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Do MSME clusters outlive policy support? Rethinking post-formation sustainability.

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Abstract

Cluster-based development in India has been widely used to strengthen micro, small and medium enterprises (MSMEs) through shared infrastructure and institutional support, particularly under schemes such as the MSE-CDP. However, policy and academic attention have largely centred on cluster formation and short-term outcomes, with limited understanding of what happens once funding and facilitation phases conclude.

This conceptual paper asks whether MSME clusters outlive policy support and argues that cluster success should be assessed not only through formation metrics but through long-term continuity, governance and adaptive capacity. Viewing clusters as evolving socio-economic systems, it highlights the gap between policy lifecycles and cluster lifecycles and draws attention to key factors influencing sustainability, including governance continuity, market integration, innovation capability and stakeholder engagement. The paper calls for greater emphasis on post-formation support and ongoing assessment to ensure clusters remain viable beyond funding cycles and to encourage further empirical inquiry into cluster sustainability.

Keywords: *MSME clusters; cluster sustainability; post-formation support; MSE-CDP; regional development.*

1. Introduction

Rapid economic growth in emerging economies like India has been accompanied by uneven patterns of industrialisation and regional development. Investment and employment remain spatially concentrated across select regions and sectors, contributing to persistent disparities in local economic outcomes. In this context, cluster-based development has gained policy relevance as a means of strengthening local production systems and addressing spatial imbalances in industrial growth (Chakraborty, 2021). Cluster is a collective tactic to address challenges faced by small entrepreneurs. In recent years, there has been a significant focus on clusters in economic development, particularly in developing countries, as they are acknowledged as potential drivers of enterprise development and innovation (UNIDO, 2013).

We have met business owners who are enthusiastic to innovate, scale up, or create a competitive advantage to face competition, but are struggling due to a lack of financial resources or capital. However, when they seek funds, they face major hurdles, which include banks demanding collateral, investors doubting repayment capacity, and the scale of investment required for infrastructure or technology going beyond what a single small enterprise can manage. Because of these limitations, many entrepreneurs remain small, and as a country, we end up importing innovative products instead of producing them here. This not only slows our economic development but also makes us consumers of others' growth. We strongly believe the government introduced the cluster model to address precisely this challenge. These types of interventions not only improve the competitiveness of individual enterprises but also contribute to the overall economic development of the country (Abdelmoula, 2024). By associating legally as a group, entrepreneurs can access common facilities such as infrastructure, advanced testing labs, machinery, and skilled human resources, which are funded largely by government grants Ministry of MSME issue grants to eligible clusters to about 95% of the total project cost, which does not need to be paid back and does not account for a cluster's liability (Ministry of MSME, 2022). This reduces their costs, lowers their risks, and enables them to price products competitively in both domestic and global markets. At the same time, the evolution and sustainability of such clusters depend not only on structural conditions but also on the agency of firms, entrepreneurs and supporting institutions that shape how clusters emerge, stabilise and transform over time (Trippl et al., 2015).

We see clusters as not just any manufacturing unit, they include a group of homogeneous business enterprises, government departments, and society that interact to form a living ecosystem. From our perspective, the "reality" of a cluster goes far beyond its physical infrastructure. It is like a forest ecosystem. At the same time, the MSME Ministry, Central Government, State Government, the Special Purpose Vehicle, and society at large become part of this system.This makes clusters far more multifaceted than individual enterprises. They involve public funds, government oversight, collective decision-making through a Section 8 SPV company, and the dynamics of entrepreneurs from the same industry but running different organizations.

2. Literature review

Clusters are basically geographic concentrations of interconnected organizations in a particular field. They manufacture complementary products and foster innovation through proximity to sophisticated buyers, suppliers, and institutions. That is when companies share geographic, cultural, and institutional proximity; they gain unique advantages such as easier access, stronger relationships, richer information, and stronger incentives, which are benefits usually hard to achieve when they are far apart (Porter, 1998). The sustainability of clusters cannot be measured only by counting how many have been sanctioned or how much funding has been disbursed. What matters is whether they are actually delivering value, whether they are helping entrepreneurs grow, whether the government sees real development in terms of productivity and competitiveness, and whether society benefits through employment and improved revenue (Das, 2008).

As mentioned above, that clusters are not liable to pay the grant issued by the Ministry of MSME, does not mean they can operate as they like; it is the responsibility of the cluster members to ensure that these projects are sustained in the long run, meaningfully and as promised. From the side of entrepreneurs who are members of SPV, we need to capture whether they feel cluster membership is truly beneficial, whether it improves their innovation capacity, reduces costs, or opens new markets. From the government's side, we must look at whether the scheme meets its policy objectives, such as employment generation, exports, and sustainable growth, and whether these clusters are operating seriously to fulfil the real objective for which they are formed, which is the value that they can give back to the government. From the society's side, we need to explore whether clusters provide jobs,

improve workers' welfare, and contribute to long-term development for the economy as a whole. Quantitative data such as production growth, cost reduction, revenue generation, profit, global market development, and employment opportunities are significant as well.

Cluster promotion is grounded in the understanding that competitiveness increasingly arises from networks of interconnected firms and institutions rather than isolated enterprises (Wolman & Hincapie, 2015). Cluster-oriented policies strengthen shared infrastructure, enable knowledge spillovers and improve market access, thereby enhancing collective efficiency and aligning policy support with the collaborative nature of modern economic competition.

The Micro and Small Enterprises Cluster Development Programme (MSE-CDP) represents one of the most prominent policy mechanisms through which cluster-based industrialisation has been pursued in India. Through support for common infrastructure, technology upgradation and institutional facilitation, the programme aims to enhance productivity and competitiveness of enterprises operating within geographically proximate industrial concentrations.

However, the policy and scholarly discourse surrounding cluster development has largely focused on cluster formation, infrastructure creation and early operationalisation. Since its launch in 2003, the cluster development programme in India has drawn significant academic and policy attention as a strategic intervention for enhancing the productivity and competitiveness of micro and small enterprises. It is evident from the literature that extant research highlights the various dimensions like the effectiveness of the Cluster Development Programme in upgrading productivity (Unnisa & Amulya, 2016), the role of Special Purpose Vehicles (SPVs) and academia–industry linkages in capacity building (Nath, 2020), regional variations in adoption and performance (Sharma & Kohli, 2019), and the potential of clusters to drive rural entrepreneurship and women's empowerment (Manna & Mistri, 2020; Bhaskaran, 2020) etc.

Lot of research works have come up with findings that clusters generate benefits such as economies of scale, technology adoption, improved market access, employment generation, and networking opportunities (Rawat, Mittal, & Aggarwal, 2017). Global contributions, such as Porter's (1998) framework on clusters as engines of competitiveness, Giuliani's (2005)

insights on absorptive capacity, and Morrison and Rabellotti's (2009) discussion on uneven knowledge flows, have enriched the Indian cluster development discourse.

Inspite of these contributions, much attention has been given towards short- to medium-term outcomes of the Cluster development that were largely measured in terms of tangible indicators like turnover, machinery adoption, or export orientation. Hardly any study critically examined the long-term sustainability of these clusters once policy funding phases out, or how organizational culture, leadership, and stakeholder readiness shape cluster resilience. This gap becomes the focal point because cluster policies are typically designed for a specific duration but the economic and social benefits are expected to go far beyond government intervention.

Cluster theory offers important insights for policy but provides limited clarity on how governments can effectively build or sustain cluster dynamics in practice. While public interventions may attempt to fill gaps in supply chains, support collective assets and foster collaboration, the interconnectedness and spillover effects that underpin cluster benefits are difficult to engineer directly and often yield modest gains. Scholars note that cluster advantages, though real, can be small and uneven, and that policy outcomes depend heavily on local conditions, institutional coordination and the provision of broader public goods such as infrastructure, skills and networking platforms. Consequently, cluster-based development policy is best understood not as a tool for creating clusters from scratch or "picking winners," but as an approach that strengthens existing agglomerations by supporting collaboration, information exchange, shared services and enabling conditions for long-term competitiveness (Wolman & Hincapie, 2015).

Metrics of success often include the number of clusters established, investments mobilised and facilities created. Such indicators provide limited insight into the long-term sustainability of clusters once the policy and funding lifecycle concludes. Clusters, by their nature, evolve over extended periods and require sustained coordination, governance and institutional support. Without mechanisms for continuous assessment and mentoring, clusters may experience decline in participation, weakened institutional structures or reduced collective action after initial support phases end.

Literature reveals that while the policy-led cluster model has been studied in detail, the there are few other blind spots too that were not addressed of which the major ones are

1. Viability of clusters beyond policy lifespans: Limited research has been carried out on how clusters sustain competitiveness and collaboration once government support ends.

2. Readiness and Resilience Factors: Few studies adopt a multi-level readiness framework (individual, group, organizational, ecosystem) to examine why some clusters adapt and thrive while others do not. The most significant gap lies in the lack of a sustainability assessment in cluster development research. While clusters are celebrated as drivers of competitiveness, the long-term resilience of clusters remains under-developed. Most existing research captures "input–output" relationships without adequately exploring the institutional and cultural underpinnings that explain why some clusters endure and others decline (Barney, 1986).

This gap is highly relevant in India, where many clusters demonstrate early success during initial stages when they receive government support in terms of capital for their establishment but struggle later on with decision-making, trust building, inclusivity concerns, and competitiveness once external funding stops. They concentrate on just formation but not post establishment. The gap also connects with inclusivity concerns, as knowledge flows and benefits often concentrate in a few firms only, leaving others behind (Giuliani, 2005; Morrison & Rabellotti, 2009).

This raises a critical question for both policy and research: do MSME clusters outlive policy support? More specifically, how can cluster sustainability be conceptualised beyond formation and initial funding phases? The absence of systematic post-formation monitoring and evaluation frameworks creates a gap between policy intent and long-term outcomes. This gap is particularly relevant in regional economies such as Kerala, where MSMEs form the backbone of local production systems and cluster-based development is expected to generate sustained economic and employment benefits. Clusters evolve over time, emerging, transforming and sometimes declining or disappearing (Martin & Sunley, 2011).

3. Theoretical foundations

3.1 Cluster theory and collective efficiency

Cluster theory emphasises the benefits of geographic concentration of interconnected firms, suppliers and supporting institutions. Spatial proximity facilitates knowledge spillovers, shared labour markets and collaborative innovation. Collective efficiency emerges from both

passive externalities and active cooperation among firms. However, sustaining these benefits over time requires ongoing coordination and institutional support. Clusters are defined as a geographical agglomeration of competing and related industries; and where there is evidence of improved performance such as a growth and profitability arising from the agglomeration of firms in a region (Kuah, 2002). It acknowledges that self-interest is a primary motive for collaboration, while propensity to collaborate increases with the complexity of problems.

3.2 Stakeholder theory and cluster governance

Clusters can be conceptualised as multi-stakeholder systems involving firms, government agencies, financial institutions, industry associations and knowledge organisations. Stakeholder theory highlights the importance of aligning interests and fostering trust among actors. Sustainable clusters require governance structures that enable continuous coordination, joint decision-making and conflict resolution. Without sustained stakeholder engagement, collective initiatives may weaken over time.

Analyses of cluster evolution must recognise the role of human agency across different stages of development, as the emergence, growth and transformation of clusters are shaped not only by structural conditions but also by the actions of entrepreneurs, firm leaders and institutional actors. Such agency influences how clusters adapt, sustain collaboration and respond to changing economic contexts, underscoring the importance of leadership and coordinated action in long-term cluster sustainability (Trippl et al., 2015).

Stakeholder theory offers a useful lens for addressing complex organisational challenges by recognising that effective decision-making must balance value creation, relationship management and considerations of fairness. This perspective is particularly relevant in public sector contexts, where multiple stakeholders, competing interests and diverse goals often create tensions that require careful coordination and negotiation (Sarturi et al., 2022).

3.3 Institutional perspective

Institutional theory underscores the role of formal and informal structures in shaping economic activity. Clusters formed through policy interventions may initially rely on external facilitation and funding. Over time, sustainability requires the development of internal governance mechanisms and institutional embeddedness. The transition from policy-driven coordination to self-governance represents a critical phase in cluster evolution.Much of the

existing research in institutional theory has concentrated on large organisations, with comparatively limited attention to small and medium enterprises and how they navigate complex institutional environments. SMEs often operate with constrained resources and face greater exposure to external pressures, making their responses to regulatory, market and social expectations distinct from those of larger firms. Despite the relevance of institutional influences for smaller enterprises, there remains a lack of comprehensive understanding of how institutional conditions shape their strategic behaviour and adaptive responses (Balzano et al., 2025).

3.4 Sustainability lens

Sustainability in cluster contexts extends beyond economic performance to include institutional continuity, network resilience and adaptive capacity. Clusters must develop mechanisms for learning, innovation and market adaptation. Sustainability therefore, involves both structural and relational dimensions. Sustainability can be understood as the capacity of a system to endure and remain viable over time. In broader terms, it reflects efforts to maintain or improve desirable conditions while strengthening the ability to adapt and respond to changing circumstances. It also involves balancing social, economic and environmental objectives in ways that support long-term resilience and continuity. Sustainability can be understood as the capacity of a system to endure and remain viable over time. In broader terms, it reflects efforts to maintain or improve desirable conditions while strengthening the ability to adapt and respond to changing circumstances. It also involves balancing social, economic and environmental objectives in ways that support long-term resilience and continuity (Lis et al., 2023).

4. Cluster policy and the MSE-CDP lifecycle gap

The MSE-CDP provides a structured approach to cluster formation through diagnostic assessment, infrastructure support and institutional facilitation. While these interventions are essential for initiating cluster activity, they are typically time-bound. Evaluation frameworks often focus on outputs generated during the project period rather than long-term outcomes.

This creates a lifecycle gap between formation and sustainability. Key questions emerge: How is cluster success defined beyond infrastructure utilisation? Who evaluates clusters after the scheme concludes? Do clusters maintain collective initiatives and governance structures?

Are there mechanisms for continuous mentoring and support? The absence of longitudinal metrics and assessment systems limits the ability to evaluate cluster sustainability.

5. Clusters and SDG-Linked regional development

Clusters play a significant role in advancing regional economic development and align with broader sustainable development objectives. By promoting local employment, industrial diversification and innovation, clusters contribute to inclusive growth. However, their contribution to sustainable development depends on their longevity and adaptive capacity. Clusters that dissolve after initial support fail to generate sustained benefits. Therefore, integrating lifecycle-based assessment into cluster policy is essential for achieving long-term development outcomes. This perspective aligns closely with **SDG 9 (Industry, Innovation and Infrastructure),** as sustained and well-governed clusters can strengthen local industrial ecosystems, support innovation diffusion and enable shared infrastructure that enhances long-term productivity and resilience.

6. Post-Formation cluster sustainability model

Building on the emerging emphasis in cluster research on a cluster "life cycle," this paper adopts a conceptual position that views cluster development as a dynamic and evolving process rather than a one-time policy intervention (Martin & Sunley, 2011). While many policy frameworks treat cluster formation as the primary outcome, the long-term sustainability of clusters depends on their ability to transition from externally supported arrangements to internally embedded and adaptive systems. In this view, cluster sustainability can be understood as a continuum shaped by governance evolution, institutional embeddedness and the strengthening of collective capabilities over time. Having said that, complex systems models of cluster evolution are as yet very undeveloped (Martin & Sunley, 2011).

Building on this gap, the present paper conceptually outlines cluster evolution across five interrelated stages—formation, activation, stabilisation, sustainability and transformation. These stages are proposed as an analytical heuristic rather than a fixed linear sequence, intended to capture the evolving nature of cluster dynamics and the shifting forms of support required across different phases of development.

Formation refers to the policy-driven establishment of clusters through diagnostic studies, infrastructure creation and institutional facilitation. During this phase, government agencies and implementing institutions play a dominant role in coordinating stakeholders and mobilising resources.

Activation involves the initial operationalisation of shared infrastructure and the emergence of collective activities such as joint procurement, skill development and market engagement. The effectiveness of this stage depends on the degree to which firms participate in collective initiatives and develop trust-based relationships.

Stabilisation occurs when cluster routines, governance mechanisms and institutional arrangements begin to consolidate. Special purpose vehicles or cluster associations assume greater responsibility for coordination. However, this phase remains vulnerable to disruptions if leadership continuity and stakeholder engagement are weak.

Sustainability represents a stage in which clusters demonstrate the capacity for self-governance, financial viability and market integration. Collective initiatives continue beyond policy support, and clusters develop internal mechanisms for coordination and innovation. Sustainability does not imply independence from public institutions but rather a shift toward collaborative governance.

Transformation refers to the ability of clusters to adapt to changing technological, market and policy environments. Clusters that reach this stage exhibit innovation capability, network expansion and diversification. Transformation reflects long-term resilience and the ability to generate sustained regional economic impact.

The lifecycle perspective highlights that cluster sustainability is not guaranteed by formation alone. Each stage requires distinct forms of governance and institutional support. Policy frameworks that focus exclusively on formation risk neglecting the critical transitions required for long-term viability.

Dimensions of sustainability

- Cluster sustainability can be conceptualised across five interrelated dimensions that together shape long-term performance.

- Governance continuity refers to the persistence of coordination mechanisms, leadership structures and decision-making processes beyond the project lifecycle.
- Market integration involves the ability of clusters to establish stable demand linkages, access new markets and respond to competitive pressures.
- Innovation capability reflects the extent to which clusters adopt new technologies, processes and products.
- Financial viability refers to the capacity of cluster institutions to generate resources for maintenance, upgrading and collective activities.
- Stakeholder engagement encompasses the ongoing participation of firms, government agencies, financial institutions and knowledge organisations.

Challenges

While governance continuity, market integration and institutional embeddedness are central to cluster sustainability, the capacity of cluster actors to adapt and learn collectively also shapes long-term outcomes. From an absorptive capacity perspective, clusters depend on the ability of firms and supporting institutions to recognise the value of new knowledge, assimilate it and apply it within shared production and market contexts. In many MSME-dominated clusters, such capacities remain uneven and often rely on continued facilitation through training institutions, intermediaries and policy support. Where absorptive capacity is weak, shared infrastructure may remain underutilised, innovation adoption may be slow and collective initiatives may decline once external facilitation is withdrawn (Cohen & Levinthal, 1990; Zahra & George, 2002).

At the same time, transitions from externally supported coordination to internally sustained collaboration can encounter forms of innovation resistance. Firms may hesitate to participate in joint initiatives, adopt new technologies or invest in shared governance structures due to uncertainty, perceived risks or limited short-term incentives. Such resistance can hinder the development of trust-based collaboration and slow the consolidation of cluster-level capabilities. Without continued mentoring, facilitation and trust-building mechanisms, clusters may struggle to move from project-based cooperation to embedded collective action (Talke & Heidenreich, 2014).

These dynamics suggest that cluster sustainability is not determined solely by infrastructure provision or financial support but also by the behavioural readiness and learning capacity of

participating firms and institutions. Sustained engagement, knowledge exchange and institutional support are therefore critical in enabling clusters to transition from externally driven coordination to adaptive and self-sustaining systems.

Evolving role of government

A central proposition of this paper is that the role of government in cluster development must evolve across the lifecycle. Traditional policy approaches position government primarily as a funder and infrastructure provider during the formation stage. However, long-term sustainability requires a broader conception of governance.

During the formation phase, government agencies function as creators and coordinators, facilitating diagnostic studies, infrastructure development and institutional formation. In the activation stage, the role shifts toward facilitation, supporting capacity building and stakeholder coordination.

As clusters move toward stabilisation, government involvement should transition toward assessment and monitoring. This includes evaluating the effectiveness of governance structures, participation levels and market engagement. Continuous assessment can identify early signs of decline or fragmentation and enable corrective interventions.

In the sustainability phase, government roles should emphasise mentoring and enabling rather than direct control. This may involve supporting leadership development, facilitating market linkages and enabling access to innovation networks. The objective is not to perpetuate dependency but to strengthen adaptive capacity.

To operationalise this evolving role, the paper proposes the concept of a continuous cluster health monitoring system. Such a system would track indicators across governance, market performance, innovation and participation. Rather than one-time evaluations, periodic assessments would provide insights into cluster trajectories and inform policy adjustments.

Possible indicators include:

- member retention and participation rates
- frequency of collective initiatives
- utilisation of shared facilities
- revenue growth and market diversification

- adoption of new technologies
- institutional activity levels

These indicators would enable policymakers to move from formation-centric metrics toward lifecycle-based evaluation. Continuous monitoring could support targeted interventions, mentoring and policy redesign aimed at enhancing long-term sustainability.

MSE clusters' ability to last doesn't come from a few separate causes. It is where structural enablers (like how institutions work, how SPVs work, and funding support) and social-organizational traits (like trust, teamwork, leadership, and inclusion) meet.

7. Implications and scope

This paper seeks to address both academic and policy concerns surrounding the MSE-CDP by shifting attention from short-term cluster formation outcomes to long-term sustainability and resilience. From an academic perspective, it contributes to cluster literature by foregrounding issues such as governance continuity, organisational readiness, inclusivity and leadership, and by integrating people- and organisation-centred perspectives into discussions of cluster development. From a policy and industry standpoint, the continued public investment in cluster programmes underscores the need to better understand how clusters function beyond funding cycles and how targeted support can strengthen non-performing or vulnerable clusters. For practitioners, the discussion highlights the importance of governance mechanisms, collaborative networks and innovation-oriented practices in sustaining competitiveness. Overall, the paper offers a conceptual reflection that encourages further empirical inquiry into how clusters evolve, endure and generate long-term regional development outcomes beyond initial policy support.

8. Conclusion

Cluster-based development has been widely used to enhance the competitiveness of MSMEs in regional economies, yet policy attention remains heavily focused on cluster formation and initial infrastructure creation. This paper argues that such a formation-centric approach is insufficient for understanding the long-term contribution of clusters to regional development. By viewing clusters as evolving socio-economic systems embedded in institutional and stakeholder networks, it emphasises that sustainability depends on governance continuity, market integration, innovation capacity and sustained engagement beyond the funding

lifecycle. The paper highlights the need to reposition the role of government from a one-time facilitator of formation to an ongoing enabler that supports coordination, periodic assessment and adaptive capacity. From a regional economic perspective, clusters should be evaluated not by how many are created but by how many endure, adapt and continue generating value over time. A lifecycle-oriented understanding of cluster development thus offers a more meaningful basis for assessing the effectiveness of cluster-based policy and for guiding future research on cluster trajectories and sustainability.

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