SvedbergOpen
DISSEMINATION OF KNOWLEDGE

International Journal of Artificial Intelligence and Machine Learning

Publisher's Home Page: https://www.svedbergopen.com/

Research Paper Open Access

A Dynamic Capability–Resilience Mechanism For Sustained Organizational Performance

Kisan Sopan Tavhare[1], Dr. Sandeep Raskar[2], Dr. Mahavir Shetiya[3], Mrs. Ashwini Shrinivas Deshpande[4] Mrs. Rina Kisan Tavahre[5]

[1] PhD Scholar, G H Raisoni International Skill Tech University, Pune, India.
[2]Dean – Student Welfare, G H Raisoni International Skill Tech University, Pune, India.
[3]Professor, SNG Institute of Management and Research, India.
[4]Assistant Professor, Suryadatta Group of Institute (Savitribai Phule Pune University).
[5]Director, Extech Certifications and Technology Services Pvt. Ltd., India.

Abstract
Business continuity management (BCM) is increasingly expected to do more than restore operations after disruption: it must help organizations anticipate threats, mobilize resources, adapt operating configurations and sustain stakeholder value under prolonged uncertainty. Yet the literatures on BCM, organizational resilience, dynamic capabilities and sustainability remain only partially integrated. This study develops a Sustainability-Embedded Dynamic Business Continuity Capability (SE-DBCC) framework in which BCM capability provides the preparedness architecture, organizational resilience acts as the principal value-conversion mechanism, dynamic capabilities enable sensing, coordination, improvisation and reconfiguration, and sustainability integration extends continuity decisions toward long-term environmental, social and economic viability. The theoretical model is grounded in a critical synthesis of more than forty peer-reviewed research papers spanning BCM evolution and embeddedness, resilience, crisis management, dynamic capabilities, supply-chain resilience, information-system continuity and sustainable resilience. An exploratory pilot survey of 30 organizational respondents is used to assess measurement reliability and preliminary nomological relationships. All five multi-item constructs show acceptable internal consistency (Cronbach's alpha = .765–.872). BCM capability is strongly associated with organizational resilience (r = .791) and organizational performance (r = .821). Regression results show significant effects of BCM on resilience (β = .826, p < .001) and performance (β = .861, p < .001), while resilience predicts performance (β = .829, p < .001). Bootstrapping indicates a significant indirect BCM → resilience → performance effect of .389 (95% CI [.153, .652]), consistent with partial mediation. Dynamic capabilities predict resilience directly but the BCM × dynamic-capabilities interaction is not significant in the pilot. The study contributes a mechanism-based conceptualization of BCM and a transparent pilot validation that can be extended through multi-sector, large-sample SEM research.

Keywords: Business Continuity Management; Organizational Resilience; Dynamic Capabilities; Sustainability Integration; Organizational Performance; ISO 22301; Crisis Management; Supply-Chain Resilience; Pilot Study.

1. Introduction

Disruptions increasingly propagate across organizational boundaries. Cyber incidents can interrupt operations and customer access; extreme weather can affect facilities, infrastructure and suppliers simultaneously; public-health events can constrain labor and logistics; and geopolitical or regulatory shocks can rapidly alter resource availability. Under these conditions, the managerial question is no longer simply whether an organization possesses a continuity plan, but whether it has developed an executable capability to preserve critical value creation while adapting to conditions that cannot be fully specified in advance.

BCM has historically evolved from disaster recovery and technology-oriented recovery toward organization-wide governance, preparedness and resilience. Herbane (2010a) documents this historical evolution, while Järveläinen (2013) shows that the embeddedness of continuity practices can reduce the business impact of information-system incidents. More recently, Awang Ali et al. (2023) synthesize BCM research and identify management support, external requirements, organizational preparedness and embedded continuity practices as central attributes, explicitly linking BCM with planned/adaptive resilience and performance. These developments support a capability-based rather than document-based interpretation of BCM.

Resilience research adds a second insight: preparedness is valuable only when it is converted into effective anticipation, coping, adaptation and renewal. Bhamra et al. (2011), Linnenluecke (2017), Williams et al. (2017) and Duchek (2020) collectively show that resilience is multidimensional, processual and rooted in

organizational capacities rather than a simple return-to-normal outcome. This implies that resilience can plausibly function as the mechanism through which continuity investments translate into organizational performance.

Dynamic Capabilities Theory provides a third bridge. Teece et al. (1997) and Teece (2007) emphasize the capacity to sense changes, seize responses and reconfigure resources. In a BCM context, Buzzao and Rizzi (2023), using 419 organizations, show that continuity requirements are associated with capabilities to improvise and coordinate people, technologies, premises and information. Joussen (2025) further synthesizes six dynamic capabilities that enable strategic change toward resilience. These studies suggest that continuity plans are not substitutes for adaptive capability; rather, preparedness and dynamic action are complementary.

Sustainability introduces a fourth dimension. Ortiz-de-Mandojana and Bansal (2016) connect long-term social and environmental practices with organizational resilience, while Negri et al. (2021) show that sustainable and resilient supply-chain research remains conceptually fragmented. A 2021 bibliometric/content review of sustainability, resilience and BCM found a bidirectional relationship between sustainability and resilience capabilities but insufficient evidence connecting both systematically to BCM. This unresolved intersection creates a meaningful theoretical opportunity.

Accordingly, this paper develops the Sustainability-Embedded Dynamic Business Continuity Capability (SE-DBCC) framework. Its core proposition is that BCM creates a preparedness architecture; organizational resilience converts that architecture into sustained functioning and performance; dynamic capabilities enable adaptive execution; and sustainability integration expands the objective from short-term restoration to long-term viability. The pilot data are used not to claim definitive causal validation, but to test whether the measurement structure and preliminary relationships are sufficiently coherent to justify a larger confirmatory study.

2. Research Problem, Gap and Novelty

2.1 Research problem

Organizations can comply with continuity requirements and still fail under novel disruption. The central research problem is therefore a capability-conversion problem: under what conditions does BCM become an organizational capacity that generates resilience and performance rather than a static portfolio of plans?

2.2 Research gaps

- Conceptual fragmentation: BCM, resilience, dynamic capabilities and sustainability are often studied in parallel rather than as a single explanatory architecture.
- Mechanism gap: many studies associate preparedness with outcomes without specifying resilience as the mechanism converting BCM into performance.
- Adaptation gap: traditional continuity logic emphasizes predetermined recovery, whereas unprecedented disruption requires improvisation, coordination and reconfiguration.
- Sustainability gap: the environmental, social and long-term resource consequences of continuity choices are insufficiently integrated into mainstream BCM models.
- Empirical-design gap: heterogeneous measures and cross-sectional studies make construct boundaries difficult to compare; transparent pilot validation is useful before expensive large-sample SEM.
- Context gap: SMEs and emerging-economy organizations face resource constraints and recurrent disruption, but resilience evidence remains uneven across settings.

2.3 Claimed novelty

The paper's novelty is not the isolated proposition that "BCM improves resilience." It is the SE-DBCC mechanism: BCM Capability → Organizational Resilience → Organizational Performance, embedded in a wider architecture of Dynamic Capabilities and Sustainability Integration. The model separates preparedness architecture (BCM), adaptive execution (dynamic capabilities), long-horizon viability (sustainability), realized adaptive capacity (resilience), and value outcomes (performance). This separation creates testable construct boundaries and avoids treating BCM and resilience as synonyms.

3. Research Aim, Questions and Objectives

Aim: To develop and preliminarily validate an integrated capability-based framework explaining how BCM, dynamic capabilities and sustainability integration contribute to organizational resilience and performance.

- RQ1. To what extent is BCM capability associated with organizational resilience?
- RQ2. Does organizational resilience explain part of the relationship between BCM capability and organizational performance?

- RQ3. What role do dynamic capabilities play in the BCM–resilience architecture?
- RQ4. How is sustainability integration related to BCM capability and resilience?
- RQ5. Does the integrated model provide a stronger theoretical explanation than a BCM-only performance model?

4. Theoretical Foundations

4.1 Dynamic Capabilities Theory

Dynamic Capabilities Theory explains how organizations renew resource configurations in changing environments. Teece et al. (1997) define dynamic capabilities around integration, building and reconfiguration of competences; Eisenhardt and Martin (2000) emphasize identifiable organizational processes; Teece (2007) specifies sensing, seizing and transforming microfoundations. For continuity research, this theory is valuable because disruption makes routine operating assumptions unstable. BCM can specify critical activities and response options, but dynamic capabilities determine whether the organization can interpret novel conditions and redeploy resources quickly.

4.2 Organizational resilience as a process capability

Resilience has been conceptualized as reliability, recovery, adaptation, renewal and design for reduced vulnerability. Lengnick-Hall et al. (2011) frame resilience as a strategic capability built through cognitive, behavioral and contextual capacities. Duchek (2020) organizes resilience around anticipation, coping and adaptation. Williams et al. (2017) integrate crisis-management and resilience research by emphasizing adversity processes. In this study, resilience is treated as the realized organizational capacity to maintain critical functions, absorb shocks, recover, learn, adapt and transform.

4.3 Sustainability-resilience complementarity

Sustainability and resilience can be complementary but are not automatically aligned. Sustainable practices may build stakeholder trust, resource efficiency and supply-network quality, while some resilience strategies can add redundancy and resource consumption. Ortiz-de-Mandojana and Bansal (2016), Chowdhury and Quaddus (2017), Negri et al. (2021) and related work suggest that the integration problem is substantive. The SE-DBCC framework therefore treats sustainability as a strategic design criterion within continuity and resilience rather than as a separate corporate-responsibility layer.

5. Critical Literature Review: 40+ Research Papers

Table 1 synthesizes more than forty peer-reviewed papers used to build the theoretical model. The purpose is critical integration rather than citation accumulation: each stream contributes a distinct mechanism, measurement insight or unresolved gap.

Study	Stream	Method	Key insight	Role in this paper
Herbane, 2010a	BCM evolution	Historical review	BCM evolved from technical recovery toward governance/resilience.	Supports capability-based BCM.
Herbane, 2010b	SME crisis management	Case studies	Small firms under-resource crisis/continuity despite vulnerability.	Motivates resource/context sensitivity.
Järveläinen, 2013	IS continuity	Survey validation	Embedded continuity practices reduce perceived business impacts.	Supports embeddedness dimension.
Awang Ali et al., 2023	BCM in SMEs	Systematic review	Management support, preparedness, external requirements and embeddedness are key.	Direct basis for BCM dimensions.
Buzzao & Rizzi, 2023	BCM + dynamic capabilities	419-organization empirical study	Improvisation and coordination support	Links adaptive capability to BCM.

			pursuit of ISO 22301 continuity requirements.	
Bhamra et al., 2011	Resilience	Literature review	Resilience spans multiple fields and requires organizational/infrastructure integration.	Shows construct breadth.
Burnard & Bhamra, 2011	Organizational resilience	Conceptual framework	Response depends on awareness, vulnerabilities and adaptive action.	Supports process view.
Linnenluecke, 2017	Business resilience	Systematic review	Five major resilience research streams use different definitions and measures.	Justifies construct clarification.
Williams et al., 2017	Adversity response	Integrative review	Crisis management and resilience are complementary research streams.	Supports process mechanism.
Duchek, 2020	Organizational resilience	Capability conceptualization	Anticipation, coping and adaptation form resilience capability.	Core resilience foundation.
Duchek et al., 2020	Diversity + resilience	Theoretical framework	Diversity can enhance resilience through cognitive and resource mechanisms.	Shows microfoundational antecedents.
Lengnick-Hall et al., 2011	Strategic resilience	Conceptual	Cognitive, behavioral and contextual capacities build resilience.	Supports multidimensional capability.
Vogus & Sutcliffe, 2007	Organizational resilience	Conceptual	Mindful organizing supports resilient functioning.	Links reliability and resilience.
Sutcliffe & Vogus, 2003	Resilience organizing	Conceptual chapter	Resilience depends on resourceful action and adaptive capacity.	Micro-process foundation.
Weick & Sutcliffe, 2007	High reliability	Research synthesis	Sensitivity to operations and preoccupation with failure improve response.	Explains anticipatory discipline.
Teece et al., 1997	Dynamic capabilities	Theory	Firms integrate/build/reconfigure competences under change.	Primary theoretical anchor.
Eisenhardt & Martin, 2000	Dynamic capabilities	Theory synthesis	Dynamic capabilities are identifiable processes with equifinality.	Avoids overly abstract DC construct.
Teece, 2007	Dynamic capabilities	Theory/microfoundations	Sensing, seizing and transforming explain sustained adaptation.	Operational logic for disruption.
Joussen, 2025	Dynamic capabilities + resilience	Systematic review, 71 papers	Six DCs enable strategic change toward resilience.	Updates capability synthesis.
Ambulkar et al., 2015	Supply-chain resilience	Scale development/empirical	Disruption orientation alone is insufficient; resource reconfiguration matters.	Supports reconfiguration mechanism.
Pettit et al., 2010	Supply-chain resilience	Framework development	Resilience emerges from balancing vulnerabilities and capabilities.	Supports capability-vulnerability logic.

Ponomarov & Holcomb, 2009	Supply-chain resilience	Conceptual synthesis	Adaptive capability enables preparation, response and recovery.	Links continuity and supply networks.
Christopher & Peck, 2004	Supply-chain resilience	Conceptual	Re-engineering, collaboration, agility and risk culture build resilient supply chains.	Extends BCM beyond firm boundary.
Sheffi & Rice, 2005	Enterprise resilience	Case-based synthesis	Flexibility and redundancy influence disruption recovery.	Clarifies efficiency-resilience trade-off.
Blackhurst et al., 2011	Global supply resilience	Empirical framework	Visibility, flexibility and collaboration support resiliency.	Supports network capabilities.
Bode et al., 2011	Disruption responses	Empirical	Response strategies depend on disruption and dependence conditions.	Highlights contingency.
Brandon-Jones et al., 2014	Supply visibility/resilience	Empirical	Visibility and connectivity support resilience and robustness.	Supports information capability.
Scholten et al., 2014	Supply-chain resilience	Empirical/case	Collaboration and visibility contribute to resilience.	Supports relational continuity.
Wieland & Wallenburg, 2013	Relational competencies	Empirical	Communication/cooperation improve resilience and robustness.	Supports coordination mechanism.
Chowdhury & Quaddus, 2017	Supply-chain resilience	Scale/model development	Readiness, response and recovery capabilities predict resilience.	Measurement insight.
Ortiz-de-Mandojana & Bansal, 2016	Sustainability + resilience	Longitudinal empirical	Social/environmental practices can strengthen long-term resilience.	Sustainability-performance bridge.
Negri et al., 2021	Sustainable + resilient supply chains	Systematic review	Integration remains nascent and measurement fragmented.	Direct sustainability gap.
Sustainability review, 2021	Sustainability + resilience + BCM	Bibliometric/content review	Insufficient evidence connects sustainability/resilience capabilities to BCM.	Direct SE-DBCC research gap.
Avery & Bergsteiner, 2011	Sustainable leadership	Comparative/conceptual	Long-term stakeholder orientation supports durable organizational performance.	Leadership/viability mechanism.
Eccles et al., 2014	Corporate sustainability	Longitudinal empirical	High-sustainability firms develop distinct governance/processes and performance patterns.	Institutionalization logic.
Fiksel et al., 2015	Supply-chain resilience	Applied framework	Resilience requires adaptive capacity across networks.	Connects sustainability/risk systems.
Hamel & Välikangas, 2003	Strategic resilience	Conceptual	Strategic renewal should precede crisis-driven necessity.	Transformative resilience logic.

Lengnick-Hall & Beck, 2005	Strategic resilience	Conceptual	Resilience can be developed as strategic capacity before disruption.	Anticipation/renewal mechanism.
Somers, 2009	Organizational resilience potential	Empirical scale	Resilience potential can be assessed before crisis.	Supports ex ante measurement.
McManus et al., 2008	Organizational resilience	Empirical framework	Situation awareness, vulnerabilities and adaptive capacity shape resilience.	Operational resilience dimensions.
Lee et al., 2013	Resilience measurement	Empirical scale	Benchmarking organizational resilience is feasible using multidimensional indicators.	Measurement foundation.
Conz & Magnani, 2020	Firm resilience	Systematic review	Resilience unfolds dynamically across phases and levels.	Supports temporal process model.
Hillmann & Guenther, 2021	Organizational resilience	Systematic review	Definitions and operationalizations remain heterogeneous.	Reinforces construct discipline.
Sahebjamnia et al., 2015	BCM/disaster recovery	Optimization/modeling	Integrated continuity and disaster recovery can improve preparedness decisions.	Quantitative BCM design insight.
Torabi et al., 2014	Business continuity planning	Decision model	BCM requires structured risk/impact prioritization under uncertainty.	Supports analytical preparedness.
Gibb & Buchanan, 2006	BCM knowledge management	Conceptual/practice	Continuity effectiveness depends on knowledge capture and organizational learning.	Learning mechanism.
Herbane, Elliott & Swartz, 2004	BCM value	Empirical/conceptual	BCM can create organizational learning and strategic value beyond recovery.	Performance-value rationale.
Pal et al., 2014	SME resilience	Empirical	Resourcefulness, competitiveness and dynamic capabilities shape SME resilience.	Emerging/SME relevance.
Sullivan-Taylor & Branicki, 2011	SME resilience	Qualitative	SME resilience depends on flexibility, relationships and managerial behavior.	Human/relational mechanism.
Kantur & İşeri-Say, 2015	Organizational resilience	Scale development	Robustness, agility and integrity can be measured as resilience dimensions.	Alternative measurement lens.

5.1 Synthesis of the BCM stream

The BCM stream has moved through three broad logics: technical recovery, enterprise continuity governance, and resilience-oriented capability. Historical and SME studies show that formalization is uneven and often resource constrained. Information-systems evidence demonstrates that embeddedness—not merely alertness—can reduce incident impacts. Recent systematic and empirical work strengthens the capability interpretation by emphasizing management support, preparedness, embedded practices, improvisation and

coordination. The unresolved issue is how these elements generate performance; the present paper locates organizational resilience as the intervening mechanism.

5.2 Synthesis of the resilience stream

The resilience literature is conceptually rich but operationally heterogeneous. Reviews identify reliability, recovery, adaptation, employee strengths, business-model adaptability and supply-network design as distinct traditions. Capability-based work converges around anticipation, coping, learning and adaptation. Therefore, the present model avoids defining resilience as "having a BCM plan" and measures it through maintained critical functions, shock absorption, recovery, learning, adaptation and transformation.

5.3 Synthesis of dynamic capabilities and disruption response

Dynamic-capabilities scholarship explains why predetermined routines may fail when disruption changes the decision environment. Sensing supports threat recognition; seizing supports rapid resource commitment; transforming supports process and asset reconfiguration. Supply-chain studies reinforce this logic by showing that disruption orientation without reconfiguration infrastructure is insufficient. BCM-specific evidence from Buzzao and Rizzi (2023) further identifies improvisation and coordination as continuity-relevant capabilities. The literature therefore supports a direct DC → resilience path, while the moderation mechanism remains theoretically plausible but empirically open.

5.4 Synthesis of sustainability and resilience

Sustainability and resilience overlap in long-term orientation but differ in their focal problem. Sustainability asks whether value creation can persist without eroding environmental, social and economic systems; resilience asks whether value creation can persist or adapt under disturbance. Reviews of sustainable-resilient supply chains warn against assuming automatic synergy. The SE-DBCC framework treats sustainability integration as an antecedent/design principle that can improve the quality of continuity choices and resilience resources.

5.5 Integrative gap statement

Across the 40+ studies, four recurring mechanisms emerge—preparedness/embeddedness, sensing/reconfiguration, relational/knowledge coordination, and long-horizon stakeholder/resource viability. Yet these mechanisms are rarely modeled together with resilience explicitly positioned between BCM and performance. This is the precise theoretical gap addressed by SE-DBCC.

6. Conceptual Framework and Hypotheses

The proposed model contains five constructs: Business Continuity Management Capability (BCMC), Dynamic Capabilities (DC), Sustainability Integration (SI), Organizational Resilience (OR), and Organizational Performance (OP).

- H1: BCM capability positively influences organizational resilience.
- H2: BCM capability positively influences organizational performance.
- H3: Organizational resilience positively influences organizational performance.
- H4: Organizational resilience mediates the relationship between BCM capability and organizational performance.
- H5: Dynamic capabilities positively influence organizational resilience.
- H6: Dynamic capabilities positively moderate the BCM capability → organizational resilience relationship.
- H7: Sustainability integration positively influences BCM capability.
- H8: Sustainability integration positively influences organizational resilience.
- H9: BCM capability has a significant indirect effect on organizational performance through organizational resilience.
- H10: An integrated BCM–DC–SI model explains substantial variance in organizational resilience.

7. Research Methodology

7.1 Philosophy and design

The study follows a positivist, deductive and quantitative orientation. The present phase is a cross-sectional exploratory pilot designed to test questionnaire clarity, reliability and preliminary nomological relationships before large-sample confirmatory validation.

7.2 Population and sampling
The target population comprises managers and professionals with knowledge of continuity, risk, quality, operations, supply chain, IT/cybersecurity, sustainability, HSE, finance, HR or strategic management. The pilot contains 30 complete organizational respondents across multiple industries and organization sizes. Purposive access to knowledgeable respondents is appropriate for the pilot, but the confirmatory study should use a substantially larger stratified multi-sector sample.

7.3 Measurement instrument
All core constructs were measured using seven-point Likert items (1 = Strongly Disagree; 7 = Strongly Agree). BCMC contains 10 items covering critical-activity identification, BIA, strategies, leadership, roles, exercising, training, alternatives, third-party continuity and learning. DC contains seven items covering sensing, interpretation, mobilization, coordination, improvisation, reconfiguration and learning. SI contains five items covering environmental, social/economic, stakeholder, supplier and long-term viability considerations. OR contains six items covering maintenance, adaptation, recovery, absorption, learning and transformation. OP contains five items covering customer service, loss containment, recovery, stakeholder confidence and competitive performance.

7.4 Pilot analysis strategy
The analysis uses data screening, construct means, Cronbach's alpha, Pearson correlations, ordinary least squares regression, mediation analysis with bootstrapped confidence intervals, and exploratory moderation using a mean-centered BCM × DC interaction. Given n = 30, inferential estimates are interpreted as preliminary effect signals. CFA, AVE, composite reliability, HTMT, measurement invariance and full SEM are reserved for the larger confirmatory sample.

7.5 Common-method and validity safeguards for the full study
The final study should separate predictor and outcome sections psychologically, assure anonymity, randomize item order where feasible, use marker-variable or latent-method-factor checks, test collinearity, and obtain objective/secondary performance indicators for a subsample. Measurement validation should include standardized loadings, CR, AVE, HTMT and model-fit indices. These steps are specified prospectively rather than retrofitted to the pilot.

8. Pilot Results
8.1 Data quality and sample status
All 30 pilot records were complete for the analyzed variables. The sample is deliberately treated as exploratory. It is sufficient for instrument screening and preliminary relationships but not for definitive structural-equation validation or broad population generalization.

8.2 Reliability and construct descriptives

Construct	Items	Mean	Cronbach α
BCM Capability	10	5.497	0.872
Dynamic Capabilities	7	5.462	0.812
Sustainability Integration	5	5.347	0.810
Organizational Resilience	6	5.567	0.765
Organizational Performance	5	5.567	0.789

All alpha coefficients exceed .70, indicating acceptable pilot internal consistency. BCM capability shows the highest reliability (α = .872). These values support retaining the five-construct architecture for larger-sample validation, while recognizing that alpha alone does not establish convergent or discriminant validity.

8.3 Correlation and regression findings
BCM capability is strongly correlated with organizational resilience (r = .791) and organizational performance (r = .821). Organizational resilience and performance are also strongly associated. In simple regressions, BCM significantly predicts resilience (β = .826, p < .001, R^2 = .626) and performance (β = .861, p < .001, R^2 = .674). Resilience significantly predicts performance (β = .829, p < .001, R^2 = .680). Dynamic capabilities predict

resilience (β = .784, p < .001). Sustainability integration predicts BCM (β = .620, p < .001) and resilience (β = .633, p < .001).

8.4 Mediation

The pilot provides its most theoretically informative result in the mediation model. BCM significantly predicts resilience, and resilience remains significant when BCM and resilience jointly predict performance. The bootstrapped indirect BCM → OR → OP effect is .389 with a 95% confidence interval [.153, .652], excluding zero. The direct BCM effect remains significant, indicating partial rather than full mediation. This pattern is consistent with the proposed mechanism that BCM creates value partly by building resilience.

8.5 Moderation and integrated model

Although Dynamic Capabilities show a strong direct association with resilience, the BCM × DC interaction is not significant in the pilot (β = −.052, p = .721). H6 is therefore not supported. This non-result is retained because it refines the theory: DC may function as a parallel/direct resilience capability rather than a multiplicative amplifier of BCM, or the small pilot may lack power to detect an interaction. A three-predictor exploratory model containing BCM, DC and SI explains 67.6% of the variance in resilience (adjusted R^2 = 63.8%), providing a strong signal for confirmatory testing.

8.6 Hypothesis decisions

Hypothesis	Relationship	Pilot decision
H1	BCM → OR	Supported
H2	BCM → OP	Supported
H3	OR → OP	Supported
H4	OR mediates BCM → OP	Supported (partial)
H5	DC → OR	Supported
H6	BCM × DC → OR	Not supported
H7	SI → BCM	Supported
H8	SI → OR	Supported
H9	BCM indirect → OP via OR	Supported
H10	Integrated predictors explain OR	Preliminarily supported

9. Discussion

The pilot evidence is consistent with a mechanism-based interpretation of BCM. The strong BCM–resilience relationship supports the view that continuity governance, BIA, strategies, exercises, alternatives and learning can constitute an organizational capability rather than a static compliance artifact. This aligns with Herbane's historical account of BCM evolution, Järveläinen's embeddedness findings, Awang Ali et al.'s systematic review and Buzzao and Rizzi's capability-based empirical evidence.

The partial mediation result advances the argument further. If BCM predicted performance only directly, continuity could be interpreted primarily as loss avoidance. Instead, the significant indirect effect indicates that resilience—maintenance, absorption, recovery, adaptation and learning—is a plausible value-conversion mechanism. This connects BCM research to the process-capability logic of Duchek (2020), Williams et al. (2017) and Linnenluecke (2017).

Dynamic capabilities require a more nuanced interpretation. Their direct relationship with resilience is theoretically coherent with Teece's sensing–seizing–transforming logic and with supply-chain evidence emphasizing resource reconfiguration. However, the unsupported interaction cautions against assuming that DC necessarily strengthens every BCM effect multiplicatively. The full study should compare alternative structural models: DC as antecedent to BCM, DC as parallel antecedent to resilience, and second-order capability architectures.

Sustainability integration also displays meaningful preliminary associations. The finding supports the proposition that continuity choices become more robust when they incorporate environmental risk, stakeholder impacts, supplier sustainability and long-term viability. This is consistent with the literature identifying an underdeveloped intersection between sustainability, resilience and BCM. Importantly, the model does not claim that sustainability and resilience are identical; it proposes that sustainability can improve the design horizon and resource logic of continuity decisions.

10. Theoretical Contributions

- SE-DBCC construct architecture: The study distinguishes preparedness architecture (BCM), adaptive execution (DC), long-horizon viability (SI), realized adaptive capacity (OR), and value outcomes (OP).
- Mechanism contribution: Organizational resilience is modeled as a mediator rather than used interchangeably with BCM.
- Boundary contribution: The non-significant moderation result constrains the dynamic-capabilities claim and motivates competing structural models rather than post-hoc confirmation.
- Sustainability contribution: Sustainability is incorporated as a continuity design principle, extending recovery logic toward stakeholder and resource viability.
- Measurement contribution: The pilot establishes a coherent five-construct instrument suitable for refinement and large-sample CFA/SEM.

11. Managerial and Policy Implications

Managers should evaluate BCM maturity through executable capabilities, not the presence of documents. Exercises should test decision-making under ambiguous scenarios, supplier failures, cyber/technology loss, workforce constraints and sustainability trade-offs. Continuity governance should connect risk, operations, IT, supply chain, sustainability and senior leadership. The mediation result suggests that BCM investment cases should include resilience outcomes—adaptive capacity, faster recovery, stakeholder confidence and learning—rather than only compliance or expected-loss reduction.

For SMEs and policy institutions, capability-building programs may be more useful than template-driven continuity requirements. Training, shared supplier intelligence, scenario exercises, digital backup capability and access to external expertise can reduce the resource disadvantage identified in SME continuity literature.

12. Limitations and Research Agenda

The pilot has important limitations. First, n = 30 limits statistical power, especially for interaction effects, and prevents robust CFA/SEM. Second, cross-sectional self-report data are vulnerable to common-method variance and cannot establish temporal causality. Third, the heterogeneous multi-sector sample is useful for instrument screening but too small for sector comparisons. Fourth, subjective performance measures should be supplemented with objective indicators where possible.

The confirmatory study should target several hundred valid responses, pre-register the model where feasible, validate the measurement model using CFA or PLS-SEM as theoretically appropriate, assess CR/AVE/HTMT and collinearity, bootstrap direct/indirect effects, test competing models, perform multi-group analysis by organization size/sector/ISO 22301 status, and examine predictive performance. A longitudinal or disruption-event design would provide stronger causal evidence.

13. Conclusion

This paper reframes business continuity as a strategic capability system rather than a recovery document. The proposed SE-DBCC framework explains continuity performance through a layered mechanism: BCM establishes preparedness and embedded routines; dynamic capabilities enable sensing, mobilization and reconfiguration; sustainability integration expands the time horizon and stakeholder/resource logic; organizational resilience converts these capabilities into maintained and adaptive functioning; and resilience contributes to sustained organizational performance. The 30-response pilot provides encouraging reliability and nomological evidence, particularly the significant partial mediation of BCM's performance effect through resilience. At the same time, the unsupported dynamic-capabilities moderation demonstrates the value of transparent exploratory testing. The next stage is not to overstate the pilot, but to subject the framework to rigorous multi-sector confirmatory validation.

11. Expanded Critical Literature Synthesis: Forty-Plus Research-Paper Evidence Base

The literature review was strengthened as a structured integrative synthesis rather than a citation inventory. The purpose is to compare theoretical assumptions, units of analysis, mechanisms and empirical findings across BCM, organizational resilience, dynamic capabilities, sustainability, crisis management and supply-chain resilience. The synthesis deliberately combines foundational studies with recent systematic reviews and empirical work because the proposed SE-DBCC framework depends on conceptual continuity across these research traditions. More than forty peer-reviewed papers are discussed below; the argument is organized around what each stream explains, where it remains incomplete, and how the streams jointly motivate the proposed mechanism.

11.1 From disaster recovery to strategic BCM

Gibb and Buchanan (2006) formalized BCM as an organization-wide framework rather than an IT-only recovery activity. Herbane, Elliott and Swartz (2004) argued for a strategic role for BCM, while Herbane (2010a) traced the historical shift from technical disaster recovery toward integrated continuity governance. Torabi, Soufi and Sahebjamnia (2014) strengthened the analytical side of BCM through business impact analysis, and Sahebjamnia, Torabi and Mansouri (2015) integrated continuity and disaster-recovery planning with organizational resilience. Together, these studies establish that mature BCM requires prioritization, resource allocation, recovery objectives and governance, not merely a written emergency plan.

Järveläinen (2013) demonstrated the relevance of embedded continuity practices in information-systems incidents, showing why continuity must be integrated into normal organizational routines. Awang Ali, Hanafiah and Mogindol (2023), in a systematic review of SME BCM research, identified management support, external requirements, organizational preparedness and embeddedness as recurring attributes. Their integrated BCM-resilience-performance framework is especially important for the present study because it suggests that continuity practices should be evaluated by the resilience and performance they enable rather than by documentary compliance alone.

11.2 Resilience as anticipation, absorption, adaptation and transformation

Bhamra, Dani and Burnard (2011) showed that resilience research is conceptually diverse and called for stronger theoretical integration. Burnard and Bhamra (2011) subsequently developed a framework of organizational responses to disruption. Somers (2009) emphasized resilience potential in crisis planning, while McManus et al. (2008) operationalized organizational resilience improvement through facilitated assessment. Lee, Vargo and Seville (2013) advanced measurement by developing an organizational resilience benchmarking tool. These studies collectively move resilience beyond a binary survive/fail outcome.

Lengnick-Hall, Beck and Lengnick-Hall (2011) conceptualized organizational resilience as a strategic capacity grounded in cognitive, behavioral and contextual capabilities. Linnenluecke (2017) demonstrated that management research uses multiple resilience traditions, cautioning against construct ambiguity. Williams et al. (2017) connected crisis management and resilience research and emphasized temporal processes surrounding adversity. Duchek (2020) offered one of the clearest capability-based models by organizing resilience around anticipation, coping and adaptation. Hillmann and Guenther (2021) further questioned construct boundaries and measurement. The present paper responds by defining resilience as a realized capability distinct from BCM preparedness.

11.3 Dynamic capabilities as the adaptive execution mechanism

Teece, Pisano and Shuen (1997) established dynamic capabilities as the capacity to integrate, build and reconfigure competences under environmental change. Eisenhardt and Martin (2000) clarified that dynamic capabilities can be identifiable organizational processes rather than mysterious firm attributes. Teece (2007) later articulated sensing, seizing and transforming microfoundations. These foundations are highly relevant to disruption because continuity plans specify intended responses, whereas dynamic capabilities explain how organizations recognize novelty, mobilize resources and alter configurations when the plan no longer fits.

Buzzao and Rizzi (2023) provide direct empirical support for applying dynamic capabilities to BCM. Their study of 419 organizations found that pursuit of ISO 22301-related continuity requirements depends on capabilities to improvise and coordinate people, technology, premises and information. This result is central to SE-DBCC: BCM is treated as preparedness architecture and dynamic capabilities as adaptive execution. The pilot finding that dynamic capabilities directly predict resilience but do not significantly moderate BCM in n=30 should therefore be interpreted as preliminary evidence of an additive capability pathway, not evidence against the broader dynamic-capability logic.

11.4 Supply-chain resilience and interorganizational continuity

Christopher and Peck (2004) and Sheffi and Rice (2005) placed flexibility, visibility and supply-network design at the center of enterprise resilience. Ponomarov and Holcomb (2009) clarified the supply-chain resilience construct, while Pettit, Fiksel and Croxton (2010) proposed balancing vulnerabilities and capabilities. Blackhurst, Dunn and Craighead (2011) developed an empirically grounded global supply-resiliency framework. Bode et al. (2011) showed that disruption responses depend on information-processing and resource-dependence conditions.

Wieland and Wallenburg (2013) demonstrated the role of relational competencies; Scholten, Scott and Fynes (2014) examined mitigation processes; Brandon-Jones et al. (2014) used a contingent resource-based perspective; Ambulkar, Blackhurst and Grawe (2015) developed and empirically tested a firm-level disruption-

resilience scale. Chowdhury and Quaddus (2017) explicitly used dynamic capability theory for supply-chain resilience scale development. This stream demonstrates that organizational continuity is partly relational: supplier dependencies, information sharing, redundancy and reconfiguration across firm boundaries must be included in BCM capability.

11.5 Sustainability-resilience complementarity and tension

Ortiz-de-Mandojana and Bansal (2016) showed that sustainable business practices can generate long-term organizational resilience benefits. Eccles, Ioannou and Serafeim (2014) documented how high-sustainability firms differ in governance and organizational processes, while Avery and Bergsteiner (2011) linked sustainable leadership practices with resilience and performance. Negri et al. (2021) systematically reviewed the sustainability-resilience interface in supply chains and identified the need for more integrated research.

Corrales-Estrada et al. (2021) directly examined sustainability, resilience capabilities and BCM using bibliometric and content analysis. They found evidence of a bidirectional relationship between sustainability and resilience capabilities but insufficient evidence fully connecting both with BCM. Ciasullo, Chiarini and Palumbo (2024) reviewed 51 contributions at the sustainability-resilience intersection and argued for an eco-social interpretation of resilience. Florez-Jimenez et al. (2025) mapped the academic traditions connecting corporate sustainability, resilience and purpose. Kassier (2024) similarly identified incomplete interfaces among sustainability, resilience and sustainable business models. These findings justify treating sustainability integration as a theoretically meaningful component rather than a decorative ESG variable.

11.6 SME and resource-constraint perspective

Herbane (2010b) argued that small-business research requires a crisis-based perspective, and Sullivan-Taylor and Branicki (2011) cautioned that resilience prescriptions cannot simply be transferred uniformly across SMEs. Pal, Torstensson and Mattila (2014) empirically examined antecedents of resilience among Swedish textile and clothing SMEs during economic crisis. Awang Ali et al. (2023) further showed that SME BCM adoption is shaped by management support, external requirements, preparedness and embeddedness. These studies matter because continuity capability is resource-dependent: smaller firms may rely more heavily on managerial flexibility, relationships and improvisation than on formal redundancy.

11.7 Crisis management, high reliability and organizational learning

Weick and Sutcliffe (2007) emphasize mindful organizing and sensitivity to operations in environments where failure can escalate rapidly. Sutcliffe and Vogus (2003) frame resilience as emerging from organizational processes that enable positive adjustment under strain. Vogus and Sutcliffe (2007) connect resilience to theory-building around organizational reliability. Fiksel et al. (2015) shift risk management toward resilience by emphasizing learning from disruption. These contributions support the learning component of SE-DBCC: exercises and incidents should modify routines, assumptions, supplier strategies and resource configurations rather than merely close corrective-action records.

11.8 Construct separation: BCM, operational resilience and organizational resilience

An important recent clarification comes from Galaitsi et al. (2023), who synthesize commonalities and distinctions among business continuity management, operational resilience and organizational resilience. This distinction prevents conceptual inflation. In SE-DBCC, BCM is the managed preparedness system; operational resilience concerns continuity of important services and operations; organizational resilience is the broader capacity to anticipate, absorb, adapt, learn and transform. Keeping these constructs separate makes mediation theoretically interpretable rather than tautological.

12. Literature-Derived Research Gap and SE-DBCC Theoretical Contribution

The review reveals a convergence without full integration. BCM research increasingly recognizes embeddedness and organizational preparedness; resilience research increasingly treats resilience as a process capability; dynamic-capability research explains resource reconfiguration; sustainability research increasingly links long-horizon viability with resilience; and supply-chain research demonstrates that disruption capability crosses organizational boundaries. Yet these streams frequently use different dependent variables and construct labels. As a result, the field still lacks a parsimonious mechanism explaining how formal continuity preparedness becomes realized resilience and, ultimately, performance.

The proposed Sustainability-Embedded Dynamic Business Continuity Capability (SE-DBCC) framework addresses this gap by separating five functions. First, BCM capability supplies preparedness architecture: critical-activity identification, business impact analysis, strategies, roles, training, exercises, alternatives and

supplier continuity. Second, dynamic capabilities supply adaptive execution through sensing, mobilization, coordination, improvisation, learning and reconfiguration. Third, sustainability integration introduces environmental, social, stakeholder and long-term viability criteria into continuity choices. Fourth, organizational resilience represents the realized capacity to absorb, adapt, recover, learn and transform. Fifth, organizational performance captures continuity of customer value, loss containment, recovery speed, stakeholder confidence and competitive performance.

This separation produces a mechanism-based contribution. Rather than assuming that BCM and resilience are synonymous, SE-DBCC proposes that BCM can create resilience, and that resilience can convert continuity investments into performance. The significant pilot indirect effect is consistent with this logic. Dynamic capabilities are not assumed to be universally moderating; they may operate as direct antecedents, complements or boundary conditions depending on context and sample size. Sustainability is likewise modeled as an embedded design orientation that may strengthen both BCM and resilience. This architecture is sufficiently explicit to be falsifiable in a larger confirmatory study.

13. Strengthened Methodological Positioning and Analytical Strategy

The empirical component is deliberately designated a pilot study. Thirty valid responses are sufficient for questionnaire pretesting, preliminary reliability assessment, descriptive analysis and exploratory examination of nomological relationships, but they are not sufficient for strong claims of population-level structural equation model validation. The manuscript therefore avoids global model-fit indices, latent-variable causal claims and subgroup comparisons that would be unstable at n=30.

The questionnaire uses a seven-point Likert response format and five multi-item constructs: BCM capability (10 items), dynamic capabilities (7), sustainability integration (5), organizational resilience (6) and organizational performance (5). Content domains were aligned with the literature reviewed above. Reliability was assessed using Cronbach's alpha; construct means were computed from item scores; Pearson correlations examined bivariate associations; ordinary least squares regressions examined preliminary direct effects; mediation was evaluated using a bootstrapped indirect effect; and the proposed interaction between BCM and dynamic capabilities was tested using a product term.

For the confirmatory phase, the recommended design is a multi-sector sample of at least 300 usable responses, preferably 400 or more where feasible. The measurement model should be evaluated using standardized loadings, composite reliability, rho_A, average variance extracted, HTMT and collinearity diagnostics. The structural model should report standardized path coefficients, confidence intervals, effect sizes and predictive metrics. Common-method risk should be addressed procedurally through respondent anonymity, item separation and neutral wording, and statistically through appropriate diagnostics. Measurement invariance should precede meaningful multi-group comparisons.

14. Extended Interpretation of the Pilot Findings

The pilot results are theoretically coherent in three ways. First, BCM capability exhibits the highest reliability among the five constructs (alpha = .872), indicating that the ten-item measure behaves consistently enough to justify further refinement rather than wholesale redesign. Second, the strong BCM-resilience and BCM-performance relationships are consistent with the view that embedded continuity practices are strategic organizational capabilities. Third, the significant bootstrapped indirect effect through resilience supports the mechanism at the center of SE-DBCC: continuity capability appears to generate part of its performance value through the organization's realized ability to absorb, recover and adapt.

The non-significant BCM × dynamic-capabilities interaction is also informative. A small pilot has limited power to detect interaction effects, which typically require larger samples than main effects. More importantly, Buzzao and Rizzi (2023) suggest that improvisation and coordination are themselves capabilities involved in pursuing continuity. It is therefore plausible that dynamic capabilities operate as parallel or antecedent capabilities rather than as a simple multiplicative moderator. The confirmatory study should compare competing specifications instead of prespecifying only one moderation model.

Sustainability integration shows positive preliminary relationships with both BCM and resilience. This aligns with Corrales-Estrada et al. (2021) and later sustainability-resilience reviews, but the present pilot cannot establish temporal ordering. A stronger longitudinal design could test whether sustainability-oriented governance improves continuity capability over time, whether resilient organizations subsequently deepen sustainability practices, or whether the relationship is reciprocal.

15. Research-Paper Literature Evidence Matrix

Table 6 summarizes more than forty core research papers used to construct the theoretical argument. The matrix is intended to demonstrate synthesis rather than citation accumulation: each study is linked to a specific role in the proposed framework.

Study	Research stream	Method	Key contribution	Role in SE-DBCC
Herbane et al., 2004	BCM strategy	Conceptual/managerial	Argues BCM should have a strategic role	BCM as strategic capability
Gibb & Buchanan, 2006	BCM framework	Framework	Organization-wide BCM framework	Preparedness architecture
Herbane, 2010a	BCM evolution	Historical review	Shift from disaster recovery to integrated BCM	BCM evolution
Herbane, 2010b	SME crisis	Conceptual/review	Small firms need crisis-based perspective	Resource constraints
Järveläinen, 2013	IS continuity	Empirical	Embedded continuity reduces incident impact	Embeddedness
Torabi et al., 2014	Business impact analysis	Methodological	Structured BIA framework	Criticality analysis
Sahebjamnia et al., 2015	BCM + disaster recovery	Optimization/framework	Integrates continuity and recovery toward resilience	BCM-resilience link
Awang Ali et al., 2023	SME BCM	Systematic review	Management support, preparedness, external requirements, embeddedness	Integrated BCM-resilience-performance
Bhamra et al., 2011	Resilience	Literature review	Highlights conceptual fragmentation	Construct clarity
Burnard & Bhamra, 2011	Organizational response	Conceptual framework	Models responses to disruption	Adaptive response
Somers, 2009	Resilience potential	Empirical/conceptual	Measures resilience potential for crisis planning	Preparedness
McManus et al., 2008	Organizational resilience	Applied empirical	Facilitated resilience improvement process	Assessment
Lee et al., 2013	Resilience measurement	Scale/tool development	Benchmarking tool for organizational resilience	Measurement
Lengnick-Hall et al., 2011	Strategic resilience	Conceptual	Cognitive, behavioral, contextual	Capability basis

			resilience capacities	
Linnenluecke, 2017	Resilience research	Review	Maps influential resilience traditions	Construct boundary
Williams et al., 2017	Crisis + resilience	Integrative review	Fuses crisis-management and resilience streams	Adversity process
Duchek, 2020	Organizational resilience	Conceptual	Anticipation-coping-adaptation model	Mediator logic
Hillmann & Guenther, 2021	Resilience construct	Systematic/conceptual review	Evaluates value and ambiguity of resilience construct	Measurement discipline
Teece et al., 1997	Dynamic capabilities	Theory	Integration, building and reconfiguration	Theoretical foundation
Eisenhardt & Martin, 2000	Dynamic capabilities	Theory	Dynamic capabilities as identifiable processes	Operationalization
Teece, 2007	Dynamic capabilities	Theory	Sensing, seizing, transforming microfoundations	Adaptive execution
Buzzao & Rizzi, 2023	BCM dynamic capabilities	Empirical, n=419	Improvisation and coordination support continuity requirements	Direct BCM evidence
Christopher & Peck, 2004	Supply resilience	Conceptual	Resilient supply-chain design	Interorganizational continuity
Sheffi & Rice, 2005	Enterprise resilience	Conceptual/cases	Flexibility and supply-chain resilience	Flexibility
Ponomarov & Holcomb, 2009	Supply resilience	Conceptual review	Clarifies supply-chain resilience construct	Construct definition
Pettit et al., 2010	Supply resilience	Framework	Balances vulnerabilities and capabilities	Capability portfolio
Blackhurst et al., 2011	Global supply resilience	Empirical	Empirically derived resilience framework	Network resilience
Bode et al., 2011	Disruption response	Empirical	Explains firm responses to supply disruption	Response mechanism
Wieland & Wallenburg, 2013	Relational resilience	Empirical	Relational competencies influence resilience	External coordination

Scholten et al., 2014	Mitigation	Empirical	Mitigation processes build resilience	Preparedness process
Brandon-Jones et al., 2014	Supply resilience	Empirical	Contingent resource-based explanation	Resource configuration
Ambulkar et al., 2015	Firm resilience	Scale + empirical	Develops disruption-resilience scale	Measurement
Chowdhury & Quaddus, 2017	Supply resilience	Scale + dynamic capabilities	Dynamic-capability-based scale	DC-resilience link
Eccles et al., 2014	Corporate sustainability	Longitudinal empirical	Sustainability linked to governance/process differences	Sustainability capability
Ortiz-de-Mandojana & Bansal, 2016	Sustainability + resilience	Longitudinal empirical	Sustainable practices yield long-term resilience benefits	Long-horizon viability
Negri et al., 2021	Sustainability + resilience	Systematic review	Identifies integration gaps in supply chains	Integration gap
Corrales-Estrada et al., 2021	Sustainability + resilience + BCM	Bibliometric/content review	Insufficient evidence fully connecting three domains	Core research gap
Ciasullo et al., 2024	Sustainability + resilience	Hybrid review, 51 studies	Eco-social interpretation of resilience	Ecosystem orientation
Florez-Jimenez et al., 2025	Sustainability + resilience + purpose	Science mapping/review	Maps five academic traditions	Long-term prosperity
Kassier, 2024	Sustainability/resilience/business models	Systematic review	Finds incomplete interfaces among constructs	Construct integration
Pal et al., 2014	SME resilience	Empirical	Antecedents of SME resilience in economic crisis	SME context
Sullivan-Taylor & Branicki, 2011	SME resilience	Empirical/conceptual	One-size resilience prescriptions may fail	Contingency
Fiksel et al., 2015	Risk to resilience	Managerial research	Learning and capability orientation to disruption	Learning
Galaitsi et al., 2023	BCM vs resilience	Conceptual synthesis	Separates BCM, operational resilience and organizational resilience	Construct separation
Kantur & İşeri-Say, 2015	Organizational resilience	Scale development	Develops organizational resilience measure	Measurement

Conz & Magnani, 2020	Firm resilience	Systematic review	Dynamic perspective on firm resilience	Temporal adaptation

Table 6. Critical evidence matrix of 46 core research papers informing SE-DBCC.

16. Confirmatory Research Agenda for a Scopus Q1-Targeted Study

A Q1-targeted extension should treat the present work as theory development plus pilot validation and undertake a preregistered or protocol-driven confirmatory study. A multi-industry sample should include respondents with direct knowledge of continuity, risk, operations, IT, quality, sustainability or senior management. To reduce single-informant bias, a subset of organizations should provide two respondents or pair survey measures with objective disruption indicators where available.

The confirmatory model should compare at least four theoretically plausible structures: (Model A) BCM directly predicts performance; (Model B) resilience fully mediates BCM-performance; (Model C) resilience partially mediates the relationship; and (Model D) the full SE-DBCC model incorporates dynamic capabilities and sustainability. Comparing alternative models will make the theoretical contribution stronger than reporting a single favored specification.

Additional robustness analyses should examine endogeneity concerns, alternative construct operationalizations, common-method variance, nonlinear effects and industry heterogeneity. If sample size permits, multi-group analysis can compare SMEs and large firms, manufacturing and services, ISO 22301-certified and non-certified organizations, and firms with high versus low disruption exposure. A longitudinal follow-up after a material disruption would provide the strongest evidence because resilience is inherently temporal.

Expanded Critical Literature Synthesis

Business continuity management as an organizational capability

The literature increasingly treats business continuity management (BCM) as more than a recovery plan or compliance artefact. Contemporary BCM integrates governance, business impact analysis, continuity strategy, exercising, communication, supplier dependencies, learning and continual improvement. This capability-based view is important because documented preparedness and enacted capability are not equivalent. Organizations may possess formal plans but still fail to coordinate resources when disruption characteristics depart from predefined scenarios. Recent systematic evidence identifies management support, external requirements, organizational preparedness and embedded continuity practices as recurrent attributes of effective BCM, while also calling for stronger integration of BCM with planned and adaptive resilience and organizational performance.

The distinction between BCM, operational resilience and organizational resilience further sharpens the theoretical problem. BCM primarily provides structured arrangements for anticipating, responding to and recovering from disruption; operational resilience focuses on maintaining important services within tolerable limits; organizational resilience is broader and includes the capacity to absorb, adapt, learn and, where necessary, transform. Treating these constructs as interchangeable risks conceptual redundancy. The present study therefore positions BCM capability as an antecedent, organizational resilience as an explanatory mechanism, and performance as an organizational outcome.

Dynamic capabilities as the adaptive engine of continuity

Dynamic Capabilities Theory provides the principal mechanism explaining why similar continuity arrangements can generate different outcomes. Sensing enables organizations to detect weak signals, emerging vulnerabilities and changing dependencies. Seizing concerns rapid decision-making and mobilization of people, technology, premises, information and financial resources. Reconfiguration concerns changing routines, structures, supplier relationships and operating models after disruption. Empirical evidence from 419 organizations has shown that improvisation and coordination capabilities are materially related to the pursuit of business continuity requirements, reinforcing the argument that BCM effectiveness depends on adaptive organizational capabilities rather than plans alone.

This study extends that reasoning by treating dynamic capabilities as complementary to BCM rather than synonymous with it. BCM establishes preparedness architecture; dynamic capabilities allow that architecture to be interpreted and altered under uncertainty. This separation produces a more falsifiable model. It also explains why the proposed moderation effect is theoretically plausible even though it was not statistically supported in the present pilot sample.

Sustainability-resilience complementarity

A second research stream concerns the relationship among sustainability, resilience and continuity. Reviews of this literature consistently report conceptual fragmentation but also increasing evidence of complementarity. Sustainability introduces environmental, social and economic time horizons that conventional recovery-oriented BCM may underweight. Resilience contributes the ability to withstand and adapt to shocks, while sustainability asks whether the resulting operating model remains viable and responsible over time. Literature reviews have specifically noted that evidence directly integrating sustainability and resilience capabilities with BCM remains limited, creating a defensible opportunity for theory building.

The proposed Sustainability-Embedded Dynamic Business Continuity Capability (SE-DBCC) framework responds to this gap. It does not claim that sustainability automatically creates continuity. Rather, it proposes that continuity decisions become strategically stronger when recovery priorities are evaluated alongside climate exposure, resource dependence, employee and community impacts, supplier sustainability, and long-term organizational viability. This shifts the unit of analysis from 'returning to normal' toward maintaining critical value creation while adapting the organization to altered conditions.

Research Novelty and Theoretical Contribution

The principal novelty of this paper is the SE-DBCC framework, which integrates five constructs that are often examined separately: BCM capability, dynamic capabilities, sustainability integration, organizational resilience and organizational performance. The framework makes three theoretical moves. First, it conceptualizes BCM as a higher-order capability rather than a binary condition defined by whether a continuity plan exists. Second, it positions organizational resilience as a mediating mechanism through which preparedness can translate into performance. Third, it embeds sustainability as a strategic orientation that can broaden continuity decision criteria beyond immediate restoration.

The framework therefore proposes a sequence of organizational value creation: preparedness enables coordinated response; adaptive capabilities permit reconfiguration; sustainability provides long-horizon decision criteria; resilience captures the organization's capacity to absorb, adapt and transform; and performance reflects the preservation of customer service, financial stability, stakeholder confidence and competitive functioning. This mechanism-based formulation is more theoretically informative than a simple direct BCM-performance relationship.

Literature Review Protocol for the Expanded Study

To strengthen transparency, the literature component should be interpreted as a structured integrative review supporting the empirical model. Searches should prioritize Scopus and Web of Science indexed peer-reviewed journal articles using combinations of the terms 'business continuity management', 'business continuity planning', 'organizational resilience', 'operational resilience', 'dynamic capabilities', 'sustainability', 'organizational performance', 'supply chain resilience', 'crisis management' and 'ISO 22301'. Foundational studies published before 2020 should be retained when they establish theory or validated constructs, while the contemporary evidence base should emphasize 2020-2026 scholarship. Screening should exclude purely technical disaster-recovery papers with no organizational construct relevance, non-scholarly commentary and duplicate records.

For the final large-sample paper, a reproducible PRISMA-style search log should record database, search string, date searched, records identified, duplicates removed, title/abstract exclusions, full-text exclusions and final included studies. The present pilot manuscript uses the literature to build and justify the model; it should not imply that a formal systematic review was completed unless the full search and screening records are retained.

Expanded Methodological Rigor

The empirical component uses a cross-sectional quantitative design and a seven-point Likert instrument covering BCM capability (10 items), dynamic capabilities (7), sustainability integration (5), organizational resilience (6) and organizational performance (5). The present n=30 dataset is appropriately treated as a pilot/exploratory study. At this stage, the primary purposes are to assess item behavior, internal consistency, preliminary bivariate relationships and the plausibility of the proposed mediation and moderation mechanisms.

A sample of 30 is not adequate for strong confirmatory claims based on covariance-based SEM, complex PLS-SEM, stable subgroup analysis or generalizable industry-level inference. Consequently, the paper deliberately avoids presenting the pilot as definitive validation. The next-stage study should use an a priori power analysis and seek a substantially larger multi-sector sample. The final measurement model should report standardized

loadings, Cronbach's alpha, rho_A where appropriate, composite reliability, average variance extracted, HTMT, collinearity diagnostics and model fit or predictive-quality statistics consistent with the chosen SEM approach. Common-method risk should also be addressed procedurally and statistically. Procedural remedies include respondent anonymity, separation of predictor and outcome sections, neutral wording and avoidance of leading items. With a larger sample, statistical checks may include a marker-variable strategy or common latent factor approach where theoretically appropriate; Harman's single-factor test alone should not be treated as conclusive evidence of absence of common-method bias.

Robustness and Alternative Explanations

The final confirmatory study should test alternative models rather than evaluating only the hypothesized structure. At minimum, the authors should compare (a) a direct-effects BCM-performance model, (b) the proposed partial-mediation model, (c) a full-mediation model, and (d) a model in which sustainability and dynamic capabilities are antecedents of BCM capability. Such comparisons will help establish whether SE-DBCC offers incremental explanatory value rather than merely redescribing correlated management practices.

Controls should be theoretically justified rather than mechanically added. Candidate controls include organization size, sector, ISO 22301 status, prior disruption experience and respondent managerial level. Industry and certification comparisons should be undertaken only when subgroup sample sizes are sufficient. Endogeneity and reverse causality remain possible in cross-sectional data: high-performing organizations may invest more heavily in BCM. Longitudinal or time-lagged designs would therefore represent an important extension.

Interpretive Significance of the Pilot Results

The pilot evidence is notable because the strongest pattern is not limited to a direct association between BCM and performance. BCM capability is strongly associated with organizational resilience and performance, and resilience itself is strongly associated with performance. The bootstrapped indirect effect reported in the pilot supports partial mediation, suggesting that part of the performance value associated with BCM may operate through the organization's capacity to absorb and adapt to disruption. This is consistent with the theoretical distinction between preparedness architecture and resilience outcomes.

The unsupported BCM × dynamic-capabilities interaction is equally informative. It indicates that the pilot does not justify claiming that dynamic capabilities strengthen the BCM-resilience relationship. Several explanations remain possible: the interaction may genuinely be weak, the constructs may operate additively rather than multiplicatively, or the pilot may have insufficient power to detect moderation. The result should therefore be retained as a boundary condition and retested with a larger sample rather than removed from the paper.

Implications for Practice and Standards

For managers, the framework implies that BCM maturity should not be assessed solely by plan completeness. Exercises should evaluate decision quality, cross-functional coordination, improvisation, supplier dependencies, communication and the organization's ability to reconfigure resources. Sustainability teams should participate in continuity governance where climate, energy, workforce, community or supplier risks can materially alter recovery choices. For organizations using ISO 22301, the framework offers a strategic interpretation of continuity requirements by connecting them to adaptive capability and organizational performance rather than treating certification as the endpoint.

Roadmap for Final Q1-Targeted Validation

A journal-submission version should convert the pilot into the instrument-development and preliminary-validation stage of a larger research program. The next data collection should target a sufficiently powered multi-sector sample, preferably with respondents who have direct knowledge of risk, continuity, operations, quality, IT, sustainability or senior management. The final paper should pre-specify hypotheses, use a reproducible literature-search protocol, validate the measurement model, test mediation with bootstrapping, evaluate competing structural models and report effect sizes and confidence intervals rather than relying on significance alone.

Selected Evidence Base Supporting the SE-DBCC Framework

Study / Stream	Evidence	Relevance to SE-DBCC	Role in Paper
Teece et al. (1997); Teece (2007)	Dynamic capabilities: sensing, seizing, reconfiguration	Explains adaptive execution under turbulence	Core theory

Duchek (2020)	Capability-based organizational resilience	Supports anticipation, coping and adaptation logic	Resilience mechanism
Linnenluecke (2017)	Review of resilience in business and management	Shows conceptual diversity and research agenda	Construct positioning
Bhamra et al. (2011)	Resilience literature review and future directions	Establishes organizational resilience foundations	Foundational synthesis
Corrales-Estrada et al. (2021)	Bibliometric/content review of sustainability, resilience and BCM	Identifies limited direct integration with BCM	Research gap
Buzzao & Rizzi (2023)	419-organization empirical study	Links improvisation/coordination capabilities to continuity requirements	Dynamic capability evidence
BCM SME systematic review (2023)	PRISMA review of BCM practices	Identifies preparedness, support, embeddedness and resilience/performance integration	BCM architecture
Galaitsi et al. (2023)	Conceptual distinction among BCM, operational resilience and organizational resilience	Prevents construct conflation	Model specification
Ciasullo et al. (2024)	Hybrid review of 51 contributions	Shows fragmented resilience-sustainability interplay	Sustainability logic
Florez-Jimenez et al. (2024/2025)	Science mapping of sustainability, resilience and corporate purpose	Identifies multiple academic traditions and gaps	Contemporary positioning

Publication Integrity Note

The authors should avoid representing the present n=30 pilot as a fully validated population model or as evidence of causal effects. All reported statistics must remain traceable to the uploaded primary dataset. References should be verified against publisher or indexing records before submission, and the final manuscript should distinguish clearly between findings from the pilot, propositions requiring larger-sample confirmation, and conclusions derived from prior literature.

References

1. Ambulkar, S., Blackhurst, J., & Grawe, S. (2015). Firm's resilience to supply chain disruptions: Scale development and empirical examination. Journal of Operations Management, 33–34, 111–122. https://doi.org/10.1016/j.jom.2014.11.002
2. Awang Ali, Q. S., Hanafiah, M. H., & Mogindol, S. H. (2023). Systematic literature review of Business Continuity Management (BCM) practices: Integrating organisational resilience and performance in SMEs BCM framework. International Journal of Disaster Risk Reduction, 99, 104135. https://doi.org/10.1016/j.ijdrr.2023.104135
3. Avery, G. C., & Bergsteiner, H. (2011). Sustainable leadership practices for enhancing business resilience and performance. Strategy & Leadership, 39(3), 5–15.
4. Bhamra, R., Dani, S., & Burnard, K. (2011). Resilience: The concept, a literature review and future directions. International Journal of Production Research, 49(18), 5375–5393. https://doi.org/10.1080/00207543.2011.563826
5. Blackhurst, J., Dunn, K. S., & Craighead, C. W. (2011). An empirically derived framework of global supply resiliency. Journal of Business Logistics, 32(4), 374–391.
6. Bode, C., Wagner, S. M., Petersen, K. J., & Ellram, L. M. (2011). Understanding responses to supply chain disruptions: Insights from information processing and resource dependence perspectives. Academy of Management Journal, 54(4), 833–856.
7. Brandon-Jones, E., Squire, B., Autry, C. W., & Petersen, K. J. (2014). A contingent resource-based perspective of supply chain resilience and robustness. Journal of Supply Chain Management, 50(3), 55–73.

8. Burnard, K., & Bhamra, R. (2011). Organisational resilience: Development of a conceptual framework for organisational responses. International Journal of Production Research, 49(18), 5581–5599.
9. Buzzao, G., & Rizzi, F. (2023). The role of dynamic capabilities for resilience in pursuing business continuity: An empirical study. Total Quality Management & Business Excellence, 34(11–12), 1353–1385. https://doi.org/10.1080/14783363.2023.2174427
10. Chowdhury, M. M. H., & Quaddus, M. (2017). Supply chain resilience: Conceptualization and scale development using dynamic capability theory. International Journal of Production Economics, 188, 185–204.
11. Christopher, M., & Peck, H. (2004). Building the resilient supply chain. International Journal of Logistics Management, 15(2), 1–14.
12. Conz, E., & Magnani, G. (2020). A dynamic perspective on the resilience of firms: A systematic literature review and a framework for future research. European Management Journal, 38(3), 400–412.
13. Duchek, S. (2020). Organizational resilience: A capability-based conceptualization. Business Research, 13, 215–246. https://doi.org/10.1007/s40685-019-0085-7
14. Duchek, S., Raetze, S., & Scheuch, I. (2020). The role of diversity in organizational resilience: A theoretical framework. Business Research, 13, 387–423. https://doi.org/10.1007/s40685-019-0084-8
15. Eccles, R. G., Ioannou, I., & Serafeim, G. (2014). The impact of corporate sustainability on organizational processes and performance. Management Science, 60(11), 2835–2857.
16. Eisenhardt, K. M., & Martin, J. A. (2000). Dynamic capabilities: What are they? Strategic Management Journal, 21(10–11), 1105–1121.
17. Fiksel, J., Polyviou, M., Croxton, K. L., & Pettit, T. J. (2015). From risk to resilience: Learning to deal with disruption. MIT Sloan Management Review, 56(2), 79–86.
18. Gibb, F., & Buchanan, S. (2006). A framework for business continuity management. International Journal of Information Management, 26(2), 128–141.
19. Hamel, G., & Välikangas, L. (2003). The quest for resilience. Harvard Business Review, 81(9), 52–63.
20. Herbane, B. (2010a). The evolution of business continuity management: A historical review of practices and drivers. Business History, 52(6), 978–1002. https://doi.org/10.1080/00076791.2010.511185
21. Herbane, B. (2010b). Small business research: Time for a crisis-based view. International Small Business Journal, 28(1), 43–64. https://doi.org/10.1177/0266242609350804
22. Herbane, B., Elliott, D., & Swartz, E. M. (2004). Business continuity management: Time for a strategic role? Long Range Planning, 37(5), 435–457.
23. Hillmann, J., & Guenther, E. (2021). Organizational resilience: A valuable construct for management research? International Journal of Management Reviews, 23(1), 7–44.
24. Järveläinen, J. (2013). IT incidents and business impacts: Validating a framework for continuity management in information systems. International Journal of Information Management, 33(3), 583–590. https://doi.org/10.1016/j.ijinfomgt.2013.03.001
25. Joussen, T. P. (2025). Enabling strategic change toward resilience: A systematic review from a dynamic capabilities perspective. Strategic Change. https://doi.org/10.1002/jsc.2626
26. Kantur, D., & İşeri-Say, A. (2015). Measuring organizational resilience: A scale development. Journal of Business, Economics and Finance, 4(3), 456–472.
27. Lee, A. V., Vargo, J., & Seville, E. (2013). Developing a tool to measure and compare organizations' resilience. Natural Hazards Review, 14(1), 29–41.
28. Lengnick-Hall, C. A., & Beck, T. E. (2005). Adaptive fit versus robust transformation: How organizations respond to environmental change. Journal of Management, 31(5), 738–757.
29. Lengnick-Hall, C. A., Beck, T. E., & Lengnick-Hall, M. L. (2011). Developing a capacity for organizational resilience through strategic human resource management. Human Resource Management Review, 21(3), 243–255.
30. Linnenluecke, M. K. (2017). Resilience in business and management research: A review of influential publications and a research agenda. International Journal of Management Reviews, 19(1), 4–30. https://doi.org/10.1111/ijmr.12076
31. McManus, S., Seville, E., Vargo, J., & Brunsdon, D. (2008). Facilitated process for improving organizational resilience. Natural Hazards Review, 9(2), 81–90.
32. Negri, M., Cagno, E., Colicchia, C., & Sarkis, J. (2021). Integrating sustainability and resilience in the supply chain: A systematic literature review and a research agenda. Business Strategy and the Environment, 30(7), 2858–2886. https://doi.org/10.1002/bse.2776
33. Ortiz-de-Mandojana, N., & Bansal, P. (2016). The long-term benefits of organizational resilience through sustainable business practices. Strategic Management Journal, 37(8), 1615–1631.

34. Pal, R., Torstensson, H., & Mattila, H. (2014). Antecedents of organizational resilience in economic crises—An empirical study of Swedish textile and clothing SMEs. International Journal of Production Economics, 147, 410–428.
35. Pettit, T. J., Fiksel, J., & Croxton, K. L. (2010). Ensuring supply chain resilience: Development of a conceptual framework. Journal of Business Logistics, 31(1), 1–21.
36. Ponomarov, S. Y., & Holcomb, M. C. (2009). Understanding the concept of supply chain resilience. International Journal of Logistics Management, 20(1), 124–143.
37. Sahebjamnia, N., Torabi, S. A., & Mansouri, S. A. (2015). Integrated business continuity and disaster recovery planning: Towards organizational resilience. European Journal of Operational Research, 242(1), 261–273.
38. Scholten, K., Scott, P. S., & Fynes, B. (2014). Mitigation processes—Antecedents for building supply chain resilience. Supply Chain Management: An International Journal, 19(2), 211–228.
39. Sheffi, Y., & Rice, J. B. Jr. (2005). A supply chain view of the resilient enterprise. MIT Sloan Management Review, 47(1), 41–48.
40. Somers, S. (2009). Measuring resilience potential: An adaptive strategy for organizational crisis planning. Journal of Contingencies and Crisis Management, 17(1), 12–23.
41. Sullivan-Taylor, B., & Branicki, L. (2011). Creating resilient SMEs: Why one size might not fit all. International Journal of Production Research, 49(18), 5565–5579.
42. Sutcliffe, K. M., & Vogus, T. J. (2003). Organizing for resilience. In K. Cameron, J. Dutton, & R. Quinn (Eds.), Positive Organizational Scholarship. Berrett-Koehler.
43. Teece, D. J. (2007). Explicating dynamic capabilities: The nature and microfoundations of (sustainable) enterprise performance. Strategic Management Journal, 28(13), 1319–1350.
44. Teece, D. J., Pisano, G., & Shuen, A. (1997). Dynamic capabilities and strategic management. Strategic Management Journal, 18(7), 509–533.
45. Torabi, S. A., Soufi, H. R., & Sahebjamnia, N. (2014). A new framework for business impact analysis in business continuity management. Safety Science, 68, 309–323.
46. Vogus, T. J., & Sutcliffe, K. M. (2007). Organizational resilience: Towards a theory and research agenda. Proceedings of the IEEE International Conference on Systems, Man and Cybernetics, 3418–3422.
47. Weick, K. E., & Sutcliffe, K. M. (2007). Managing the Unexpected: Resilient Performance in an Age of Uncertainty (2nd ed.). Jossey-Bass.
48. Wieland, A., & Wallenburg, C. M. (2013). The influence of relational competencies on supply chain resilience: A relational view. International Journal of Physical Distribution & Logistics Management, 43(4), 300–320.
49. Williams, T. A., Gruber, D. A., Sutcliffe, K. M., Shepherd, D. A., & Zhao, E. Y. (2017). Organizational response to adversity: Fusing crisis management and resilience research streams. Academy of Management Annals, 11(2), 733–769. https://doi.org/10.5465/annals.2015.0134
50. Corrales-Estrada, A. M., Gómez-Santos, L. L., Bernal-Torres, C. A., & Rodríguez-López, J. E. (2021). Sustainability and resilience organizational capabilities to enhance business continuity management: A literature review. Sustainability, 13(15), 8196. https://doi.org/10.3390/su13158196
51. Ciasullo, M. V., Chiarini, A., & Palumbo, R. (2024). Mastering the interplay of organizational resilience and sustainability: Insights from a hybrid literature review. Business Strategy and the Environment. https://doi.org/10.1002/bse.3530
52. Florez-Jimenez, M. P., Lleo, A., Ruiz-Palomino, P., & Muñoz-Villamizar, A. F. (2025). Corporate sustainability, organizational resilience, and corporate purpose: A review of the academic traditions connecting them. Review of Managerial Science, 19, 67–104. https://doi.org/10.1007/s11846-024-00735-3
53. Galaitsi, S. E., Pinigina, E., Keisler, J. M., Pescaroli, G., Keenan, J. M., & Linkov, I. (2023). Business continuity management, operational resilience, and organizational resilience: Commonalities, distinctions, and synthesis. International Journal of Disaster Risk Science, 14, 713–721. https://doi.org/10.1007/s13753-023-00494-x
54. Kassier, L. (2024). Interconnected or disconnected? A review of sustainability, resilience, and sustainable business model constructs in the academic business literature. Journal of the Knowledge Economy, 15, 15931–15958. https://doi.org/10.1007/s13132-023-01712-z

Appendix A. Construct Coding

Construct	Codes	Operational focus
Business Continuity Management Capability	BCM1–BCM10	Critical activities, BIA, strategies, leadership, roles, exercises, training, alternatives, third parties, learning
Dynamic Capabilities	DC1–DC7	Sensing, interpretation, mobilization, coordination, improvisation, reconfiguration, learning
Sustainability Integration	SI1–SI5	Environmental/social/economic integration, climate, stakeholders, suppliers, long-term viability
Organizational Resilience	OR1–OR6	Maintenance, adaptation, recovery, absorption, learning, transformation
Organizational Performance	OP1–OP5	Service continuity, loss control, recovery, stakeholder confidence, competitive performance

Appendix B. Publication Integrity Statement

The authors explicitly treat the n = 30 dataset as a pilot/exploratory sample. No fabricated observations, inflated sample size, invented SEM fit indices or unsupported significance claims are introduced. The manuscript distinguishes theoretical propositions from empirically tested pilot results. The 40+ literature synthesis is used to motivate the framework; final journal submission should verify each bibliographic record against the target journal's reference style and database metadata.