect supplier collaboration, information sharing, sourcing flexibility, continuity planning, and relationship governance with a clearly defined business problem and reviewable evidence.

The final stage retains learning. Simple records of assumptions, decisions, outcomes, and lessons create organizational memory and improve future adaptation. In the context of collaborative supply chain resilience, this mechanism should connect supplier collaboration, information sharing, sourcing flexibility, continuity planning, and relationship governance with a clearly defined business problem and reviewable evidence.

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CAPABILITY DEVELOPMENT AND IMPLEMENTATION

Capability development should be embedded in actual operating tasks rather than separated from day-to-day work. Training or technology is more valuable when it changes a recurring decision or process. In the context of collaborative supply chain resilience, this mechanism should connect supplier collaboration, information sharing, sourcing flexibility, continuity planning, and relationship governance with a clearly defined business problem and reviewable evidence.

Each initiative requires an accountable owner. Even in very small enterprises, someone should be responsible for information collection, coordination, resource use, review, and follow-up. In the context of collaborative supply chain resilience, this mechanism should connect supplier collaboration, information sharing, sourcing flexibility, continuity planning, and relationship governance with a clearly defined business problem and reviewable evidence.

Implementation should progress in stages that match enterprise capacity. Limited pilots reveal practical barriers and reduce the cost of uncertainty before wider deployment. In the context of collaborative supply chain resilience, this mechanism should connect supplier collaboration, information sharing, sourcing flexibility, continuity planning, and relationship governance with a clearly defined business problem and reviewable evidence.

Predetermined review points improve discipline. They reduce the risk that an initiative continues only because participants are enthusiastic or resources have already been spent. In the context of collaborative supply chain resilience, this mechanism should connect supplier collaboration, information sharing, sourcing flexibility, continuity planning, and relationship governance with a clearly defined business problem and reviewable evidence.

Documentation can remain simple: decision notes, reconciliations, checklists, customer records, and short review summaries can preserve learning without creating unnecessary bureaucracy. In the context of collaborative supply chain resilience, this mechanism should connect supplier collaboration, information sharing, sourcing flexibility, continuity planning, and relationship governance with a clearly defined business problem and reviewable evidence.

Scaling should follow evidence and capability readiness. Greater commitment should be accompanied by adequate skills, controls, and resources so that growth does not undermine continuity. In the context of collaborative supply chain resilience, this mechanism should connect supplier collaboration, information sharing, sourcing flexibility, continuity planning, and relationship governance with a clearly defined business problem and reviewable evidence.

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NETWORKS, COLLABORATION, AND ECOSYSTEM SUPPORT

MSMEs frequently depend on external actors for capabilities that are costly to internalize. Customers, suppliers, universities, associations, financial institutions, communities, and public agencies can provide complementary resources. In the context of collaborative supply chain resilience, this mechanism should connect supplier collaboration, information sharing, sourcing flexibility, continuity planning, and relationship governance with a clearly defined business problem and reviewable evidence.

Collaboration is more productive when organized around a clearly defined problem. Problem clarity allows partners to contribute relevant knowledge or access rather than generic assistance. In the context of collaborative supply chain resilience, this mechanism should connect supplier collaboration, information sharing, sourcing flexibility, continuity planning, and relationship governance with a clearly defined business problem and reviewable evidence.

Network diversity matters because different ties provide different benefits. Trusted local ties facilitate coordination, whereas bridging ties connect enterprises with novel information, markets, and specialist expertise. In the context of collaborative supply chain resilience, this mechanism should connect supplier collaboration, information sharing, sourcing flexibility, continuity planning, and relationship governance with a clearly defined business problem and reviewable evidence.

Reciprocity strengthens durable relationships. Small enterprises can contribute market insight, practical feedback, referrals, and local knowledge rather than participating only as recipients of support. In the context of collaborative supply chain resilience, this mechanism should connect supplier collaboration, information sharing, sourcing flexibility, continuity planning, and relationship governance with a clearly defined business problem and reviewable evidence.

Dependence risk should be monitored. Heavy reliance on one buyer, supplier, platform, adviser, or funding source can turn a valuable relationship into a continuity vulnerability. In the context of collaborative supply chain resilience, this mechanism should connect supplier collaboration, information sharing, sourcing flexibility, continuity planning, and relationship governance with a clearly defined business problem and reviewable evidence.

Ecosystem quality should therefore be assessed through accessibility, relevance, connectivity, and learning outcomes rather than simply the number of institutions or programs. In the context of collaborative supply chain resilience, this mechanism should connect supplier collaboration, information sharing, sourcing flexibility, continuity planning, and relationship governance with a clearly defined business problem and reviewable evidence.

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GOVERNANCE AND RISK MANAGEMENT

Governance should be proportionate to enterprise size and exposure. Its purpose is to make responsibilities, resource limits, assumptions, information ownership, and review points visible. In the context of collaborative supply chain resilience, this mechanism should connect supplier collaboration, information sharing, sourcing flexibility, continuity planning, and relationship governance with a clearly defined business problem and reviewable evidence.

Risk assessment should focus on events capable of interrupting continuity or destroying initiative value. Liquidity, operational failure, customer loss, information error, partner dependence, and reputation are common examples. In the context of collaborative supply chain resilience, this mechanism should connect supplier collaboration, information sharing, sourcing flexibility, continuity planning, and relationship governance with a clearly defined business problem and reviewable evidence.

Simple controls can be effective when they are consistently applied. Approval limits, reconciliations, backups, access rules, written partner terms, and scheduled reviews create basic accountability. In the context of collaborative supply chain resilience, this mechanism should connect supplier collaboration, information sharing, sourcing flexibility, continuity planning, and relationship governance with a clearly defined business problem and reviewable evidence.

Experimentation and control are complementary. Bounded pilots create room for learning while establishing limits that protect scarce resources and critical relationships. In the context of collaborative supply chain resilience, this mechanism should connect supplier collaboration, information sharing, sourcing flexibility, continuity planning, and relationship governance with a clearly defined business problem and reviewable evidence.

Exit criteria should be considered before scaling. Predefined thresholds make it easier to redesign or discontinue weak initiatives before sunk costs distort decision making. In the context of collaborative supply chain resilience, this mechanism should connect supplier collaboration, information sharing, sourcing flexibility, continuity planning, and relationship governance with a clearly defined business problem and reviewable evidence.

Accountability also strengthens organizational learning because assumptions and decisions can be reconstructed and compared with actual outcomes. In the context of collaborative supply chain resilience, this mechanism should connect supplier collaboration, information sharing, sourcing flexibility, continuity planning, and relationship governance with a clearly defined business problem and reviewable evidence.

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PERFORMANCE, LEARNING, AND RESILIENCE

Performance assessment should separate inputs, activities, intermediate outcomes, and business outcomes. Adoption or participation alone does not demonstrate that enterprise capability has improved. In the context of collaborative supply chain resilience, this mechanism should connect supplier collaboration, information sharing, sourcing flexibility, continuity planning, and relationship governance with a clearly defined business problem and reviewable evidence.

Intermediate outcomes can include better information, faster decisions, stronger coordination, improved customer understanding, reduced errors, or more useful access to external knowledge. In the context of collaborative supply chain resilience, this mechanism should connect supplier collaboration, information sharing, sourcing flexibility, continuity planning, and relationship governance with a clearly defined business problem and reviewable evidence.

Business outcomes depend on the focal problem and may include productivity, customer retention, cash-flow stability, market access, continuity, or recovery from disruption. In the context of collaborative supply chain resilience, this mechanism should connect supplier collaboration, information sharing, sourcing flexibility, continuity planning, and relationship governance with a clearly defined business problem and reviewable evidence.

Resilience should be understood as anticipation, coping, adaptation, and learning rather than simple persistence. The objective is to improve the enterprise's capacity to respond to future disturbances. In the context of collaborative supply chain resilience, this mechanism should connect supplier collaboration, information sharing, sourcing flexibility, continuity planning, and relationship governance with a clearly defined business problem and reviewable evidence.

Short feedback cycles make correction less costly. Delayed evaluation can allow weak routines to become embedded and make later change more difficult. In the context of collaborative supply chain resilience, this mechanism should connect supplier collaboration, information sharing, sourcing flexibility, continuity planning, and relationship governance with a clearly defined business problem and reviewable evidence.

Learning becomes strategically valuable when evidence from current action changes future behavior. Both successful and unsuccessful experiments should therefore contribute to organizational memory. In the context of collaborative supply chain resilience, this mechanism should connect supplier collaboration, information sharing, sourcing flexibility, continuity planning, and relationship governance with a clearly defined business problem and reviewable evidence.

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MANAGERIAL AND POLICY IMPLICATIONS

Owner-managers should begin with a defined constraint rather than a fashionable solution. Technology, financing, training, and partnerships create value when they improve a specific recurring decision or process. In the context of collaborative supply chain resilience, this mechanism should connect supplier collaboration, information sharing, sourcing flexibility, continuity planning, and relationship governance with a clearly defined business problem and reviewable evidence.

Support organizations should segment enterprises by problem and capability stage. Basic routines, specialist advice, finance, market access, and advanced innovation support are not equally appropriate for every firm. In the context of collaborative supply chain resilience, this mechanism should connect supplier collaboration, information sharing, sourcing flexibility, continuity planning, and relationship governance with a clearly defined business problem and reviewable evidence.

Universities can contribute through applied diagnosis, evidence synthesis, mentoring, and collaborative projects that address genuine enterprise needs. In the context of collaborative supply chain resilience, this mechanism should connect supplier collaboration, information sharing, sourcing flexibility, continuity planning, and relationship governance with a clearly defined business problem and reviewable evidence.

Financial institutions and public agencies can strengthen support by linking resources with implementation milestones and evidence of learning rather than participation counts alone. In the context of collaborative supply chain resilience, this mechanism should connect supplier collaboration, information sharing, sourcing flexibility, continuity planning, and relationship governance with a clearly defined business problem and reviewable evidence.

Associations and community organizations can create bridging connections that extend opportunity and knowledge beyond an enterprise's immediate network while preserving local trust. In the context of collaborative supply chain resilience, this mechanism should connect supplier collaboration, information sharing, sourcing flexibility, continuity planning, and relationship governance with a clearly defined business problem and reviewable evidence.

Researchers should use longitudinal and comparative designs to observe how capabilities are formed, revised, combined, and sometimes abandoned across different contexts. In the context of collaborative supply chain resilience, this mechanism should connect supplier collaboration, information sharing, sourcing flexibility, continuity planning, and relationship governance with a clearly defined business problem and reviewable evidence.

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METHOD

This manuscript uses an integrative conceptual review. Established theoretical and review literature available before the February 2025 issue placement was synthesized to connect complementary explanations of MSME resources, learning, networks, innovation, and resilience. No primary respondents, fabricated observations, experiments, or statistical estimates are reported. The framework and propositions are intended to guide subsequent empirical examination.

RESEARCH PROPOSITIONS AND FUTURE RESEARCH

P1. Stronger routines related to collaborative supply chain resilience are expected to improve the quality and timeliness of MSME adaptation decisions.

P2. Absorptive capacity is expected to strengthen the conversion of external knowledge into implementable enterprise practices.

P3. Diverse and trustworthy relationships are expected to improve access to complementary resources while reducing dependence risk.

P4. Bounded experimentation is expected to reduce the cost of uncertainty in resource-constrained enterprises.

P5. Proportionate governance and explicit review routines are expected to improve accountability and organizational learning.

P6. Learning-based resource reconfiguration is expected to strengthen enterprise resilience under environmental change.

LIMITATIONS

The framework is conceptual and cannot establish causal effects. MSMEs differ by sector, location, ownership, market conditions, and stage of development. Future studies should operationalize constructs transparently, specify sampling and measurement procedures, and compare successful and unsuccessful implementation experiences.

CONCLUSION

The paper positions collaborative supply chain resilience as an organizational capability built through disciplined learning. Its value depends on how effectively managers connect supplier collaboration, information sharing, sourcing flexibility, continuity planning, and relationship governance with evidence, governance, and resource reconfiguration. The framework favors problem-oriented support, staged commitment, and explicit review rather than symbolic adoption.

REFERENCES

- Adler, P. S., & Kwon, S.-W. (2002). Social capital: Prospects for a new concept. *Academy of Management Review*, 27(1), 17-40. <https://doi.org/10.5465/amr.2002.5922314>
- Barney, J. (1991). Firm resources and sustained competitive advantage. *Journal of Management*, 17(1), 99-120. <https://doi.org/10.1177/014920639101700108>
- Cohen, W. M., & Levinthal, D. A. (1990). Absorptive capacity: A new perspective on learning and innovation. *Administrative Science Quarterly*, 35(1), 128-152. <https://doi.org/10.2307/2393553>
- Duchek, S. (2020). Organizational resilience: A capability-based conceptualization. *Business Research*, 13, 215-246. <https://doi.org/10.1007/s40685-019-0085-7>
- Eisenhardt, K. M., & Martin, J. A. (2000). Dynamic capabilities: What are they? *Strategic Management Journal*, 21(10-11), 1105-1121. [https://doi.org/10.1002/1097-0266\(200010/11\)21:10/11<1105::AID-SMJ133>3.0.CO;2-E](https://doi.org/10.1002/1097-0266(200010/11)21:10/11<1105::AID-SMJ133>3.0.CO;2-E)
- Granovetter, M. (1985). Economic action and social structure: The problem of embeddedness. *American Journal of Sociology*, 91(3), 481-510. <https://doi.org/10.1086/228311>
- Lumpkin, G. T., & Dess, G. G. (1996). Clarifying the entrepreneurial orientation construct and linking it to performance. *Academy of Management Review*, 21(1), 135-172. <https://doi.org/10.5465/amr.1996.9602161568>
- March, J. G. (1991). Exploration and exploitation in organizational learning. *Organization Science*, 2(1), 71-87. <https://doi.org/10.1287/orsc.2.1.71>
- Nahapiet, J., & Ghoshal, S. (1998). Social capital, intellectual capital, and the organizational advantage. *Academy of Management Review*, 23(2), 242-266. <https://doi.org/10.5465/amr.1998.533225>
- Spigel, B. (2017). The relational organization of entrepreneurial ecosystems. *Entrepreneurship Theory and Practice*, 41(1), 49-72. <https://doi.org/10.1111/etap.12167>
- Stam, E. (2015). Entrepreneurial ecosystems and regional policy: A sympathetic critique. *European Planning Studies*, 23(9), 1759-1769. <https://doi.org/10.1080/09654313.2015.1061484>
- Teece, D. J. (2007). Explicating dynamic capabilities: The nature and microfoundations of sustainable enterprise performance. *Strategic Management Journal*, 28(13), 1319-1350. <https://doi.org/10.1002/smj.640>
- Teece, D. J., Pisano, G., & Shuen, A. (1997). Dynamic capabilities and strategic management. *Strategic Management Journal*, 18(7), 509-533. [https://doi.org/10.1002/\(SICI\)1097-0266\(199708\)18:7<509::AID-SMJ882>3.0.CO;2-Z](https://doi.org/10.1002/(SICI)1097-0266(199708)18:7<509::AID-SMJ882>3.0.CO;2-Z)
- West, J., & Bogers, M. (2014). Leveraging external sources of innovation: A review of research on open innovation. *Journal of Product Innovation Management*, 31(4), 814-831. <https://doi.org/10.1111/jpim.12125>
- Zahra, S. A., & George, G. (2002). Absorptive capacity: A review, reconceptualization, and extension. *Academy of Management Review*, 27(2), 185-203. <https://doi.org/10.5465/amr.2002.6587995>
- Zott, C., Amit, R., & Massa, L. (2011). The business model: Recent developments and future research. *Journal of Management*, 37(4), 1019-1042. <https://doi.org/10.1177/0149206311406265>