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## Research Paper

## Impact of Digitalization on MSMEs in India: Opportunities, Productivity and Employment

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ABSTRACT	Manuscript Info.
<p>Digitalization has become a game-changer for MSMEs in India, driving significant transformation, revolutionizing their productivity, creating new economic opportunities, and reshaping employment dynamics. With the integration of advanced digital technologies such as Digital payment Systems, cloud computing, and Artificial Intelligence, MSMEs can significantly enhance operational efficiency, reduce costs, and optimize resource management. These tools enable MSMEs to streamline processes, drive innovation, and improve overall productivity. The digital transformation opens doors to diverse economic opportunities. However, challenges persist, including poor infrastructure, high adoption costs, and a lack of digital literacy. Additionally, the shift towards automation and digitalization brings both job displacement concerns and the creation Tech-driven roles generating employment opportunities. This research explores the economic consequences of digitalization, providing insights and strategies for MSME owners, policymakers, and stakeholders to leverage digital technologies for sustainable growth and India's economic progress.</p>	<p>✓ ISSN No: 2584-184X            ✓ Received: 11-08-2024            ✓ Accepted: 12-09-2024            ✓ Published: 30-09-2024            ✓ MRR:2(9):2024;29-34            ✓ ©2024, All Rights Reserved.            ✓ Peer Review Process: Yes            ✓ Plagiarism Checked: Yes</p>
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**KEYWORDS:** Digitalization, Artificial Intelligence, Operational Efficiency, Tech driven roles and Cloud Computing.

### 1. INTRODUCTION

Digitalization is transforming the MSME sector in India, driving economic growth, fostering innovation, and enhancing competitiveness. With the increasing adoption of Artificial Intelligence (AI), cloud computing, and digital payment systems, MSMEs are witnessing enhanced operational efficiency, cost reduction, and market expansion. These technological advancements enable businesses to optimize resource management, improve productivity, and develop new business models that cater to a rapidly evolving digital economy. Despite these opportunities, MSMEs face several challenges in embracing digitalization, including infrastructure limitations, high costs, and a lack of digital literacy. Moreover, automation and digital transformation

raise concerns regarding job displacement, even as they create new employment opportunities in technology-driven sectors. Government initiatives and policy interventions serve as a key factor in bridging the gaps and facilitating digital adoption among MSMEs. This study explores the economic implications of digitalization on MSMEs, assessing its impact on growth, productivity, and employment. By identifying key opportunities and challenges, the research aims to provide strategic insights for MSME owners, policymakers, and stakeholders to ensure inclusive and sustainable digital transformation in India's MSME sector.

## 2. OBJECTIVES

- 2.1 Assess the Impact of Digitalization on the Growth of MSMEs in India.
- 2.2 Identify Opportunities created by digital tools for MSMEs.
- 2.3 Evaluate Productivity and Employment Improvements driven by digital adoption.
- 2.4 Highlight barriers to digital adoption in MSMEs.

## 3. Limitations of the Study

- 3.1 Limited access to updated data on MSME digital adoption.
- 3.2 Variations in impact across different industries.
- 3.3 Rapid technological advancements may outdate findings.
- 3.4 Differences in digital adoption between urban and rural MSMEs.

## 4. METHODOLOGY

This study uses secondary data from government reports, industry surveys, and research papers, along with a review of 15 scholarly articles to assess digitalization's impact on MSMEs. A qualitative approach is used to interpret findings on productivity, employment, and economic growth while considering sectoral variations and data limitations.

## 5. MSME Landscape in India

MSMEs in India play a vital role in generating extensive employment with less investment. In order to promote equal distribution of Wealth and National income, they promote industrialization in underdeveloped regions to reduce regional disparities.

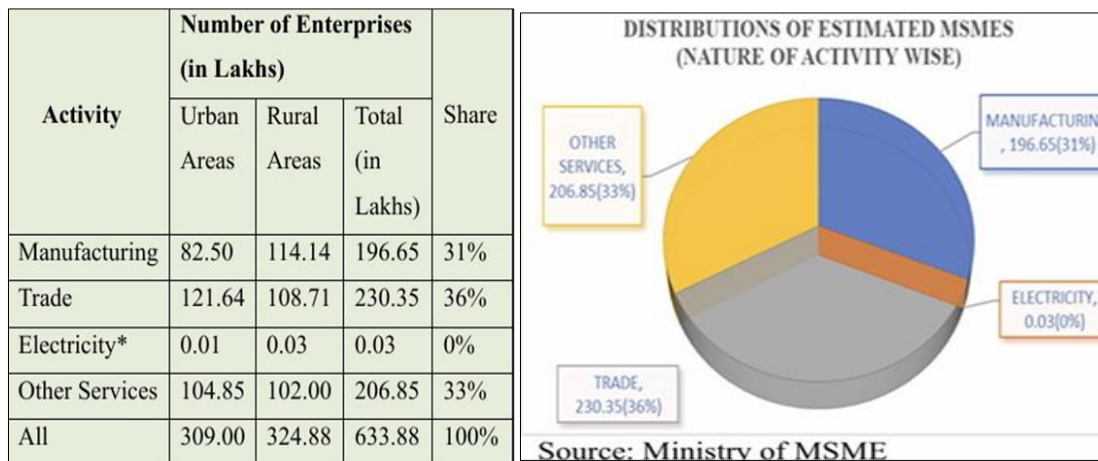


Fig 1: Distinctions of Estimated MSMEs (Nature of Activity Wise)

\*Independent electricity generation and transmission by units not regulated by the Central Electricity Authority (CEA).

The table presents the distribution of MSMEs across various sectors in rural and urban areas.

Trade (36%) accounts for the highest share of MSMEs, followed by Manufacturing (31%) and Other Services (33%). The Electricity sector (0%) has a minimal presence. Rural

areas have a larger share in Manufacturing (114.14 lakh), while urban areas dominate in Trade (121.64 lakh) and Other Services (104.85 lakh). Overall, MSMEs are nearly evenly distributed between rural (324.88 lakh) and urban (309 lakh) regions, highlighting their role in balanced economic growth.

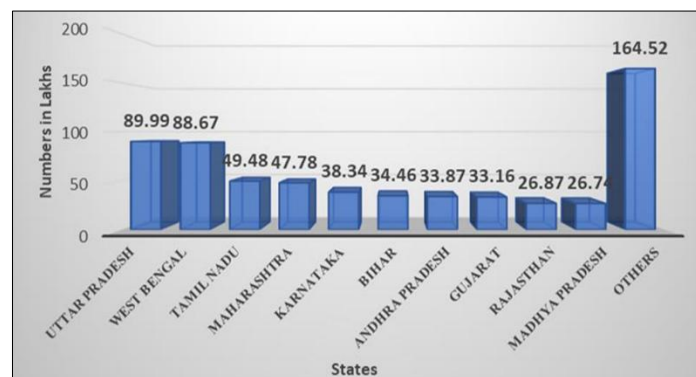


Fig 2: Number of estimated MSMEs (Source: Ministry of MSME)

6. State-Wise MSME Distribution

The bar chart illustrates the distribution of estimated MSMEs across different states in India. Uttar Pradesh and West Bengal lead with the highest number of MSMEs, at 89.99 lakh and 88.67 lakh, respectively. Tamil Nadu and Maharashtra follow with 49.48 lakh and 47.78 lakh, respectively. The "Others" category, comprising smaller states and Union Territories, accounts for 164.52 lakh MSMEs. This distribution underscores the prominent presence of MSMEs in industrially developed and economically active regions of the country.

7. The Impact of Digitalization on MSME Growth in India

Digitalization has become a catalyst for the growth of MSMEs by enhancing productivity, creating new economic opportunities, and reshaping employment dynamics. Technologies like AI, cloud computing, and digital payment

systems allow MSMEs to improve operational efficiency, reduce costs, and reach broader markets. Digitalization has significantly boosted MSME growth by enhancing productivity, expanding market access, and reshaping employment. Over 1 lakh MSMEs have expanded through e-commerce, generating ₹1,500+ crore in sales, while digital payments have led to a 30% revenue increase by improving transaction efficiency. Automation and AI have reduced operational costs by 20-25% and improved delivery by 15%, while IT and digital marketing roles grew by 10-15%, supporting MSME digital transformation. Cloud adoption has improved resource management by 15-20%, reducing logistics costs, and financial inclusion initiatives like MUDRA and PMGDISHA have helped over 10 million MSMEs gain digital skills and funding access. Overall, digital tools continue to drive MSME competitiveness, efficiency, and growth in India's economy.

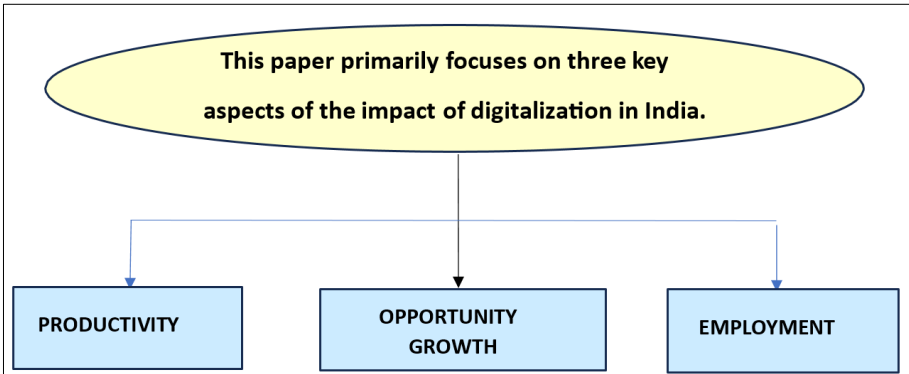


Fig 3: Employment growth across key sectors (Source: Ministry of MSME reports)

It examines how digital technologies have enhanced productivity within MSMEs, created new employment

opportunities, and opened up diverse avenues for growth, enabling businesses to thrive in a digitally-driven economy.

Table 1: Opportunities Created by Digital Tools for MSMEs

Opportunities	Digital tools	Benefits Of MSMEs
8.1. Market expansion	E-commerce Platforms (Amazon, Flipkart, Shopify, GeM)	Wider customer reach, online storefronts, logistics support
8.2. Cost reduction	Cloud Computing & SaaS (AWS, Google Cloud, Zoho)	Lower IT costs, flexible pricing, scalable infrastructure.
8.3. Innovation	AI & IoT Tools (Chatbots - Drift, Tidio; Smart Manufacturing - Siemens MindSphere, PTC ThingWorx)	Process automation, realtime monitoring, customer insights.
8.4. Access to finance	Fintech Solutions (UPI, Account Aggregator, Digilocker, Paytm, Razorpay)	Easier digital payments, quick access to loans, alternative credit scoring.
8.5. Data-Driven Decisions	Analytics & CRM (Google Analytics, Power BI, Zoho CRM, Salesforce)	Easier digital payments, quick access to loans, alternative credit scoring.

8. Evaluation of Productivity Improvements Driven by Digital Adoption – Contribution to GDP

Digital adoption has significantly improved productivity by streamlining operations, reducing costs, and enhancing

efficiency. This data reflects the contribution of to India's GDP over the years, indicating a generally stable but slightly fluctuating trend in their impact.

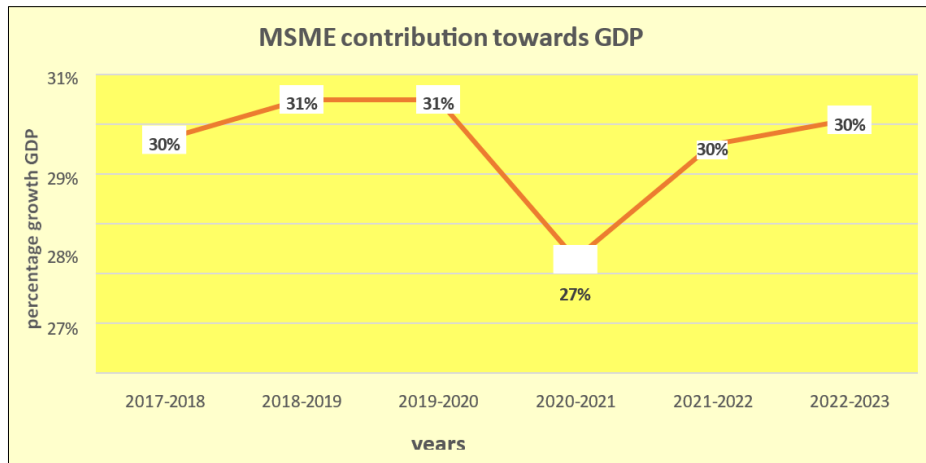


Fig 4: MSME Contribution towards GDP (Source: Ministry of MSME)

The data shows the contribution of MSMEs to India's GDP over the years, with a stable range of 27-31% from 2017 to 2023. The dip in 2020-2021 (27%) likely reflects the impact of the COVID-19 pandemic, while the recovery to 30% in 2021-2023 indicates a rebound, supported by digitalization and government schemes aimed at improving MSME efficiency and access to resources.

Automation and cloud computing have significantly improved operational efficiency for MSMEs by reducing manual processes and cutting operational costs by 20-25%, while AI-driven tools optimize workflows, enhancing delivery timelines by 15%. Cost reduction and resource optimization have also improved, with cloud-based systems increasing resource management efficiency by 15-20%, and digital payment adoption minimizing cash-handling inefficiencies, leading to faster transactions and better cash flow. Workforce productivity has seen a boost through digital skills training and AI-powered tools, reducing errors and increasing output, while

businesses using CRM and analytics platforms like Salesforce and Zoho have optimized sales strategies, driving revenue growth. Additionally, market expansion and sales growth have been propelled by e-commerce integration, enabling over 100,000 MSMEs to expand online and generate over ₹1,500 crore in additional revenue, with digital marketing and social media tools further increasing customer reach, engagement, and conversions.

### 9. Impact of Digitalization on Employment in MSMEs in India

The Ministry of MSME has introduced various digital initiatives to foster the growth and transformation of MSMEs in India. These initiatives help businesses adopt technology, enhance workforce skills, expand into e-commerce, improve support services, and integrate automation, driving employment and efficiency in the sector.

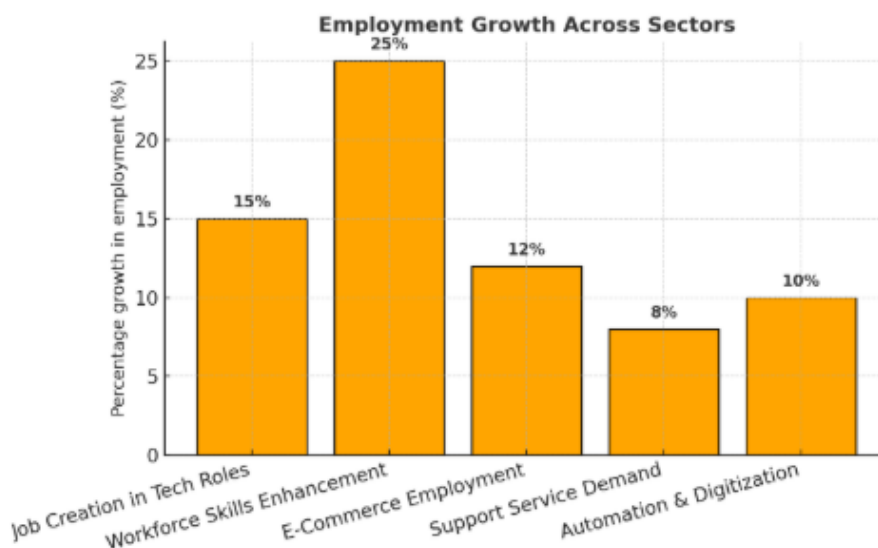


Fig 5: Employment Growth Across Sectors (Source: Ministry of MSME reports)

Financial support for cloud computing and IT tools is provided through the Digital MSME Scheme, encouraging digital adoption and expanding tech roles within MSMEs. Workforce skills development is supported through initiatives like the MSME Champions Portal and Udyam Learning Platform, which offer online training in AI, digital marketing, and other technology skills. E-commerce job opportunities have grown with platforms like GeM (Government e- Marketplace) and MSME Mart, enabling MSMEs to sell online and expand their digital presence.

Additionally, MSME support services have been strengthened through the MSME SAMBANDH Portal, which connects MSMEs with large buyers, and MSME Samadhan, an online platform for resolving payment disputes. Furthermore, automation and smart manufacturing are being promoted through the ZED Certification Scheme and LEAN Manufacturing Scheme, fostering IoT adoption and enhancing efficiency in MSMEs.

## 10. Challenges Hindering Digital Transformation in MSMEs

MSMEs face several challenges in adopting digitalization, with high initial costs being a major barrier, as implementing digital tools, technologies, and infrastructure can be prohibitive, especially for businesses with limited access to capital. Additionally, a lack of technological proficiency among MSME owners and their workforce hinders the effective adoption and utilization of digital tools, preventing businesses from fully leveraging digital transformation. Inadequate infrastructure, particularly poor internet connectivity in few areas and less access to reliable technology, further restricts digital adoption. Resistance to change is another challenge, as many MSMEs are accustomed to traditional business models and may hesitate to embrace digitalization due to fear of the unknown or perceived complexity.

Cybersecurity concerns, including the risk of data breaches and cyberattacks, deter MSMEs from adopting digital tools, especially those lacking proper security measures. Limited access to financing also makes it hard for them to invest in digital technologies, as banks view them as high risk. Moreover, fragmented market conditions and complex regulatory frameworks further hinder the smooth adoption of digital transformation, slowing progress.

## 11. CONCLUSION

The digitalization of MSMEs in India has brought significant improvements in productivity, efficiency, and market expansion, enabling businesses to compete in a rapidly evolving digital economy. Technologies such as AI, cloud computing, e-commerce platforms, and digital payment systems have optimized business operations, reduced costs, and improved financial inclusion. Digital adoption has also created new employment opportunities, particularly in tech-driven roles, while enhancing customer engagement and innovation. However, despite these advancements, MSMEs

continue to face setbacks like large investment outlay, inadequate technological competence, weak infrastructure, regulatory complexities, and cybersecurity concerns. Many small enterprises, especially in rural areas, find it difficult to access reliable internet services and digital tools, limiting their capacity to perform effectively. Furthermore, the fear of job displacement due to automation and resistance to change among traditional MSME owners hinder the pace of digital transformation. To ensure inclusive and sustainable growth, it is crucial to address these barriers and create an enabling environment that supports the seamless integration of digital technologies into the MSME ecosystem.

## 12. Suggestions

To accelerate the digital transformation of MSMEs in India, a comprehensive approach is needed, focusing on financial, infrastructural, and policy-driven interventions. Financial support through subsidies, low-interest loans, and grants can ease the burden of digital investment, especially for small businesses. Skill development programs will ensure that MSME owners and workers can effectively use digital tools, improving efficiency and fostering innovation. Strengthening technology infrastructure, particularly in rural areas, and expanding broadband access will ensure equitable digital access. Simplified regulatory frameworks, along with cybersecurity awareness programs, will facilitate smoother digital adoption. Finally, collaboration between the government, private sector, and industry stakeholders is crucial for creating policies and incentives to drive digital growth in the MSME sector, contributing to economic resilience and sustainable development.

To support the digital transformation of MSMEs, the Union Budget 2025-2026 highlights their critical role in India's manufacturing and services sectors. With over 1 crore registered MSMEs contributing to 36% of manufacturing and 45% of exports, the budget proposes enhancing investment and turnover limits to foster growth. This will aid MSMEs in upgrading technology and accessing capital. Additionally, expanding credit guarantees and setting up a new Fund of Funds, along with a dedicated scheme for 5 lakh women entrepreneurs from SC/ST communities, aligns with the broader goal of strengthening MSMEs through financial, infrastructural, and policy-driven interventions for sustainable growth.

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