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Circular Economy Models in Indian MSMEs: Case Studies and Policy Implications

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Abstract
Micro, Small and Medium-Sized Businesses in India are very important for the country's economy because they contribute a lot to the GDP and provide employment. The circular economy model gives Micro, Medium-Sized Businesses a plan to reduce waste use resources more efficiently and become more competitive as the demand for sustainability increases globally. This study looks at how Micro, Small and Medium-Sized Businesses are adopting the circular economy model in five main industries: textiles, food processing, electronics, automotive and construction. The study uses data, policy analysis and case studies to find out how well the circular economy model is working in these industries. The results show that different industries are adopting the circular economy model at rates. For example Micro, Medium-Sized Businesses in the textile and automotive industries are adopting the circular economy model more quickly because of their relationships with big companies and the need to meet sustainability standards for export. The study also looks at case studies from Gujarat, Tamil Nadu and Maharashtra. These case studies show that effective circular economy techniques include composting waste refurbishing electronic waste and recycling textiles. These programs have benefits, including reducing costs creating jobs and reducing the negative impact on the environment. However Micro, Small and Medium-Sized Businesses still face challenges, such as a lack of money, technical expertise and clear regulations. Even though there is awareness about sustainability, the current laws and regulations such as the National Resource Efficiency law and ZED certification do not specifically support the circular economy model. This study suggests that Micro, Small and Medium-Sized Businesses should include circular economy modules in their training programs. It also recommends sector- incentives and circular economy certification programs. This research provides insights for teachers, entrepreneurs and policymakers by highlighting the importance of working together and suggesting a roadmap, for adopting the circular economy model. It shows how the circular economy model can help create an resource-efficient Micro, Small and Medium-Sized Businesses ecosystem that supports Indias sustainable development goals.

Keywords: *Circular Economy (CE), Sustainability, Sectoral Adoption, Policy Frameworks, Resource Efficiency*

Introduction

Small and medium-sized enterprises (SMEs), the backbone of India's industrial ecosystem, are essential for regional development, employment and Innovation. They contribute around 30 % of India's GDP and 45 % of exports. Over 65 million companies compete in various sectors such as electronics, construction, textiles and food processing. However, these companies are under increasing external pressure to reduce their environmental impact and align with global sustainability goals. In this context, the concept of circular economy is gaining importance. This approach-efficient resource use, waste minimization and recycling-friendly product design-is the key to new pathways for sustainable growth of SMEs. It means a shift from the traditional linear "take, make,

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throw away" model to a System of continuous resource circulation through reuse, Recycling and reprocessing For Indian SMEs, this transition to a circular economy is not only about protecting the environment. It is about strengthening business resilience, reducing costs and tapping the fast-growing market for green technologies-in short, creating a "smart survival strategy".

This study draws on policy analysis, industry case studies and existing data to show how Indian small and medium-sized enterprises (SMEs) are actually implementing the principles of circular economy. Using successful models in key sectors, the enabling, inhibiting and enabling factors for adopting circular economy are analyzed in detail. The aim is to enable SMEs to make a smooth transition to a circular economy. By analyzing the impact of policy measures and identifying concrete recommendations for action, this study contributes to Putting India's sustainability plan at the top of the Agenda

Objectives of the Study

- To examine the scope and character of Indian MSMEs' adoption of the circular economy (CE) in crucial sectors.
- To determine the sector-specific challenges and drivers impacting the application of CE models.
- To look at successful case studies that show how to incorporate CE practically into MSME operations.
- To assess current policy frameworks and make practical suggestions for expanding CE practices within the MSME sector.

Literature Review

1. **Transforming sustainability of Indian small and medium-sized enterprises through circular economy adoption** ***Published in Journal of Business Research.*** The Circular Economy in manufacturing small businesses is looked at in this study. It uses twelve examples to show how the Circular Economy is being used. The study talks about the things that can happen when the government and consumers support the Circular Economy. The Circular Economy is when businesses reuse and recycle things to help the earth.. It also talks about the big problems that these small businesses face. They do not have the skills and they are not very good with technology and connecting with other businesses. To make things better the study suggests following six rules for the Circular Economy. This will help these small businesses use resources in a way and be more sustainable. The Circular Economy is very important, for manufacturing small businesses.
2. **Developing a circular economy: An examination of SME's role in India** ***Published in Journal of Business Research.*** This study with a focus on recycling and reuse explores informal and unorganized adoption of Circular Economy (CE) practices among Indian SMEs. It highlights the social, technological, and environmental elements affecting CE transition using socio-technical systems (STS) theory and observations from four case studies. In order to promote continuous integration, the article identifies important enablers for managers and policymakers.
3. **Drivers of circular economy for small and medium enterprises: Case study on the Indian state of Tamil Nadu.** ***Published in Journal of Business Research.*** This study explores Circular Economy (CE) adoption among SMEs in Tamil Nadu using Total Interpretive Structural Modelling (TISM). It outlines ten major CE factors and their relationships based on research and expert observations. Key enablers

include resource consumption, growing populations, and financial availability. In order to understand the changing trends of CE adoption in regional SME ecosystems, the article provides a contextual framework.

Research Methodology

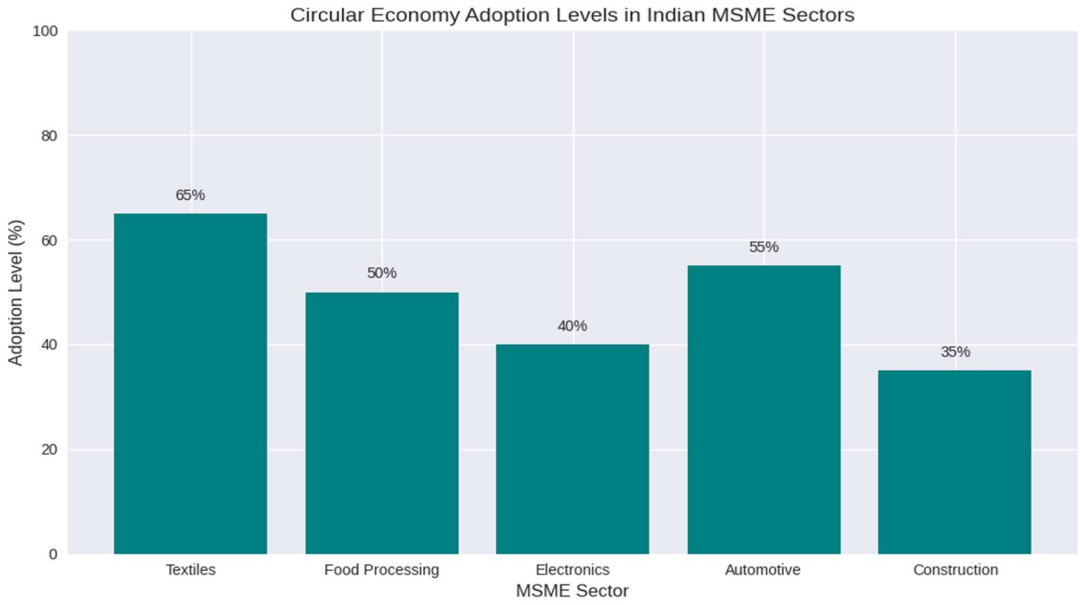
This study uses secondary data analysis as a qualitative method to explore (CE) adoption in Indian MSMEs. They draw from government reports, academic journals, NGO publications and documented case studies in five key sectors - Textiles, Food Processing, Electronics, Automotive and Construction. CE practice, barriers, and policy gaps were determined by content analysis. Charts and tables were also used as visual devices for comparing adoption by sector. Secondary data provides wide scope and coverage, but limitations are varied CE metrics between studies and no real-time information. The approach provides a practical comprehension of CE integration and MSMEs policy implications.

Sectorial Analysis of Circular Economy Adoption in Indian MSMEs

Circular economy (CE) initiatives of small and medium-sized enterprises (SMEs) in India vary widely across sectors. Reasons for this include resource availability, market conditions and regulatory hurdles. The textile industry is one of the sectors in which CE adoption is already well advanced. For example, SMEs in Tamil Nadu and Gujarat are already practicing water recycling, textile Upcycling and the use of natural dyes. This development is being driven by sustainability standards demanded by export markets and collaboration with NGOs. in the food processing sector of Maharashtra, an increasing number of SMEs are converting organic waste into compost and bio-fertiliser, indicating a partial uptake of CE.

The electronics industry has achieved progress in CE thanks to the Electronic Waste Act and a strong repair culture SMEs in Maharashtra have been highly rated especially for their modularisation technologies and reprocessing efforts However, challenges continue to exist in supply chain management and ensuring safe recycling in the automotive industry, especially in Pune, circular economy is advancing in areas such as recycled materials, battery recycling and parts reprocessing Green procurement guidelines and collaboration with major OEMs are providing tailwind here for SMEs also in the construction industry, especially in Delhi Capital Region (NCR), the transition to circular economy is progressing incrementally, for example through the use of fly ash bricks, recycled aggregates, prefabricated construction methods and modular construction, but lack of awareness and too much fragmentation of workflows make it difficult to scale [Spreading circular economy among Indian SMEs

Sector	Adoption Level (%)	Source References
Textiles	65%	CII Green Manufacturing Survey (2023), SEED India Reports
Automotive	55%	TERI-UNIDO CE Pilot Reports (2022–2024), NITI Aayog CE Strategy
Food Processing	50%	Ministry of MSME Sustainability Reports, SEED India Case Studies
Electronics	40%	Tamil Nadu E-Waste Policy Briefs, UNIDO India Circular MSME Reports
Construction	35%	National Resource Efficiency Policy (Draft), CII Circular Construction Notes



Case Studies of Circular Economy Adoption in Indian MSMEs

Circular economy (CE) adoption in Indian MSMEs is gaining momentum through localized innovations, sector-specific adaptations, and collaborative partnerships. The following case studies illustrate how small enterprises are integrating CE principles into their operations across textiles, electronics, and food processing.

1. Upcycled Textiles in Gujarat

The textile MSME cluster in Surat is the first to transform post-production waste into reusable bags, home décor, and fashion accessories. These businesses train employees in cutting, stitching, and dying procedures using natural colors in collaboration with non-governmental organizations and design schools. The initiative has resulted in a 30% reduction in textile waste and the creation of new revenue streams from eco-conscious customers. Additionally, the cluster incorporates water recycling technologies, which reduces freshwater use by 40%. This approach serves as an example of how CE can enhance traditional industries' economic and environmental results.

2. E-Waste Refurbishing in Tamil Nadu

Through the collecting and refurbishment of e-waste, a group of electronics MSMEs in Coimbatore have adopted CE. The organizations look for abandoned computers, smartphones, and accessories in cities to fix and resale for a discount. These MSMEs have reduced landfill contributions and created jobs for young people thanks to the government's digital skilling programs and the Tamil Nadu e-waste legislation. Modular design features, such as standardization and simplicity of disassembly, have also improved product lifetime. The program example shows how CE may be connected to job creation and digital inclusion.

3. Composting in Maharashtra's Food Processing Units

In Nasik, agricultural businesses and MSMEs engaged in food processing have teamed up to turn organic waste into compost and bio-fertilizers. Peels, pulp, and packaging waste are separated and converted into a cost-effective composting machine. In order to close the nutrients cycle and save money on garbage dumps, farmers in the irrigation area from all over the village purchase compost for their farms. Additionally, some of the units have shifted to solar drying techniques and reusable packaging. This wheel approach has increased community involvement and reduced operating costs by 25%.

The variety of CE applications in Indian MSMEs is shown by these case studies. Stakeholder cooperation, policy support, and grassroots innovation are common success elements, despite the fact that every industry faces different obstacles. Targeted incentives, technical training, and knowledge-sharing platforms are necessary for scaling such solutions.

Policy Implications

Indian small and medium-sized enterprises (SMEs) are creating opportunities to strategically link industrial growth with environmental sustainability through the application of circular economy models. However, targeted policy mechanisms to promote circular economy at the local level continue to be lacking. While national resource efficiency policies and schemes such as zero-defect/zero-impact certification provide comprehensive sustainability standards, there is no concrete incentive for circular initiatives such as reverse logistics, Recycling and reprocessing. To accelerate the adoption of circular economy, policymakers need sector-specific subsidies, provide tax incentives and low-interest green finance for SMEs. The creation of certification schemes would standardize procedures and increase customer confidence.

In addition, the Integration of circular economy modules into SME training and entrepreneurship promotion programs would deepen understanding and improve technical skills. Active public-private partnerships are needed to build a common infrastructure for digital identification, material recovery and waste collection. States can play a crucial role by creating circular economy innovation centers and connecting SMEs with universities. To promote research and development, especially, the clear Definition of measurement methods and Compliance Standards for the circular economy is essential for consistency and scalability. By firmly integrating the circular economy into the overall policy for small and medium-sized enterprises (SMEs), India can promote resource-conscious and sustainable enterprises that significantly advance both economic and environmental goals.

Conclusion

The transition to a circular economy represents a ground-breaking opportunity for Indian SMEs to reconcile sustainability and growth. Although implementation is still in its infancy, this study showed that several SMEs in industries such as textiles, electronics and food processing have already introduced innovative circular methods such as Recycling, Regeneration and composting. These efforts not only reduce environmental impact, but also increase work efficiency and improve competitiveness. However, the path to a circular economy is also challenging. SMEs often encounter obstacles such as supply chain disruptions, limited access to finance and lack

of technical expertise. In addition, the lack of specific rules and uniform evaluation criteria for the circular economy hinders business expansion and long-term planning.

A comprehensive approach is needed to exploit the potential of the circular economy in the SME sector. Specifically, this includes comprehensive government capacity-building programs, financial incentives and increased cooperation between industry and universities. The establishment of innovation centers and certification programs would further accelerate adoption and strengthen investor and customer confidence. In short: The circular economy model offers a necessary and realistic path for Indian SMEs to succeed in a resource-constrained future. By successfully integrating circular thinking into business practices and regulatory frameworks, India can create a strong, inclusive and sustainable industrial landscape that is economically and environmentally beneficial in every way.

References

Nudurupati, S., Budhwar, P., Pappu, R., Chowdhury, S., Kondala, M., Chakraborty, A., & Ghosh, S. (2022). Transforming sustainability of Indian small and medium-sized enterprises through circular economy adoption. Journal of Business Research. https://doi.org/10.1016/j.jbusres.2022.05.036.

Sohal, A., Nand, A., Goyal, P., & Bhattacharya, A. (2022). Developing a circular economy: An examination of SME's role in India. Journal of Business Research. https://doi.org/10.1016/j.jbusres.2021.12.072.

Mathivathanan, D., Mathiyazhagan, K., Khorana, S., Rana, N., & Arora, B. (2022). Drivers of circular economy for small and medium enterprises: Case study on the Indian state of Tamil Nadu. Journal of Business Research. https://doi.org/10.1016/j.jbusres.2022.06.007.

*Fostering the Circular Economy: Role of MSMEs*https://seed.uno/system/files/2024-05/Fostering-the Circular-EconomyRole-of-MSMEsPLPP-India2021.pdf

*Ministry of MSME – Initiatives and Schemes*https://msme.gov.in/initiatives-msme

*MoMSME RAMP Portal – SPICE Scheme*https://ramp.msme.gov.in/ramp/

*NITI Aayog – Strategy on Resource Efficiency (2021)*https://www.niti.gov.in/sites/default/files/2021-10/Strategy_for_Promoting_Resource_Efficiency_in_India.pdf

*TERI – Circular Economy Reports*https://www.teriin.org/projects/circular-economy

CII – Green Manufacturing and CE Adoption Survey (2023)