
EMPOWERING MSMEs THROUGH TECHNOLOGY: THE 'TECH-SAKSHAM' INITIATIVE FOR DIGITAL TRANSFORMATION

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Micro, Small, and Medium Enterprises (MSMEs) are the backbone of the Indian economy, contributing significantly to employment, GDP, and exports. However, the digital divide has kept many MSMEs from achieving their full potential. The 'Tech-Saksham' initiative aims to bridge this gap by equipping MSMEs with digital skills and tools to foster innovation, competitiveness, and sustainability. This research paper explores the impact of the Tech-Saksham initiative on MSMEs, analyzing both primary and secondary data. The study highlights how technology integration is reshaping MSMEs' operational capabilities and offers suggestions to enhance digital empowerment across sectors.

Keywords: MSMEs, Digital Transformation, Tech-Saksham, Technology Adoption, Empowerment, Innovation, India

1. INTRODUCTION

Micro, Small, and Medium Enterprises (MSMEs) form the cornerstone of the Indian economy. They contribute approximately 30% to India's GDP and account for nearly 45% of the country's total exports. With over 63 million units operating across various sectors, MSMEs generate employment for more than 110 million people, especially in rural and semi-urban areas. Despite their immense potential, MSMEs continue to face significant challenges—ranging from lack of access to capital, outdated technology, skill shortages, limited market access, and bureaucratic hurdles. Among these, the technological divide is perhaps the most pressing in the digital era.

In an increasingly globalized and digitally driven marketplace, the ability to adapt to technology is not just a competitive advantage but a necessity for survival. Technology plays a crucial role in enhancing productivity, improving quality, expanding customer reach, enabling innovation, and optimizing cost structures. However, many Indian MSMEs continue to rely on traditional practices, which limit their ability to grow and compete with larger and more tech-savvy counterparts. The digital transformation of MSMEs is no longer a luxury; it is an imperative.

To bridge this gap, several government and private sector initiatives have been launched, aiming to support MSMEs in embracing technology. Among these, the 'Tech-Saksham' initiative stands out as a structured, scalable, and inclusive approach towards digitally empowering MSMEs. Launched as a joint initiative by the Ministry of Electronics and Information Technology and leading technology corporations, Tech-Saksham aims to empower MSMEs by offering skill development, mentoring, and access to digital tools and solutions. The initiative is tailored to suit the diverse needs of MSMEs from different sectors and geographies, especially targeting women-led and rural enterprises.

The uniqueness of Tech-Saksham lies in its multidimensional strategy. It combines training, on-ground workshops, digital literacy, sector-specific technology solutions, and a mentorship network. The initiative not only aims to create awareness but also ensures the actual implementation of digital practices in MSME operations, such as digital accounting, e-commerce integration, cloud computing, customer relationship management (CRM), and digital marketing.

In the post-pandemic world, where remote operations and online interactions have become the norm, MSMEs that are not technologically enabled risk being left behind. The COVID-19 crisis has exposed the vulnerabilities of the sector but has also accelerated the urgency for digital transformation. It is in this context that studying the impact and effectiveness of the Tech-Saksham initiative becomes both timely and necessary.

This research paper aims to explore how Tech-Saksham is contributing to the digital transformation of MSMEs in India. Through an empirical analysis based on primary and secondary data, the study evaluates the effectiveness of the initiative, identifies challenges in implementation, and provides recommendations to scale its impact. The paper also investigates whether digital empowerment through Tech-Saksham leads to measurable improvements in business outcomes for MSMEs such as increased revenue, market reach, operational efficiency, and resilience.

2. LITERATURE REVIEW

1. **KPMG (2020):** Digital adoption among MSMEs in India is increasing but is constrained by infrastructural and knowledge gaps.
2. **World Bank Report (2018):** Technological integration is essential for MSMEs to scale up and compete globally.
3. **Deloitte India (2021):** Collaborative initiatives between the government and private sector can significantly enhance MSME digital readiness.
4. **RBI Report on MSME (2019):** Digitally empowered MSMEs show higher profitability and better customer engagement.
5. **NASSCOM (2022):** Training and mentoring improve technology assimilation among small enterprises.
6. **Patel & Sharma (2018):** MSMEs with ERP and digital accounting systems show improved compliance and operational efficiency.
7. **Saxena & Agarwal (2020):** Financial literacy combined with tech training results in higher survival rates of startups and MSMEs.
8. **Mehta & Joshi (2019):** Government-led digital initiatives require effective grassroots implementation for impact.
9. **Kumar et al. (2021):** Barriers to digital adoption include lack of awareness, funding issues, and cyber security concerns.
10. **UNDP (2022):** Digital training for women-led MSMEs can double income potential and boost local economies.

3. OBJECTIVES OF THE STUDY

1. To evaluate the role of the 'Tech-Saksham' initiative in digital transformation among MSMEs.
2. To analyze the level of digital adoption in MSMEs before and after participating in the initiative.
3. To assess the challenges and opportunities in implementing digital technologies in MSMEs.
4. To suggest policy recommendations and strategies for better tech adoption.

4. RESEARCH METHODOLOGY

- **Research Design:** The study adopts a descriptive and analytical research design to assess the impact of Tech-Saksham on MSMEs.
 - **Data Collection:**
 - **Primary Data:** Structured questionnaires and interviews with MSME owners who have participated in Tech-Saksham.
 - **Secondary Data:** Government reports, academic journals, industry publications, Tech-Saksham program documents.
 - **Sample:** A purposive sample of 300 MSMEs across Haryana, Maharashtra, and Tamil Nadu—50% from urban and 50% from semi-urban/rural areas.
 - **Hypotheses:**
 - **H₀:** There is no significant improvement in MSME performance after adopting digital technologies under Tech-Saksham.
 - **H₁:** There is a significant improvement in MSME performance after adopting digital technologies under Tech-Saksham.
 - **Statistical Tools:**
 - Descriptive statistics (mean, mode, standard deviation)
 - T-test and Chi-square test for hypothesis testing
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- Regression analysis to study performance factors

5. ANALYSIS AND INTERPRETATION

State	Number of MSMEs
Haryana	99
Maharashtra	94
Tamil Nadu	107
Total	300

Objective 1: To assess the level of technology adoption among MSMEs after the Tech-Saksham initiative

Table 1: Tech Adoption by State

State	Low	Medium	High
Haryana	20	50	29
Maharashtra	21	51	22
Tamil Nadu	29	48	30

Interpretation: Across all states, medium adoption is the most common. Tamil Nadu has a higher number of low adopters, suggesting regional differences in adoption barriers.

Objective 2: To evaluate the change in business performance after adopting digital tools

Table 2: Average Revenue Change by Tech Adoption Level

Tech Adoption Level	Avg. Revenue Change (%)
Low	11.57
Medium	12.37
High	13.64

Interpretation: A positive correlation exists between tech adoption level and revenue change. High-tech adopters experienced the greatest gains.

Table 3: Average Revenue Change by State

State	Avg. Revenue Change (%)
Haryana	12.24
Maharashtra	12.54
Tamil Nadu	12.78

Interpretation: All three states report similar revenue growth, with Tamil Nadu slightly ahead.

Objective 3: To explore the integration of e-commerce and digital marketing practices

Table 4: E-Commerce Usage by State

State	Yes	No
Haryana	63	36
Maharashtra	50	44
Tamil Nadu	71	36

Table 5: Digital Marketing Usage by State

State	Yes	No
Haryana	81	18
Maharashtra	66	28
Tamil Nadu	80	27

Interpretation: Digital marketing is widely used across all states. Tamil Nadu leads in e-commerce integration, reflecting better access or training.

Objective 4: To study the correlation between technology adoption and business expansion

Table 6: Business Expansion by State

State	Yes	No
Haryana	55	44

Maharashtra	60	34
Tamil Nadu	59	48

Interpretation: Around 58% of respondents confirmed business expansion post-tech adoption, validating the transformative role of Tech-Saksham.

Objective 5: To examine MSMEs' satisfaction with Tech-Saksham and its perceived usefulness

Table 7: Average Satisfaction Level (1–5 scale)

State	Avg. Satisfaction Level
Haryana	3.27
Maharashtra	3.18
Tamil Nadu	2.99

Interpretation: Satisfaction levels are moderate, with Haryana reporting slightly better outcomes. More localized customization could improve experience in Tamil Nadu.

Table 8: Chi-Square Test – State vs Tech Adoption Level

Test	Chi ² Value	p-Value	Significance Level	Result
State x Tech Adoption Level	2.70	0.609	0.05	Not Significant

Interpretation: Technology adoption levels are not significantly different among the states of Haryana, Maharashtra, and Tamil Nadu.

Table 9: ANOVA – Revenue Change across Tech Adoption Levels

Test	F-Statistics	p-Value	Significance Level	Result
Revenue Change x Tech Adoption Level	2.63	0.074	0.05	Marginally Not Significant

Interpretation: There is some variation in revenue change across different tech adoption levels, but the result is not statistically significant at 5% level.

Table 10: Pearson Correlation – Revenue Change vs Satisfaction Level

Variables	Correlation Coefficient (r)	p-Value	Significance Level	Result
Revenue Change x Satisfaction Level	-0.133	0.021	0.05	Weak Negative Correlation

Interpretation: A weak but statistically significant negative correlation exists. This indicates that higher revenue change does not necessarily correspond to higher satisfaction with Tech-Saksham.

Table 11: Chi-Square Test – Tech Adoption Level vs Business Expansion

Test	Chi ² Value	p-Value	Significance Level	Result
Tech Adoption x Business Expansion	0.80	0.671	0.05	Not Significant

Interpretation: There is no significant relationship between the level of technology adoption and whether the MSME experienced business expansion.

6. MAIN FINDINGS AND SUGGESTIONS

Main Findings

1. Technology Adoption is uniform but varied in Depth

- **Result:** The Chi-Square test ($p = 0.609$) revealed that MSMEs in Haryana, Maharashtra, and Tamil Nadu have adopted technology at comparable levels.
- **Insight:** Tech-Saksham has successfully ensured geographical outreach, but the depth and type of adoption vary among industries and business sizes.

2. Tech Adoption Positively Influences Revenue—Though Not Strongly

- **Result:** ANOVA results ($F = 2.63$, $p = 0.074$) suggested that higher levels of digital adoption tend to associate with increased revenue, but the relationship lacks strong statistical significance.
- **Insight:** The impact of digital adoption on financial performance is evident but moderated by external factors like market size, competition, and product relevance.

3. Satisfaction Levels Do Not Always Reflect Financial Gains

- **Result:** A weak but statistically significant negative correlation ($r = -0.133$, $p = 0.021$) between revenue growth and satisfaction.
- **Insight:** MSMEs with improved revenues do not necessarily express higher satisfaction, indicating gaps in user experience, support, or expectations from Tech-Saksham.

4. No Significant Link between Tech Adoption and Business Expansion

- **Result:** Chi-Square test ($p = 0.671$) showed no significant relationship between technology adoption and overall business expansion.
- **Insight:** Growth and expansion of MSMEs are influenced by multiple dimensions, including access to finance, market demand, and operational scale, rather than just digital upgrades.

5. Major Challenges Identified by MSMEs

From both primary and secondary data, MSMEs cited:

- Inadequate digital training
- Resistance to change from traditional models
- Lack of skilled manpower
- Poor infrastructure (especially in rural areas)
- Financial limitations to adopt advanced tech

Suggestions

1. **Strengthen Digital Literacy and Handholding Support:** Conduct state- and sector-specific workshops and digital helpdesks to assist MSMEs in implementing and troubleshooting technologies under Tech-Saksham.
2. **Customize Technology Solutions by Sector:** Develop tailored digital tools for specific sectors (e.g., manufacturing, textiles, logistics) to increase usability and relevance for MSMEs.
3. **Foster Tech-Market Linkages:** Align tech adoption with market expansion by integrating e-commerce platforms, CRM systems, and digital marketing tools through Tech-Saksham.
4. **Introduce Incentives for Sustained Adoption:** Provide financial subsidies, tax reliefs, or access to low-cost digital loans to MSMEs showing consistent use and performance improvement via technology.
5. **Build a Feedback-Driven Monitoring System:** Incorporate MSME feedback loops in Tech-Saksham to assess satisfaction levels, address implementation gaps, and refine service delivery continuously.
6. **Facilitate Peer Learning and Networking:** Establish cross-state forums or digital communities under Tech-Saksham for MSMEs to share success stories, challenges, and innovations.
7. **Policy-Level Coordination for Infrastructure Development:** Recommend that Tech-Saksham work with state governments and local bodies to improve digital infrastructure in underserved regions, ensuring equitable access to MSMEs.

7. CONCLUSION

The study titled “Empowering MSMEs through Technology: The ‘Tech-Saksham’ Initiative for Digital Transformation” provides a holistic understanding of how digital adoption is reshaping the Micro, Small, and Medium Enterprises (MSME) sector in India. With primary data collected from 300 MSMEs across Haryana, Maharashtra, and Tamil Nadu, and supported by secondary literature and statistical analysis, this research reveals critical insights into the reach, impact, and challenges of the Tech-Saksham initiative.

The findings clearly indicate that technology adoption under Tech-Saksham has reached MSMEs across the studied states uniformly, indicating successful outreach of the initiative. However, the depth and effectiveness of implementation vary, with multiple businesses still struggling with infrastructural and operational challenges. While some positive impact on revenue and efficiency was observed, the statistical significance of this relationship remains moderate. The disconnect between revenue gains and satisfaction further highlights the need for better user support, training, and post-implementation assistance.

Furthermore, the study found that technology alone does not guarantee business expansion—emphasizing those digital tools must be embedded within a broader business strategy, supported by financial access, market intelligence, and entrepreneurial capacity. Challenges such as resistance to change, skill gaps, inadequate training, and financial constraints emerged as common barriers.

The statistical tools—Chi-Square tests, ANOVA, and Pearson correlation—provided nuanced evidence for interpreting relationships among variables such as revenue growth, satisfaction, business expansion, and tech usage.

In conclusion, while the Tech-Saksham initiative presents a promising platform for driving digital transformation among Indian MSMEs, its success hinges on contextual implementation, continuous feedback mechanisms, and integration with broader capacity-building efforts. With the right combination of policy support, financial assistance, and customized technological solutions, Tech-Saksham can play a pivotal role in empowering MSMEs to become more competitive, resilient, and digitally self-reliant in the evolving global economy.

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