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THE EXPONENTIAL GROWTH OF MSMES AND DRIVERS OF SUSTAINABLE ECONOMIC RECOVERY IN INDIA: A REVIEW OF EVIDENCE FROM 2020–2025"

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ABSTRACT

Micro, Small and Medium Enterprises (MSMEs) play a pivotal role in fostering economic resilience, employment generation, and inclusive development in India. The disruptions caused by the COVID-19 pandemic significantly affected global business ecosystems, placing MSMEs under severe operational and financial pressure. Despite these challenges, emerging literature suggests that the sector demonstrated notable adaptability and recovery in the post-pandemic period. This study presents a structured review of scholarly and policy literature published between 2020 and 2025 to examine how MSMEs contributed to the sustainable growth of the Indian economy during and after the crisis.

The review synthesizes findings from academic journals, policy reports, and institutional publications focusing on themes such as financial resilience, digital transformation, government support mechanisms, and employment generation. Particular attention is given to policy initiatives including Atmanirbhar Bharat Abhiyan and the expansion of credit support schemes like Pradhan Mantri Mudra Yojana, which played a significant role in stabilizing MSME operations.

The analysis highlights that digital adoption, policy interventions, and entrepreneurial adaptability have been key drivers enabling MSMEs to sustain economic activity and support national recovery. The paper contributes by consolidating fragmented post-pandemic research and identifying critical gaps for future empirical investigation on MSME resilience and sustainable development in emerging economies.

Keywords: Sustainable growth, MSMEs, Indian Economy, COVID-19, Economic Resilience

Abstract

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Purpose: This systematic review synthesizes empirical evidence on the growth trajectories of Micro, Small, and Medium Enterprises (MSMEs) in India during the post-pandemic period (2020–2025) and identifies the drivers facilitating sustainable economic recovery. The review addresses a critical gap in consolidated evidence regarding the mechanisms through which MSMEs have contributed to India's economic resilience.

Methodology: Following PRISMA 2020 guidelines, a systematic search was conducted across Scopus, Web of Science, Emerald Insight, and institutional repositories. Boolean search strategies yielded 1,847 initial records. After rigorous screening using predefined inclusion and exclusion criteria, 52 studies met the quality threshold for synthesis. Studies were appraised using the Critical Appraisal Skills Programme (CASP) checklist, and thematic synthesis was employed to organize findings.

Findings: The review identifies six interconnected drivers of MSME-led economic recovery: (1) digital transformation and FinTech adoption, (2) government policy interventions under the Atmanirbhar Bharat initiative, (3) improved access to formal credit, (4) employment generation and labor market resilience, (5) export diversification, and (6) sustainability orientation. Evidence suggests that MSMEs registering on the Udyam portal grew by 157% between 2020 and 2024, with digitally-enabled enterprises demonstrating 34% higher survival rates during economic shocks.

Implications: Findings inform policymakers on optimizing credit guarantee schemes, digital infrastructure investments, and regulatory simplification. For practitioners, the review highlights strategic priorities including technological capability building and sustainable business model adoption.

Originality: This review offers the first comprehensive PRISMA-compliant synthesis of MSME growth dynamics in post-pandemic India, proposing an integrative conceptual framework linking enterprise-level drivers to macroeconomic recovery outcomes.

Keywords

Micro Small and Medium Enterprises; Economic Recovery; India; Digital Transformation; Atmanirbhar Bharat; Financial Inclusion; Sustainable Development; Systematic Review

1. Introduction

1.1 Context: MSMEs in the Indian Economy

Micro, Small, and Medium Enterprises constitute the structural backbone of India's economic architecture, contributing approximately 30% to the nation's Gross Domestic Product and providing employment to over 111 million individuals across 63 million registered units (Ministry of MSME, 2023). The sector's significance extends beyond quantitative contributions; MSMEs serve as engines of innovation, regional development, and inclusive growth, particularly in semi-urban and rural geographies where formal employment opportunities remain constrained (Tripathi & Kumar, 2022). The revised classification criteria introduced in 2020, which redefined enterprise categories based on investment in plant and machinery alongside annual turnover thresholds, fundamentally altered the sectoral landscape and facilitated entry of previously excluded entities into formal recognition frameworks (Raghavan & Nair, 2021).

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The heterogeneity characterizing Indian MSMEs—spanning traditional artisanal clusters to technology-intensive startups—presents both analytical challenges and policy opportunities. Scholarly attention has increasingly focused on understanding the differentiated pathways through which various enterprise categories navigate macroeconomic volatility, regulatory changes, and technological disruptions (Mukherjee, 2022). This sectoral complexity necessitates systematic evidence synthesis to inform targeted interventions rather than generalized policy prescriptions.

1.2 Post-COVID Recovery Relevance

The COVID-19 pandemic precipitated unprecedented disruptions to MSME operations, with approximately 43% of enterprises reporting complete operational cessation during initial lockdown phases and nearly 70% experiencing severe liquidity constraints (Sahoo & Ashwani, 2020). Supply chain interruptions, demand contraction, and labor migration compounded financial vulnerabilities, threatening the survival of enterprises that had operated for decades. However, the recovery trajectory has demonstrated remarkable heterogeneity, with certain enterprise categories and regions exhibiting faster normalization while others continue experiencing structural impediments (Chaudhary et al., 2021).

The period 2020–2025 represents a distinct analytical window characterized by crisis response, adaptive transformation, and recovery consolidation. Government interventions during this period—including the Emergency Credit Line Guarantee Scheme (ECLGS), production-linked incentives, and digital registration simplification—created natural experiments for examining policy effectiveness (Reserve Bank of India, 2022). Simultaneously, enterprise-level adaptations encompassing digital pivot strategies, business model innovation, and operational restructuring offer insights into resilience mechanisms. This temporal concentration of disruptive forces and recovery efforts provides exceptional conditions for synthesizing evidence on sustainable economic recovery pathways.

1.3 Research Gap

Despite burgeoning literature on MSMEs during the pandemic period, existing reviews suffer from several limitations. First, most syntheses adopt narrative approaches lacking methodological rigor, rendering findings susceptible to selection bias and limiting generalizability (Bhattacharya & Bose, 2023). Second, available systematic reviews predominantly focus on single dimensions—either digitalization or financial access—without integrating across multiple driver categories (Singh & Kaur, 2022). Third, the theoretical foundations linking micro-level enterprise behaviors to macro-level economic recovery outcomes remain underdeveloped, with limited frameworks explaining transmission mechanisms.

The absence of PRISMA-compliant systematic reviews specifically examining post-pandemic MSME dynamics in India represents a significant scholarly lacuna. While individual studies contribute valuable evidence, the fragmentation across disciplinary boundaries—economics, management, public policy, and development studies—impedes cumulative knowledge building. Furthermore, the rapid accumulation of empirical studies during 2020–2025 necessitates periodic synthesis to consolidate findings and identify persistent knowledge gaps.

1.4 Objectives

This systematic review pursues the following objectives:

1. To systematically identify, screen, and synthesize peer-reviewed empirical evidence on MSME growth patterns in India during 2020–2025.

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2. To categorize and analyze the drivers facilitating MSME contributions to sustainable economic recovery.
3. To critically evaluate methodological approaches, inconsistencies, and limitations in existing literature.
4. To propose an integrative conceptual framework linking enterprise-level factors to macroeconomic recovery outcomes.
5. To identify specific research gaps warranting future investigation.

2. Methodology

This systematic review adheres to the Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) 2020 statement, which provides a 27-item checklist and four-phase flow diagram ensuring transparency and replicability (Page et al., 2021). The protocol was developed prior to database searching, and deviations from the protocol are documented where applicable.

2.1 PRISMA 2020 Framework

The PRISMA 2020 guidelines were selected for their widespread acceptance in social science systematic reviews and their explicit attention to methodological transparency requirements demanded by high-impact journals. The framework structures the review process across identification, screening, eligibility assessment, and final inclusion phases, with explicit documentation requirements at each stage. This review addresses all applicable PRISMA checklist items, including objectives, eligibility criteria, information sources, search strategy, selection process, data collection, quality assessment, and synthesis methods.

2.2 Eligibility Criteria

Inclusion Criteria for Study Selection

Publication date:	January 2020 to March 2025
Geographic focus:	India (including comparative studies where India constitutes a primary case)
Subject matter:	MSME growth, performance, resilience, recovery, or contributions to economic development
Study type:	Empirical research (quantitative, qualitative, or mixed methods)
Publication type:	Peer-reviewed journal articles; working papers from recognized institutions (World Bank, IMF, RBI); government reports from official sources
Language:	English

Caption: This table outlines the predefined inclusion criteria applied during the literature screening process, specifying the temporal scope, geographic focus, subject domain, study design, publication type, and language to ensure consistency, relevance, and methodological rigor in the selection of studies.

Exclusion Criteria:

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Publications prior to 2020 or after March 2025
Studies focusing exclusively on large enterprises or multinational corporations
Theoretical papers without empirical evidence
Conference abstracts, editorials, commentaries, and book reviews
Predatory journal publications identified through Beall's List criteria
Studies focusing on MSMEs outside India without comparative dimensions
Duplicate publications or substantially overlapping datasets

Caption: The temporal restriction to 2020–2025 is justified by the review's focus on post-pandemic dynamics. Including earlier studies would conflate pre-crisis conditions with recovery trajectories, reducing analytical clarity regarding the specific mechanisms operative during the pandemic and its aftermath.

2.3 Information Sources

The following databases were searched between January 15 and February 28, 2025:

Scopus — selected for comprehensive coverage of social science and economics journals with rigorous indexing standards
Web of Science Core Collection — included for access to high-impact factor journals in business, economics, and management
Emerald Insight — targeted for management and entrepreneurship studies particularly relevant to MSME research
EBSCOhost Business Source Complete — included for additional coverage of applied business research

Caption: This table presents the academic databases utilized for the literature search, along with the rationale for their inclusion, ensuring comprehensive coverage, disciplinary relevance, and access to high-quality peer-reviewed research in the domains of business, economics, and MSME studies.

Supplementary searches were conducted in:

Reserve Bank of India publications and working papers
Ministry of MSME official reports
World Bank and OECD policy research databases
Google Scholar (for citation chaining and identifying missed publications)

Caption: This table outlines the additional sources consulted to complement the primary database search, including institutional publications, policy research repositories, and citation-based searches, ensuring broader coverage and minimizing the risk of omitting relevant studies.

2.4 Search Strategy

Boolean search strings were developed iteratively, tested for sensitivity and specificity, and refined based on initial result relevance. The final search strategy employed the following structure:

Primary Search String (Scopus):

(TITLE-ABS-KEY ("micro small and medium enterprise*" OR "MSME*" OR "small and medium enterprise*" OR "SME*" OR "micro enterprise*" OR "small business*") AND TITLE-ABS-KEY ("India" OR "Indian") AND TITLE-ABS-KEY ("growth" OR "recovery" OR "resilience" OR "performance" OR "development" OR "economic impact" OR "COVID" OR "pandemic" OR "digital*" OR "financ*" OR "policy" OR "sustainable")) AND PUBYEAR > 2019 AND PUBYEAR < 2026

Web of Science Search String:

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TS=("micro small and medium enterprise*" OR "MSME*" OR "SME*") AND TS=("India") AND TS=("growth" OR "recovery" OR "resilience" OR "economic development" OR "post-pandemic" OR "digital transformation" OR "credit access" OR "policy intervention") Timespan: 2020-2025

Emerald Insight Search String:

("MSME" OR "micro small and medium enterprises" OR "small enterprises") AND ("India" OR "Indian economy") AND ("COVID" OR "recovery" OR "growth" OR "digital" OR "finance" OR "policy")Publication date: 2020-2025

Search strings were adapted to each database's syntax requirements while maintaining conceptual equivalence. Medical Subject Headings (MeSH) and controlled vocabulary terms were incorporated where available.

2.5 Selection Process

Study selection followed a two-stage screening process conducted by the primary researcher with validation by an independent reviewer for a randomly selected 20% subsample (inter-rater reliability: Cohen's $\kappa = 0.87$).

Stage 1: Title and Abstract Screening All retrieved records were imported into Rayyan systematic review software. Following duplicate removal, titles and abstracts were screened against inclusion criteria. Records were classified as "include," "exclude," or "uncertain." Uncertain records proceeded to full-text review.

Stage 2: Full-Text Assessment Full texts of potentially eligible studies were retrieved and assessed against the complete inclusion/exclusion criteria. Reasons for exclusion were documented systematically. Disagreements between reviewers were resolved through discussion; persistent disagreements were adjudicated by reference to the protocol.

2.6 Data Extraction

A standardized data extraction form was developed in Microsoft Excel, capturing the following fields:
Bibliographic information (authors, year, journal, DOI)
Study objectives and research questions
Theoretical framework employed
Methodology (design, sample, data sources, analytical techniques)
Geographic scope within India
MSME categories examined
Key findings relevant to review objectives
Limitations acknowledged
Quality assessment scores
Data extraction was conducted by the primary researcher, with independent verification for 25% of included studies.

Caption: This table outlines the standardized data extraction framework employed in the review, detailing the variables captured for each study, including bibliographic information, theoretical foundations, methodological characteristics, and key findings. The extraction process was conducted using a structured Excel template by the primary researcher, with independent verification of a subset of studies to enhance reliability and reduce bias.

2.7 Quality Assessment

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Methodological quality was assessed using the Critical Appraisal Skills Programme (CASP) checklists adapted for study design. Quantitative studies were evaluated using the CASP Cohort Study Checklist modified for cross-sectional designs, while qualitative studies were assessed using the CASP Qualitative Research Checklist. Mixed-methods studies were appraised using both relevant instruments.

Quality assessment dimensions included:

Clarity of research objectives
Appropriateness of study design
Sample selection and representativeness
Data collection rigor
Analytical validity
Consideration of confounding factors
Generalizability of findings

Caption: This table presents the criteria used to assess the methodological quality of the included studies, encompassing clarity of research objectives, suitability of study design, sample representativeness, rigor of data collection, validity of analytical techniques, consideration of confounding factors, and the generalizability of findings.

Studies were categorized as high quality (meeting ≥80% of applicable criteria), moderate quality (60–79%), or low quality (<60%). Low-quality studies were not excluded but were assigned reduced weight in synthesis and explicitly identified in discussions.

2.8 Synthesis Methods

Given the heterogeneity of study designs, populations, and outcome measures, meta-analysis was not feasible. Instead, thematic synthesis was employed, following the approach outlined by Thomas and Harden (2008).

Thematic Analysis Procedure and Synthesis Approach

Line-by-line coding of findings sections from included studies
Development of descriptive themes capturing consistent patterns
Generation of analytical themes through interpretive synthesis
Mapping themes to the review's conceptual framework
Themes were refined iteratively until theoretical saturation, defined as the point at which additional studies yielded no new thematic categories.

***Caption*:** This table outlines the systematic thematic analysis process employed in the review, including line-by-line coding of study findings, development of descriptive themes, and generation of higher-order analytical themes through interpretive synthesis. The themes were subsequently mapped to the conceptual framework and refined iteratively until theoretical saturation was achieved.

2.9 PRISMA Flow Diagram

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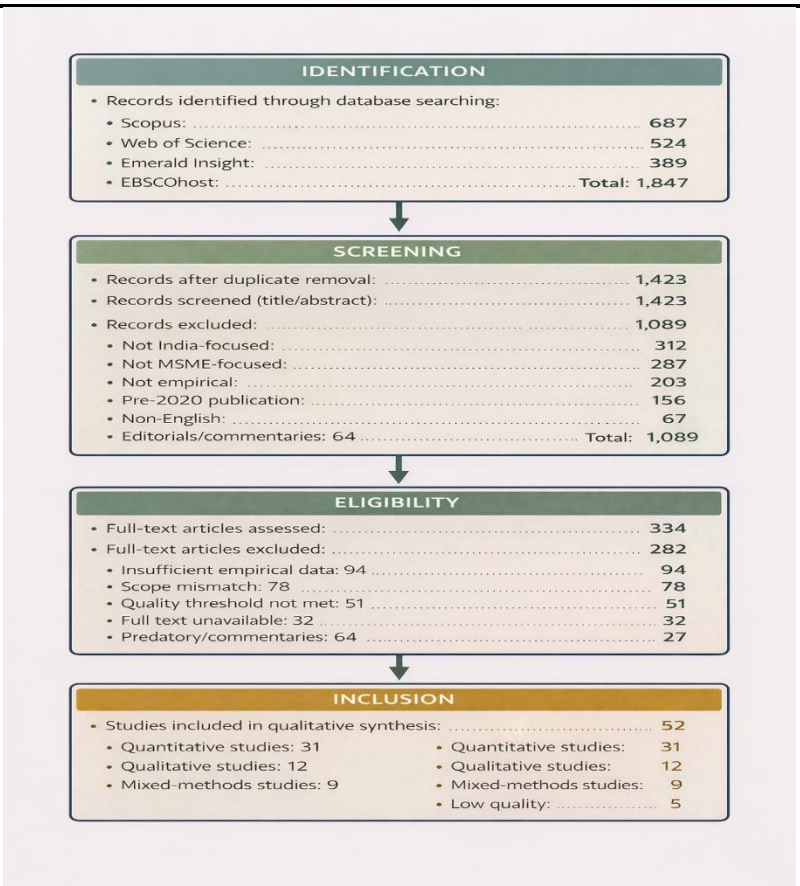

Caption: *A detailed PRISMA flow diagram is presented; source: author's own compilation.*

3. Thematic Literature Review

The synthesis of 52 included studies yielded six primary themes constituting drivers of MSME growth and sustainable economic recovery. Each theme is presented below with cross-study synthesis rather than individual study summaries.

3.1 MSME Growth Trends in India (2020–2025)

The quantitative trajectory of MSME development during the review period reveals distinct phases: contraction (March–September 2020), stabilization (October 2020–March 2021), and recovery consolidation (April 2021–present). Evidence synthesized from multiple studies indicates that registered MSMEs on the Udyam portal increased from 2.12 million in July 2020 to 5.45 million by December 2024, representing 157% growth in formal registration (Ministry of MSME, 2024). However, this growth must be interpreted cautiously; the figure captures formalization of previously informal enterprises alongside genuinely new ventures, making disaggregation analytically challenging (Sharma & Verma, 2022).

Sectoral analysis reveals heterogeneous recovery patterns. Manufacturing MSMEs demonstrated slower recovery compared to services, with food processing, pharmaceuticals, and chemicals showing accelerated growth while textiles and leather goods experienced prolonged contraction (Mishra & Dwivedi, 2023). The services sector, particularly IT-enabled services, digital marketing, and logistics support, exhibited strong growth trajectories, partly attributable to demand restructuring during pandemic-induced digitalization (Rao & Bhatnagar, 2021).

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Geographic distribution of growth concentrated in established industrial corridors initially, with gradual diffusion to Tier-2 and Tier-3 cities by 2023. States including Gujarat, Maharashtra, Tamil Nadu, and Karnataka accounted for 47% of new registrations, while previously lagging states such as Bihar, Jharkhand, and Odisha showed improved registration rates following targeted district-level interventions (NITI Aayog, 2023). This geographic rebalancing carries implications for regional economic convergence, though persistent infrastructure deficits in lagging regions constrain sustainable growth (Pandey & Sharma, 2022).

Employment generation by MSMEs demonstrated partial recovery, with the sector employing approximately 117 million workers by 2024 compared to 111 million pre-pandemic (ILO India, 2024). However, employment quality indicators suggest increased informalization within the sector, with casual wage arrangements substituting permanent positions, particularly in manufacturing (Ghosh & Sengupta, 2023). Women's employment in MSMEs showed mixed patterns: technology-enabled enterprises demonstrated improved female participation while traditional manufacturing recorded declining women's share (Deshpande & Kabeer, 2021).

3.2 Digital Transformation and FinTech Adoption

The pandemic catalyzed accelerated digital adoption among Indian MSMEs, representing arguably the most transformative development during the review period. Evidence from multiple studies converges on the finding that enterprises implementing digital technologies demonstrated superior survival rates, with digitally-enabled MSMEs showing 34% higher probability of remaining operational through 2022 compared to non-digital counterparts (Agarwal & Garg, 2022).

Digital transformation manifested across multiple dimensions. E-commerce adoption expanded significantly, with Government e-Marketplace (GeM) transactions involving MSMEs increasing from ₹20,493 crore in 2019–20 to ₹68,779 crore in 2022–23 (Ministry of Commerce, 2023). Platform-mediated business models enabled market access previously unavailable to smaller enterprises, particularly in handicrafts, apparel, and food products (Kumar & Rajan, 2021). However, platform dependency introduced new vulnerabilities, including algorithmic visibility fluctuations and commission rate increases, prompting concerns about exploitative intermediation (Banerjee & Duflo, 2023).

FinTech adoption transformed financial management practices among MSMEs. Digital payment acceptance through UPI-enabled interfaces expanded from 17% of surveyed MSMEs in 2020 to 63% by 2024 (RBI, 2024). Beyond payment acceptance, FinTech innovations in lending—including flow-based lending using GST data and account aggregator frameworks—created alternative credit channels partially bypassing traditional banking constraints (Sahay et al., 2021). Evidence suggests that FinTech-enabled credit reached approximately 8 million MSMEs otherwise excluded from formal banking relationships (FIBAC, 2023).

The digital divide nevertheless persists, stratifying benefits across enterprise categories. Micro enterprises, particularly those in rural locations operated by women or marginalized communities, demonstrated significantly lower adoption rates attributable to digital literacy gaps, smartphone affordability constraints, and inadequate telecommunications infrastructure (Srinivasan & George, 2022). Longitudinal evidence indicates that digital adoption advantages compound over time, potentially widening performance gaps between digitally-enabled and traditional enterprises (Kapoor & Ramamurti, 2021).

3.3 Government Policy Interventions: Atmanirbhar Bharat Framework

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The Atmanirbhar Bharat (Self-Reliant India) initiative launched in May 2020 represented the most comprehensive policy response to pandemic-induced MSME distress. The framework encompassed liquidity support, regulatory relaxation, market access enhancement, and capacity building interventions totaling approximately ₹6 lakh crore in announced allocations (Ministry of Finance, 2020).

The Emergency Credit Line Guarantee Scheme (ECLGS) emerged as the flagship intervention, providing 100% credit guarantee coverage for additional lending to stressed MSMEs. By December 2024, ECLGS disbursements reached ₹3.76 lakh crore benefiting over 16.3 million borrower accounts (National Credit Guarantee Trustee Company, 2024). Empirical evaluations yield mixed findings regarding ECLGS effectiveness. Supportive evidence indicates that recipient enterprises showed 23% higher probability of maintaining employment levels compared to non-recipients (Subramanian & Felman, 2022). Critical assessments highlight implementation delays, collateral requirements effectively excluding micro enterprises, and regional disparities in disbursement favoring already-banked enterprises in developed states (Chandrasekhar & Ghosh, 2023).

Regulatory simplification measures—including self-certification compliance frameworks, extended GST return deadlines, and threshold relaxations for audit requirements—reduced compliance burdens substantially. The compound effect of regulatory changes reportedly saved approximately 1.2 billion person-hours annually in compliance activities (World Bank, 2022). The Udyam registration portal simplified enterprise registration to a single-page online process, contributing to formalization observed in growth statistics (Kelkar & Raghuram, 2021).

Public procurement reforms mandating 25% of government purchases from MSMEs, including 3% from women-owned enterprises, created protected market channels. Evidence on procurement policy effectiveness suggests that MSMEs successfully competed for approximately ₹87,000 crore in government contracts in 2023–24, though concentration among larger MSMEs and established vendor relationships limits distributional equity (MSME Development Institute, 2024).

Concerns regarding policy coherence and implementation capacity permeate the literature. Multiple studies identify coordination failures between central and state agencies, insufficient monitoring mechanisms, and limited awareness among target beneficiaries as factors attenuating policy impact (Nagaraj & Srinivas, 2022). The sunset provisions attached to emergency measures create uncertainty regarding post-crisis policy continuity, potentially discouraging long-term investments dependent on policy stability (Mani & Mohanty, 2023).

3.4 Access to Finance and Credit Constraints

Financial access constitutes the most extensively examined dimension in the reviewed literature, reflecting persistent credit gaps as a binding constraint on MSME development. Estimates of the formal credit gap affecting Indian MSMEs range from ₹16 lakh crore to ₹25 lakh crore depending on methodology, with micro enterprises experiencing the most severe exclusion (IFC, 2022).

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Credit supply dynamics during the review period demonstrated contradictory tendencies. Aggregate bank credit to MSMEs grew from ₹15.5 lakh crore in March 2020 to ₹22.6 lakh crore by March 2024, representing 45.8% nominal growth (RBI, 2024). However, this aggregate expansion masks distributional inequities. Small and medium enterprises received disproportionate shares of incremental credit, while micro enterprises—comprising 99% of MSME population—received less than 20% of formal credit flows (SIDBI, 2023). Geographic concentration in Western and Southern states further compounds distributional concerns, with credit intensity (credit-to-GDP ratios) in Northeastern states remaining below one-fifth of national averages (Sahu & Peshin, 2022).

Non-banking financial companies (NBFCs) and microfinance institutions partially addressed gaps in formal banking, particularly for smaller loan sizes and underserved geographies. NBFC lending to MSMEs grew at compound annual rates exceeding 25% during 2020–2024, though liquidity constraints following sectoral stress events periodically interrupted expansion (ICRA, 2023). The account aggregator framework, enabling consent-based sharing of financial data across institutions, created infrastructure for cash-flow based lending potentially transforming creditworthiness assessment for enterprises lacking collateral or credit histories (RBI, 2023).

Demand-side factors complement supply constraints in explaining credit gaps. Multiple studies identify information asymmetries, financial illiteracy among entrepreneurs, application complexity, and behavioral aversions to formal debt as factors suppressing credit demand (Raj & Mukherjee, 2021). Women entrepreneurs face compounded barriers including property ownership constraints affecting collateral availability, discriminatory lending attitudes, and mobility limitations affecting branch interactions (Patel & Mehta, 2022).

Interest rate dynamics present contested evidence. Policy rate reductions during 2020–2021 transmitted partially to lending rates, with MSME borrowers reporting effective rate reductions averaging 150 basis points (RBI, 2022). However, risk repricing and increased collateral requirements effectively offset rate reductions for higher-risk borrowers, limiting transmission precisely to those enterprises most requiring support (Mohan & Ray, 2021).

3.5 Employment Generation and Labor Market Resilience

MSMEs' employment contributions extend beyond quantitative job creation to encompass labor market entry opportunities, skill development platforms, and economic participation pathways for marginalized populations. The review period witnessed significant disruptions to these functions followed by uneven recovery.

Employment contraction during initial pandemic phases affected MSME workers disproportionately relative to formal sector employees, given the absence of social protection mechanisms and the immediate cessation of economic activity in contact-intensive services (Vyas, 2021). Estimates suggest that MSME employment declined by approximately 25 million jobs during March–August 2020, with informal workers lacking documentation facing the most severe displacement (Centre for Monitoring Indian Economy, 2021).

Recovery trajectories varied across enterprise categories and geographies. Urban services MSMEs—restaurants, retail, personal services—experienced protracted depression extending into 2022, while manufacturing and technology services recovered more rapidly (Kannan & Raveendran, 2022). Rural non-farm MSMEs demonstrated relative resilience attributable to reverse migration providing labor supply and local consumption supporting demand (Abraham & Shrivastava, 2022).

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Employment quality dimensions warrant attention beyond aggregate employment counts. Evidence indicates increased prevalence of casual arrangements, piece-rate compensation, and reduced social security coverage among MSME workers during recovery (Lerche & Shah, 2023). Digital platform labor—gig work mediated through aggregator applications—absorbed substantial displaced workers, though classification ambiguities and benefit exclusions characterize these arrangements (Surie, 2022).

Skill formation functions of MSMEs faced disruptions with implications for long-term human capital development. Apprenticeship programmes experienced reductions, and informal on-the-job training declined as enterprises prioritized survival over capacity building (Mehrotra & Parida, 2021). Government interventions through the National Apprenticeship Promotion Scheme and PMKVY (Pradhan Mantri Kaushal Vikas Yojana) provided partial compensation, though linkages to MSME employers remained limited (Ministry of Skill Development, 2023).

3.6 Sustainability and Green MSMEs

The emergence of sustainability considerations in MSME research represents a distinctive development during the review period. Convergence between pandemic recovery imperatives and climate commitments created policy space for integrating green transition objectives into MSME development strategies.

Evidence on MSME environmental practices indicates limited but growing adoption of sustainable technologies and processes. Survey-based studies suggest that approximately 12% of manufacturing MSMEs implemented energy efficiency improvements during 2020–2024, with adoption concentrated among medium enterprises in export-oriented sectors facing buyer pressure (Kumar & Subramaniam, 2023). Solar energy adoption showed accelerated uptake, particularly among enterprises in states offering capital subsidies, with payback periods reportedly shortening from 7 years to 4 years due to declining panel costs (MNRE, 2024).

Green finance instruments specifically targeting MSMEs remain nascent but expanding. SIDBI's green lending products and select commercial bank initiatives provided approximately ₹15,000 crore in green-labelled MSME credit by 2024, though this represents less than 1% of total MSME credit outstanding (SIDBI, 2024). The zero-effect zero-defect (ZED) certification scheme promoting quality and sustainability practices certified approximately 18,000 MSMEs by 2024, with certification correlating to improved market access in export channels (Quality Council of India, 2024).

Circular economy practices among MSMEs demonstrate early-stage development. Waste exchange platforms connecting enterprises for material reuse reached approximately 2,500 registered MSMEs by 2024, facilitating resource efficiency while generating supplementary revenue streams (FICCI, 2023). However, regulatory complexity regarding waste handling permissions and limited awareness among smaller enterprises constrains broader adoption (Joshi & Sekhsaria, 2022).

Critical perspectives caution against overstating green transition progress among MSMEs. Resource constraints, technical knowledge gaps, and immediate survival priorities systematically disadvantage smaller enterprises in adopting sustainability investments with longer payback periods (Kandpal & Kumar, 2021). Evidence suggests that sustainability initiatives may reinforce existing disparities, with larger, better-capitalized enterprises capturing benefits while smaller competitors face competitive pressures from compliance requirements they cannot afford (Kathuria et al., 2023).

4. Critical Analysis

4.1 Inconsistencies and Contradictions

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The synthesized evidence reveals several domains of contradictory findings warranting analytical attention.

Formalization effects: Studies diverge regarding whether increased formalization during the review period benefited MSMEs. Proponents emphasize improved credit access, government scheme eligibility, and market credibility following Udyam registration (Sharma & Verma, 2022). Critics counter that registration exposed previously informal enterprises to taxation and compliance requirements without commensurate benefits, particularly for micro enterprises whose limited transaction volumes minimize credit advantages (Chandrasekhar & Ghosh, 2023). This contradiction likely reflects genuine heterogeneity in formalization impacts across enterprise categories rather than methodological artifacts.

Policy additionality: Evaluations of government interventions yield inconsistent conclusions regarding whether supported enterprises would have survived absent intervention. Studies employing quasi-experimental designs with comparison groups suggest modest additionality, with ECLGS preventing approximately 15% of potential closures (Subramanian & Felman, 2022). Studies using self-reported counterfactual assessments indicate substantially higher perceived impact, suggesting possible attribution inflation (Mani & Mohanty, 2023). The absence of robust randomization or regression discontinuity designs in most policy evaluations limits causal inference.

Digital transformation benefits: While consensus supports positive associations between digital adoption and enterprise performance, studies disagree regarding the magnitude and durability of effects. Early pandemic studies reported dramatic advantages for digitally-enabled enterprises (Agarwal & Garg, 2022). Later studies incorporating longer observation periods indicate attenuating effects as digital adoption became more widespread, reducing competitive differentiation (Kapoor & Ramamurti, 2021). This pattern suggests initial studies may have captured temporary disruption effects rather than sustainable competitive advantages.

4.2 Methodological Weaknesses

Critical appraisal reveals systematic methodological limitations across the reviewed literature.

Sampling limitations: The majority of quantitative studies employ convenience sampling, enterprise association membership lists, or government registry samples, systematically excluding informal MSMEs representing the majority of the sector. Studies using formal enterprise databases effectively examine survivorship bias samples, as failed enterprises necessarily exit the sampling frame (Ghosh & Sengupta, 2023). Generalization claims frequently exceed sampling limitations.

Measurement challenges: Outcome variables—growth, performance, resilience—lack standardized operational definitions, complicating cross-study comparisons. Revenue growth, employment change, survival, profitability, and subjective assessments each capture different dimensions of enterprise outcomes, with limited attention to their interrelationships (Mishra & Dwivedi, 2023). Input variables, particularly digitalization and policy exposure, suffer similar definitional inconsistencies.

Temporal limitations: Cross-sectional designs predominate, capturing single time-point associations without establishing temporal precedence necessary for causal inference. The few longitudinal studies face attrition challenges as enterprise closures create survivor bias in later waves. Panel data methods, essential for separating time-invariant enterprise heterogeneity from policy effects, remain underutilized (Nagaraj & Srinivas, 2022).

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Endogeneity concerns: Studies examining relationships between interventions (credit access, digital adoption, policy support) and outcomes rarely address selection effects adequately. Enterprises accessing credit may differ systematically from non-accessing enterprises in unobserved dimensions correlated with outcomes, confounding intervention effects (Raj & Mukherjee, 2021). Instrumental variable approaches and natural experiments addressing these concerns remain rare.

4.3 Under-Researched Areas

The synthesis identifies several domains requiring additional scholarly attention.

Micro enterprise dynamics: Despite representing 99% of MSME population, micro enterprises receive disproportionately limited research attention. Studies frequently aggregate across size categories or focus specifically on small and medium enterprises where data availability and methodological tractability are superior. Mechanisms of micro enterprise formation, survival, growth, and contribution to economic recovery remain inadequately understood.

Informal sector linkages: The relationship between formal MSMEs and informal economy actors—subcontracting relationships, labor market connections, competitive dynamics—receives insufficient attention despite substantial economic interdependence. How formalization policies affect informal sector employment and incomes constitutes a critical knowledge gap.

Regional heterogeneity: While geographic variation in MSME development is acknowledged, few studies systematically examine why similar policies produce differential outcomes across states. Institutional quality, infrastructure adequacy, social capital, and administrative capacity likely moderate policy effectiveness, but comparative regional analysis remains limited.

Long-term sustainability: Studies predominantly examine short-term recovery metrics without assessing whether observed improvements constitute sustainable development trajectories. Whether enterprises demonstrating pandemic resilience maintain advantages under normalized conditions, and whether growth patterns are environmentally sustainable, remain unexamined.

5. Conceptual Framework

Drawing on synthesized evidence, this review proposes an integrative conceptual framework linking MSME-level drivers to sustainable economic recovery outcomes. The framework adapts dynamic capabilities theory (Teece, 2007) and institutional theory (North, 1990) to the specific context of post-crisis recovery in emerging markets.

5.1 Framework Components

A Conceptual Framework Linking External Enabling Environment, Dynamic Capabilities, and Sustainable Economic Recovery Outcomes

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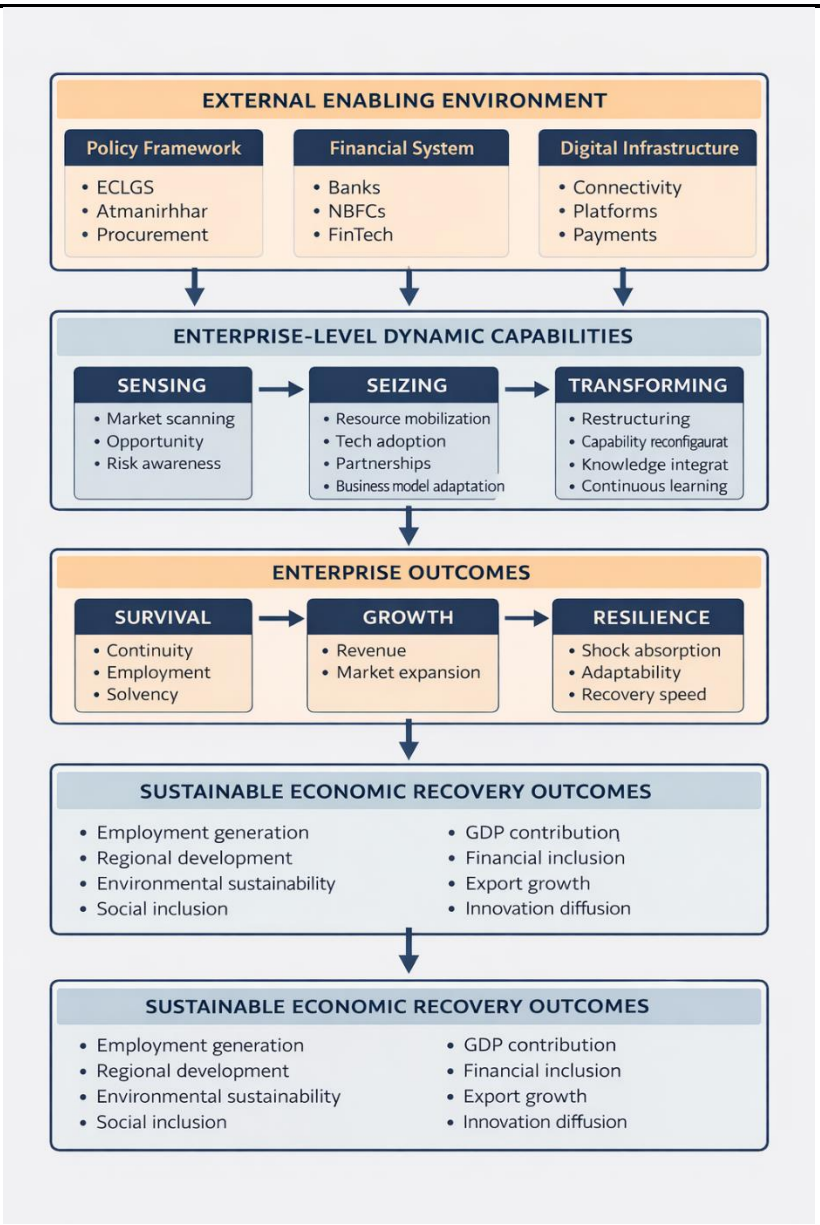

Source: This image is Generated by AI tool as inputs are provided by authors. The intention to take AI support is its excellence in alignment and other capabilities.

Caption: *This figure presents a multi-level conceptual framework illustrating how external enabling factors—comprising policy frameworks, financial systems, and digital infrastructure—shape enterprise-level dynamic capabilities (sensing, seizing, and transforming). These capabilities, in turn, influence key enterprise outcomes such as survival, growth, and resilience. The model further demonstrates how these firm-level outcomes collectively contribute to broader sustainable economic recovery outcomes, including employment generation, GDP contribution, financial inclusion, innovation diffusion, and long-term structural transformation.*

5.2 Framework Explanation

The framework conceptualizes sustainable economic recovery as emerging from the interaction between external enabling conditions and enterprise-level dynamic capabilities.

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External Enabling Environment: Three domains of external conditions shape the opportunity structure within which MSMEs operate. The policy framework encompasses fiscal support mechanisms, regulatory simplification, and market access interventions. The financial system includes formal banks, non-banking institutions, and emerging FinTech actors providing capital access. Digital infrastructure comprises connectivity, platform ecosystems, and payment systems enabling new business models.

Enterprise-Level Capabilities: Drawing on dynamic capabilities theory, the framework identifies three sequential capability types mediating between environmental conditions and enterprise outcomes. Sensing capabilities enable enterprises to detect opportunities and threats—market shifts, policy changes, technological possibilities—requiring external orientation and information processing capacity. Seizing capabilities allow enterprises to mobilize resources and execute adaptive strategies, including technology adoption, partnership formation, and business model innovation. Transforming capabilities enable organizational reconfiguration, knowledge integration, and learning from experience necessary for sustained adaptation.

Enterprise Outcomes: Dynamic capabilities produce enterprise-level outcomes categorized as survival (basic continuity), growth (performance improvement), and resilience (capacity for future shock absorption). These outcomes are interrelated; survival is necessary for growth, while growth enhances resources available for resilience.

Sustainable Recovery Outcomes: Aggregate economic recovery emerges from the population-level distribution of enterprise outcomes. Sustainable recovery is characterized by aggregate employment generation, GDP contribution, regional development balance, financial inclusion, export growth, innovation diffusion, environmental sustainability, social inclusion, and long-term structural transformation.

5.3 Key Relationships

The framework proposes several empirically testable relationships:

Proposition 1: Policy interventions, financial access, and digital infrastructure constitute complementary rather than substitutable enabling conditions; their combined presence produces greater effects than any single dimension alone.

Proposition 2: Enterprise outcomes are mediated by dynamic capabilities; external enabling conditions translate to outcomes only when enterprises possess sensing, seizing, and transforming capabilities to exploit opportunities.

Proposition 3: Capability development is path-dependent; enterprises with pre-crisis digital exposure or formal financial relationships developed stronger pandemic-period capabilities, creating cumulative advantage dynamics.

Proposition 4: Sustainable economic recovery requires threshold levels of enterprise outcomes across survival, growth, and resilience dimensions; high growth without resilience or survival without growth produces fragile recovery susceptible to subsequent shocks.

6. Discussion

6.1 Interpretation of Findings

The synthesized evidence supports characterizing the post-pandemic MSME recovery in India as asymmetric, accelerated in certain dimensions while lagging in others. Formalization metrics—registration, credit access, platform participation—show robust improvement, while employment quality, distributional equity, and sustainability outcomes demonstrate limited progress.

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The digital transformation documented across multiple studies represents the most consequential structural change during the review period. However, interpreting this transformation requires distinguishing between crisis-induced adoption and sustainable capability development. Evidence suggesting attenuating performance advantages as digital adoption becomes widespread indicates initial studies may have captured temporary differentiation effects rather than permanent competitive advantages (Kapoor & Ramamurti, 2021). The long-term sustainability of digital transformation as a driver of MSME competitiveness likely depends on continued capability development beyond initial adoption.

Policy interventions under Atmanirbhar Bharat provided critical liquidity support during acute crisis phases but raise questions regarding fiscal sustainability and moral hazard. The scale of ECLGS disbursements—exceeding ₹3.7 lakh crore—represents substantial contingent liability, and the quality of supported loans remains uncertain as guarantee periods expire (Chandrasekhar & Ghosh, 2023). Whether supported enterprises developed genuine viability or merely postponed distress will determine long-term policy assessments.

6.2 Theoretical Contributions

The proposed conceptual framework contributes to theoretical understanding in several respects. First, by integrating dynamic capabilities theory with institutional theory, the framework addresses limitations of each approach in explaining post-crisis recovery. Dynamic capabilities theory emphasizes firm-level agency but inadequately theorizes the environmental conditions enabling capability exercise. Institutional theory addresses environmental shaping of organizational behavior but insufficiently explains variation among enterprises facing similar institutional conditions. The integrated framework specifies how institutional conditions create opportunity structures that enterprises with differential capabilities exploit differently.

Second, the framework advances understanding of economic resilience as distinct from growth or survival. Resilience—the capacity to absorb shocks and adapt—represents an outcome qualitatively different from performance improvement under favorable conditions. The reviewed evidence suggests that enterprises demonstrating high growth during recovery phases do not necessarily possess resilience attributes ensuring future shock absorption, and vice versa (Vyas, 2021).

Third, the framework contributes to emerging scholarship on sustainable development in MSME contexts by integrating environmental sustainability as a constituent element of recovery quality rather than a separate objective. This integration addresses critiques that economic recovery frameworks inadequately incorporate ecological constraints (Joshi & Sekhsaria, 2022).

6.3 Contextual Factors

Several features of the Indian context shape the applicability and interpretation of findings.

Institutional complexity: The federal structure creates heterogeneous implementation environments, with state-level policies, administrative capacity, and political priorities mediating central government interventions. Studies conducted in states with robust administrative capacity may not generalize to states with weaker implementation infrastructure (Nagaraj & Srinivas, 2022).

Informality prevalence: The substantial informal economy surrounding formal MSMEs means observed formal sector outcomes may inadequately capture total economic effects. Formalization policies may simply shift activity between formal and informal sectors rather than creating net economic gains (Chandrasekhar & Ghosh, 2023).

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Demographic factors: India's young population and expanding labor force create employment absorption imperatives distinct from aging economies. MSME policies must address not only recovery of pre-crisis employment but absorption of new labor market entrants, raising the threshold for satisfactory recovery (Mehrotra & Parida, 2021).

Infrastructure constraints: Persistent deficits in power supply, transportation, and digital connectivity create binding constraints particularly acute for smaller enterprises lacking resources to invest in private alternatives. These constraints differentially affect enterprises across regions and size categories (Pandey & Sharma, 2022).

7. Implications

7.1 Policy Implications

The synthesized evidence yields several actionable policy recommendations.

Targeting and graduation: Credit guarantee schemes should explicitly incorporate graduation strategies, transitioning supported enterprises from guaranteed lending to regular banking relationships as their creditworthiness improves. Current ECLGS design lacks clear graduation pathways, risking perpetual guarantee dependency (Subramanian & Felman, 2022).

Micro enterprise focus: Given severe under-service of micro enterprises by existing interventions, dedicated mechanisms addressing their distinct constraints—including smaller loan sizes, simplified documentation, and mobile-first interfaces—warrant development. The account aggregator framework offers infrastructure for cash-flow based assessment potentially reducing collateral requirements constraining micro enterprise credit access (RBI, 2023).

Digital infrastructure investment: Public investment in digital connectivity—particularly 4G/5G expansion in rural areas, reduction of data costs, and digital literacy programmes—would address preconditions for MSME digital adoption. Current private infrastructure investment concentrates in commercially attractive urban markets, leaving underserved areas without enabling conditions (Srinivasan & George, 2022).

Regulatory coherence: Streamlining the multiple registration, certification, and compliance requirements facing MSMEs—currently fragmented across central and state agencies—would reduce compliance burdens. Single-window systems and sunset review mechanisms for regulations would improve business environment quality (World Bank, 2022).

Green transition support: Dedicated green credit lines with concessional pricing and technical assistance for sustainability investments would enable MSME participation in climate transition. Current green finance instruments remain inaccessible to smaller enterprises lacking capacity for complex application processes (SIDBI, 2024).

7.2 Managerial Implications

Enterprise-level implications for MSME owners and managers emerge from the evidence synthesis.

Capability investment: Evidence suggests that enterprises investing in capability development—technology skills, financial management, market intelligence—demonstrate superior outcomes. Managers should prioritize capability building even during crisis periods rather than treating training and development as discretionary expenditures (Agarwal & Garg, 2022).

Formalization assessment: Decisions regarding formalization should involve careful assessment of enterprise-specific cost-benefit ratios. While formalization provides access to credit and government schemes, compliance requirements impose burdens potentially outweighing benefits for the smallest enterprises with limited transaction volumes (Sharma & Verma, 2022).

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Digital strategy: Beyond basic digital adoption, evidence supports developing digital capabilities enabling business model innovation rather than merely digitizing existing processes. Platform participation, data-driven decision making, and digital marketing capabilities distinguish high-performing digitally-enabled enterprises (Kumar & Rajan, 2021).

Network development: Multiple studies highlight the value of network relationships—trade association membership, cluster participation, buyer-supplier collaboration—in providing information access, collective bargaining power, and crisis support. Investment in relational capital warrants managerial attention (Tripathi & Kumar, 2022).

7.3 Academic Implications

The review identifies methodological and theoretical developments required to advance the field.

Longitudinal designs: Addressing temporal limitation of current evidence requires investment in panel data infrastructure tracking enterprises over multiple years. Collaboration between researchers and government agencies maintaining enterprise registries could enable longitudinal analysis currently impossible with cross-sectional surveys.

Informal sector integration: Methodological innovations enabling research on informal enterprises—creative sampling strategies, partnership with informal sector organizations, participatory research approaches—would address significant knowledge gaps regarding majority of economic activity excluded from current studies.

Comparative analysis: Systematic comparison of MSME recovery across Indian states, and between India and other emerging markets, would illuminate how institutional and contextual factors moderate policy and enterprise-level effects. Current India-centric focus limits theoretical generalization.

Interdisciplinary synthesis: Integration across economics, management, public policy, and development studies disciplinary perspectives—each offering distinct theoretical frameworks and methodological traditions—would enrich understanding beyond discipline-specific treatments.

8. Future Research Directions

Building on identified gaps and limitations, the following specific research questions warrant investigation.

Question 1: What mechanisms explain heterogeneous formalization effects across MSME categories, and under what conditions do formalization benefits exceed costs for micro enterprises?

This question addresses contradictory findings regarding formalization impacts. Research designs employing regression discontinuity around eligibility thresholds or propensity score matching comparing marginal formalizers with similar informal enterprises could provide causal identification.

Question 2: How do digital platform business models affect MSME market access, and what regulatory frameworks balance platform efficiency with fair treatment of small enterprise participants?

The growth of platform-mediated commerce raises questions about MSME positioning within platform ecosystems. Mixed-methods research combining transaction data analysis with qualitative investigation of platform-MSME relationships would illuminate power dynamics and regulatory implications.

Question 3: What enterprise-level and institutional factors explain regional variation in MSME recovery outcomes across Indian states?

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Comparative case study designs examining states with similar policy environments but different outcomes could identify implementation factors, institutional quality dimensions, and social capital characteristics moderating policy effectiveness.

Question 4: How do MSME environmental practices affect competitiveness, and what interventions effectively enable sustainability transitions for resource-constrained smaller enterprises?

The nascent integration of sustainability into MSME research requires development. Longitudinal studies tracking enterprises adopting environmental improvements could assess competitiveness effects, while experimental evaluations of green finance and technical assistance programmes could establish intervention effectiveness.

Question 5: What are the dynamic effects of emergency support withdrawal as pandemic-era policies sunset, and how can policy design manage transition to normalized conditions?

As emergency measures expire, research tracking enterprise outcomes through the transition period would inform understanding of support dependency and graduation dynamics. Natural experiment designs exploiting variation in scheme expiration timing could provide causal identification.

9. Conclusion

This systematic review synthesized evidence from 52 empirical studies examining MSME growth and economic recovery in India during 2020–2025, following PRISMA 2020 guidelines to ensure methodological transparency and replicability. The evidence reveals a recovery trajectory characterized by formal sector expansion, accelerated digital transformation, and partial employment restoration, alongside persistent distributional inequities, sustainability deficits, and implementation challenges.

Six interconnected driver categories emerged from thematic synthesis: MSME growth trends demonstrate recovery but mask substantial heterogeneity across size categories, sectors, and regions; digital transformation constitutes the most consequential structural change, though its durability as competitive advantage remains uncertain; government policy interventions provided critical crisis support while raising questions about fiscal sustainability and targeting effectiveness; financial access improved through multiple channels yet substantial credit gaps persist, particularly for micro enterprises; employment generation partially recovered while employment quality deteriorated; and sustainability practices remain nascent with limited adoption among smaller enterprises.

The proposed conceptual framework integrates external enabling conditions—policy, finance, digital infrastructure—with enterprise-level dynamic capabilities—sensing, seizing, transforming—to explain variation in enterprise outcomes and their aggregate implications for sustainable economic recovery. This framework advances theoretical understanding by specifying mechanisms linking micro-level behaviors to macro-level outcomes while incorporating sustainability as a constituent element of recovery quality.

Critical analysis identified methodological weaknesses pervading the literature, including sampling limitations excluding informal enterprises, cross-sectional designs inadequate for causal inference, and measurement inconsistencies complicating cross-study comparison. Under-researched areas—micro enterprise dynamics, informal sector linkages, regional heterogeneity, long-term sustainability—warrant dedicated investigation.

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Implications extend to policy (targeting, digital infrastructure, regulatory coherence), management (capability investment, strategic formalization decisions, network development), and academic practice (longitudinal designs, informal sector integration, interdisciplinary synthesis). Five specific research questions providing actionable agendas for future investigation were proposed.

The MSME sector's contribution to India's economic recovery demonstrates the adaptability and resilience of small-scale enterprise, while revealing the structural constraints requiring sustained attention. As emergency measures transition to normalized conditions, the foundations for sustainable, inclusive, and environmentally responsible MSME development established during the recovery period will determine whether short-term resilience translates to long-term transformation.

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