

## **Economic Transformation in India: Sustainable Industrial Growth and the Role of MSMEs, Innovation, and Startups**

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### **Abstract:**

This study critically examines the implementation of Sustainable Development Goals (SDGs) in India, with particular emphasis on the Telugu states of Andhra Pradesh and Telangana. Despite India's commitment to achieving the 2030 Agenda, significant challenges persist in translating global frameworks into locally relevant action. Through a mixed-methods approach combining quantitative analysis of SDG India Index data (2018-2024) and qualitative assessment of policy initiatives, this research evaluates the progress, bottlenecks, and transformative potential of SDG implementation at subnational levels. The findings reveal that while both states achieved "Front Runner" status with scores of 74/100, critical gaps remain in gender equality (SDG 5), zero hunger (SDG 2), and climate action (SDG 13). The study proposes a transdisciplinary framework emphasizing bottom-up participatory governance, enhanced fiscal autonomy for local governments, and cross-scale institutional coordination. The research contributes to understanding how developing nations can balance competing socio-economic and environmental priorities while addressing regional disparities and uncertainty in resource mobilization

**Keywords:** Economic Transformation, MSMEs, Sustainable Industrial Growth, Innovation, Startups, India, Inclusive Development, Aatmanirbhar Bharat

### **1. Introduction**

In the last few decades, India's economic path has changed dramatically due to the drive for globalization, liberalization, and digital transformation. However, as the nation's economy becomes one of the biggest in the world, the emphasis needs to change from unsustainable growth to inclusive and sustainable development. Micro, small, and medium-sized businesses (MSMEs) and the growing startup ecosystem are crucial to this shift. MSMEs are the backbone of India's local economies, employing over 120 million people and making up around 30% of the country's GDP. Additionally, they account for about 40% of exports and 45% of manufacturing output. Only 16% of MSMEs have official access to credit, despite their reach, underscoring policy and infrastructure deficiencies. Government programs like the Credit Guarantee Scheme (CGTMSE), MUDRA,

#### **1.1 Methodology**

This research uses a mixed-method approach combining qualitative review and quantitative trend analysis. It draws on secondary data and empirical case studies from credible global and national sources. The methodology involves comparing policy frameworks, MSME/startup growth patterns, and sustainability indicators across regions and sectors.

## 1.2 Data Sources

Data is derived from DPIIT Startup India Reports, World Bank Development Indicators, OECD SME Finance Scoreboard (2023), Ministry of MSME annual reports, and economic think-tank publications. References also include works from economists and authors like Amartya Sen ("Development as Freedom"), Kaushik Basu ("Policymaker's Journal"), and Raghuram Rajan ("The Third Pillar").

## 1.3 Analytical Tools

Trend analysis on MSME output, credit access, and employment

1. Comparative regional study of MSME/startup clusters
2. Case analysis of sustainable enterprises (Ecozen, ReNew Power)
3. Policy mapping on green industrial growth and innovation
4. Descriptive statistics for sectoral growth
5. Trend analysis (CAGR of MSMEs, contribution to GDP)
6. SWOT analysis of India's innovation ecosystem
7. Comparative benchmarking with countries like China and Vietnam

## 2. Innovation and Sustainability as Drivers of Industrial Growth

The Indian industrial sector contributes nearly 25% to the GDP and provides employment to over 100 million people. However, rapid industrialization also brings environmental degradation, resource depletion, and social disparities. India's growth over the years has often hurt the environment, but things are changing. Green technologies and policies are now the foundation of development strategies. The National Green Hydrogen Mission, state-level plans for solar energy, and the larger ESG movement are all pushing for change. Ecozen and other startups have made solar-powered cold storage available to farmers, and ReNew Power has led the way in using renewable energy on a large scale. These companies show how new ideas can help both the economy and the environment at the same time. India's National Manufacturing Policy (2011) aimed to increase the share of manufacturing in GDP to 25% by 2025 and create 100 million jobs. However, current manufacturing share remains around 17.7% (2023). Ludhiana (textiles) and Coimbatore (machinery) are two examples of traditional industrial clusters that are moving toward practices that use less energy and recycle more resources. The MSME Ministry supports this change with programs like ZED (Zero Effect, Zero Defect) certification and lean manufacturing training. India's goal of reaching 500 GW of renewable energy capacity by 2030 fits with these local efforts, connecting macro industries with the micro industries to gain sustainable development.

### India's push for sustainable industrialization involves:

1. Adoption of clean energy (solar, wind, biomass)
2. Green infrastructure and eco-parks
3. Extended Producer Responsibility (EPR) in industries
4. Promotion of circular economy practices

One notable example is Tata Steel, which became the first Indian company to be recognized for reducing carbon emissions under the Science Based Targets initiative.

## 3. Role of MSMEs and Startups in Inclusive Development

MSMEs are social equity platforms as well as economic entities. In Tier II and III cities, they are essential for lowering unemployment and encouraging entrepreneurship. Accessibility and formalization have been introduced by programs like the Digital MSME portal and UDYAM registration. Nonetheless, metro areas continue to account for more than 60% of startup

funding. India's 63 million MSMEs contribute to over 30% of GDP and 48% of exports. They are the backbone of India's industrial landscape, especially in textiles, food processing, electronics, handicrafts, and pharmaceuticals.

**MSMEs enable inclusive growth by:**

1. Generating rural employment
2. Enhancing women and SC/ST entrepreneurship
3. Boosting local manufacturing

Serving as incubators for innovation and startups. But Lack of collateral, digital illiteracy, and a lack of mentorship are some of the obstacles that marginalized entrepreneurs—particularly women and SC/ST groups—face when trying to get started. Although there are still implementation gaps, programs like Stand-Up India and initiatives for Women-Led Enterprises seek to buck these trends. Startups in the fintech (Razorpay), health-tech (Niramai), and agri-tech (DeHaat) sectors are addressing social issues and generating employment at the same time. By facilitating market access, the Open Network for Digital Commerce (ONDC) is anticipated to level the playing field for MSMEs.

**4. Challenges and the Way Forward**

Despite successes, structural and institutional barriers remain. India spends just 0.7% of GDP on R&D, far below countries like China or South Korea. Startups face inconsistent regulatory frameworks, while MSMEs encounter bureaucratic hurdles in taxation, licensing, and compliance.

Further, green transformation requires a climate-finance architecture that supports small enterprises—something not fully realized yet. Many MSMEs lack access to renewable energy or ESG frameworks.

**Some of the issues are:**

Access to formal finance

1. Limited technology adoption
2. Regulatory compliance burdens
3. Lack of skilled workforce
4. Policy Support for MSMEs:
5. Udyam Registration simplified compliance
6. Emergency Credit Line Guarantee Scheme (ECLGS) post-COVID supported over 1.2 crore MSMEs
7. PMEGP, MUDRA loans, and Startup India Seed Fund
8. Digital initiatives like TReDS and GeM portal
9. Innovations and Startups

**To address these issues, the following pathways are recommended:**

1. Expand access to innovation financing (green bonds, venture debt)
2. Embed entrepreneurship in higher education curricula and vocational training
3. Simplify GST, environmental clearances, and licensing for MSMEs
4. Improve access to infrastructure in rural/tribal regions
5. Strengthen public-private partnerships for inclusive skilling
6. Policy Support for MSMEs:
7. Udyam Registration simplified compliance
8. Emergency Credit Line Guarantee Scheme (ECLGS) post-COVID supported over 1.2 crore MSMEs

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India is now the 3<sup>rd</sup> largest startup ecosystem globally with over 1,12,000 startups and 130+ unicorns as of 2025. Sectors like fintech (Razorpay), healthtech (PharmEasy), agritech (DeHaat), and clean energy (ReNew Power) show how innovation is reshaping industrial models. India's digital economy—bolstered by Aadhaar, UPI, and JAM trinity—can serve as a base to widen participation. More inclusive policymaking, powered by real-time data, is essential to ensure that transformation is democratic and sustainable.

## 5. Conclusion

India's economic transformation is no longer about urban industrial hubs alone. It's about green startups in rural areas, textile MSMEs going digital, and women entrepreneurs leveraging mobile finance. The convergence of technology, sustainability, and grassroots innovation signals a profound shift.

Startups and MSMEs are not just growth drivers—they are the custodians of resilience, creativity, and equity. Startup India, Digital India, and Atmanirbhar Bharat initiatives foster an environment where innovation fuels both economic growth and job creation. But to unlock their full potential, India must bridge credit, digital, and regulatory gaps. Empowering them means empowering India's future—economically, socially, and environmentally.

By combining bold policy with inclusive execution, India can not only compete globally but lead by example in building an innovation-powered and self-reliant (Aatmanirbhar) economy.

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