

# TOPIC- The Impact of Digital Financial Inclusion on Small and Medium Enterprises (SMEs) in Rural India

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## ABSTRACT

This study explores the transformative role of digital financial inclusion (DFI) on the growth and sustainability of Small and Medium Enterprises (SMEs) in rural India. In recent years, initiatives such as the Digital India campaign, Jan Dhan Yojana, UPI, and the spread of digital banking/mobile banking has helped to bridge the financial accessibility difference in underprivileged areas. This study examines how access to digital financial services—such as mobile payments, digital banking, and digital credit—has influenced the operational efficiency, market reach, and financial robustness of rural SMEs.

Secondary data-based qualitative analysis technique has been used in the research. The key data sources comprise Ministry of MSME Annual Reports (2016–2024), RBI and NPCI Reports, Global Findex Database of the World Bank; NITI Aayog reports, IFC reports, industry reports. Thematic analysis of data and trend evaluation, helps to assess indicators such as digital payment adoption, credit availability, and SME survival rates post-DFI interventions.

As per the preliminary data digital financial tools and the performance of small and medium sized enterprises (SMEs) shows a positive correlation. This positive association indicates increased formalisation, improved access to working capital, and enhanced participation in ecommerce platforms. Further, the research highlights a number of ongoing problems, such as lack of digital financial literacy, lack of trust in digital financial systems, and infrastructural limitations. The objective of this research is to empower rural SMEs as engines of inclusive economic development by synthesising cross-sectoral insights and providing policy-relevant recommendations to optimise digital financial ecosystems.

**Keyword:** digital financial inclusion, small and medium enterprises, sustainability, digital banking

## 1. INTRODUCTION

Small and Medium Enterprises (SMEs) in rural India constitute a vital component of the nation's economic framework. These enterprises not only generate substantial employment opportunities but also drive regional economic development and contribute significantly to inclusive and sustainable growth. According to the Ministry of Micro, Small and Medium Enterprises (MSME), the sector accounts for nearly 30% of India's GDP and provides livelihoods to over 110 million individuals, many of whom reside in rural and semi-urban areas. In these regions, SMEs often act as the backbone of the local economy, nurturing entrepreneurial talent and fostering grassroots innovation.

Despite their crucial role, rural SMEs face persistent and multifaceted challenges that impede their growth and productivity. Prominent among these are limited access to formal credit facilities, poor infrastructure, lack of digital literacy, and constrained access to larger markets. A particularly significant obstacle is the lack of financial inclusion—many rural enterprises remain outside the formal financial system, either due to geographical inaccessibility, complex banking procedures, or absence of credit history. Traditional banking mechanisms, often urban-centric in design and operation, have struggled to bridge this accessibility gap (Khatri, 2019).

In recent years, however, Digital Financial Inclusion (DFI) has emerged as a powerful equalizing force, transforming the landscape of rural financial services. DFI refers to the use of digital platforms, mobile technologies, and innovative financial instruments to provide affordable and convenient financial services to previously underserved populations. Spearheaded by national-level initiatives such as the Digital India campaign, Pradhan Mantri Jan Dhan Yojana (PMJDY), the Unified Payments Interface (UPI), and the expansion of mobile and internet banking, these efforts aim to create a more inclusive, tech-enabled financial ecosystem (Khuntia, 2014).

By leveraging digital tools, these programs are not only enhancing financial accessibility but are also improving transparency, reducing transaction costs, and fostering greater participation of rural SMEs in the formal economy. As a result, digital financial inclusion is increasingly recognized not merely as a support mechanism but as a strategic enabler of economic empowerment for rural entrepreneurs.

This paper explores the intersection of digital financial inclusion and rural SME development in India, examining the extent to which DFI initiatives have addressed structural barriers and catalyzed growth. Through an analysis of policy interventions, technological adoption, and empirical outcomes, the study aims to assess the transformative potential of DFI in reshaping the rural SME ecosystem.

## 2. LITERATURE REVIEW

### 2.1 Global Trends in Digital Financial Inclusion and its Impact on SMEs

Digital financial inclusion (DFI) has emerged as a transformative force in global financial ecosystems, particularly in fostering the growth of Small and Medium Enterprises (SMEs) in low- and middle-income countries. DFI refers to the delivery of financial

services—such as payments, savings, credit, insurance, and investment—via digital channels including mobile phones, internet banking, and point-of-sale technologies.

In Sub-Saharan Africa, mobile money services such as M-Pesa in Kenya have revolutionized financial accessibility. Jack and Suri (2014) found that M-Pesa lifted an estimated 194,000 households out of poverty by enabling micro-entrepreneurship and enhancing transaction efficiency. Similarly, in Southeast Asia, countries like Indonesia and the Philippines have leveraged digital wallets and branchless banking to support small business operations and extend credit access (Koh et al.,2018). The World Bank (2020) emphasizes that digital financial tools have improved SMEs' liquidity management, reduced operational risks, and expanded market reach through digital payment acceptance and online trade platforms.

Global evidence suggests a consistent pattern: access to digital finance correlates with SME formalization, growth in revenues, and increased employment. However, the effectiveness of DFI is heavily dependent on regulatory support, digital infrastructure, and the financial literacy of users.

## 2.2 India's Digital Financial Inclusion Initiatives

India's efforts toward DFI have been driven by a blend of policy initiatives, infrastructure development, and fintech innovation, making it one of the world's most ambitious digital inclusion projects.

The Digital India campaign, launched in 2015, laid the foundation for digital connectivity and governance. With its focus on "faceless, paperless, and cashless" services, the initiative has enabled deeper penetration of digital tools in rural areas. Complementing this, the Pradhan Mantri Jan Dhan Yojana (PMJDY) has led to the opening of over 500 million bank accounts, the majority in rural and semi-urban areas, thus expanding the financial footprint across socio-economic strata (Bijoy,2017).

A landmark advancement has been the introduction of the Unified Payments Interface (UPI), which facilitates real-time bank-to-bank payments through smartphones. Between 2016 and 2023, UPI usage soared, processing over 8 billion transactions monthly by 2023. Alongside UPI, the development of the India Stack—a unified software platform including Aadhaar, e-KYC, and DigiLocker—has enabled seamless identity verification and service delivery, drastically reducing the entry barriers for SMEs into formal finance (Banerjee,2016).

These digital tools have reshaped the operational dynamics of rural SMEs by allowing instant transactions, easier access to credit through digital lending platforms, and integration into e-commerce ecosystems.

## 2.3 Barriers to Digital Adoption Among Rural SMEs

Despite India's significant strides in digital financial inclusion, rural SMEs continue to face several impediments to fully leveraging these advancements.

### • Digital Literacy and Skill Gaps

Many rural entrepreneurs lack the technical knowledge required to use digital financial platforms effectively. Studies by the Reserve Bank of India (RBI) and NITI Aayog indicate that a substantial percentage of SME owners are unaware of how to access online banking, digital wallets, or credit scoring platforms (NITI Aayog,2021). This digital illiteracy results in underutilization of available services and missed opportunities for growth.

### • Infrastructure Limitations

Rural infrastructure remains a bottleneck. Issues such as patchy internet connectivity, intermittent electricity supply, and lack of access to smartphones or computers severely restrict the use of digital services. According to a report by the Internet and Mobile Association of India (IAMAI), rural internet penetration stood at only 37% in 2022, compared to over 70% in urban areas.

### • Trust and Security Concerns

Trust deficits in digital systems continue to be a critical barrier. Rural SME owners often express concerns about fraud, data privacy, and transaction failures. These anxieties are exacerbated by previous experiences or community narratives around digital scams. Moreover, limited understanding of cybersecurity best practices discourages the use of digital financial platforms (RBI,2022).

## 3. RESEARCH METHODOLOGY

This study employs a secondary data-based methodology, analyzing data from multiple sources to draw insights about the role of digital financial services in rural SMEs. The research focuses on secondary data from government reports, Reserve Bank of India publications, World Bank databases, and industry whitepapers published between 2015 and 2024. The study examines various reports and publications, including: Government policy documents related to financial inclusion, statistical data from the Reserve Bank of India on digital financial adoption, Research articles and case studies on rural SMEs and digital tools, industry whitepapers that analyze the impact of DFI on SME growth. The data is analyzed using thematic analysis to identify trends and patterns related to the adoption of digital financial services. Key indicators, such as the rate of digital payment adoption, credit availability, and SME survival rates post-DFI interventions, have been assessed.

## 4. ANALYSIS AND DISCUSSION

### 4.1 Impact of Digital Financial Tools on SME Operational Efficiency

Access to digital financial services has enabled rural SMEs to streamline their operations, from managing cash flow to making payments. Tools such as UPI and mobile payments have simplified transactions, reducing the reliance on cash and improving financial management. This digital transition has improved operational efficiency, allowing SMEs to manage their resources more effectively (Mavlutova, et.al,2022).

#### 4.2 Market Reach and Business Scalability

Digital platforms have expanded the market reach of rural SMEs by facilitating e-commerce participation. With online platforms, SMEs can reach customers beyond their local areas, enhancing their scalability. Additionally, digital marketing tools allow SMEs to target specific customer segments, further boosting their business visibility (Nielsen,2018).

#### 4.3 Access to Working Capital and Formalization

One of the key benefits of digital financial inclusion is the increased access to credit. Through digital platforms, rural SMEs can apply for loans, access micro-financing options, and engage in digital credit facilities. This has contributed to greater formalization of SMEs, helping them access working capital and ensuring better financial resilience (Beck& Hoseini, 2014).

#### 4.4 Role of E-commerce in SME Growth

The rise of e-commerce platforms such as Amazon, Flipkart, and regional platforms has provided rural SMEs with the opportunity to expand their customer base. With access to digital payment systems, these SMEs can now engage in business-to-consumer transactions, improving their sales volume and market share (Jahanshahi, et. Al,2013).

### 5. FINDINGS

This section presents the key findings of the study, derived from the thematic analysis of secondary data sources spanning government reports, industry whitepapers, academic literature, and global financial inclusion databases. The findings are categorized into two major themes: the positive correlation between digital financial inclusion and SME performance, and the persistence of structural and behavioral barriers that continue to impede the full realization of DFI's potential in rural India.

#### 5.1 Positive Correlation Between Digital Financial Inclusion and SME Performance

The analysis reveals a strong and consistent positive correlation between the adoption of digital financial services and the overall performance of rural Small and Medium Enterprises (SMEs). Evidence from the Reserve Bank of India, the World Bank's Global Findex Database, and reports by fintech industry players point to several tangible benefits accruing to rural SMEs that have embraced digital tools (Ministry of MSME,2023).

##### • Increased Formalization of SMEs

One of the most notable effects of digital financial inclusion is the increased formalization of business operations among rural SMEs. Access to bank accounts (enabled by Jan Dhan Yojana) and digital payment platforms (e.g., UPI, BHIM, mobile wallets) has encouraged businesses to shift away from informal cash-based systems. This shift facilitates:

- Easier tax compliance and GST registration
- Improved visibility in financial records, aiding loan approvals
- Participation in formal supply chains and procurement systems

According to RBI reports (2022), there has been a 17% increase in SME formalization rates in digitally connected districts compared to digitally lagging ones.

##### • Improved Access to Working Capital

Digital financial inclusion has enhanced access to short-term credit and working capital, especially through digital lending platforms and fintech partnerships. Tools such as e-KYC, digital credit scoring, and account aggregation have reduced paperwork and onboarding time, allowing quicker and more targeted disbursement of credit (Ministry of MSME,2022).

Key benefits include:

- Reduced reliance on informal moneylenders
- Faster turnaround time on loan approvals (as low as 48 hours in some fintech models)
- Access to microloans, overdraft facilities, and invoice financing

Reports from SIDBI and BCG (2021) highlight that digitally active SMEs are 35% more likely to secure working capital loans compared to non-digitally active counterparts.

##### • Enhanced Participation in E-Commerce Platforms

Digital financial tools have enabled rural SMEs to integrate into e-commerce and digital marketplaces, thereby expanding their customer base beyond local markets. Payment gateways, QR code-based sales, and online settlement systems have become pivotal to this transformation.

This has resulted in:

- Increased sales volumes through online channels (e.g., Amazon Saheli, Flipkart Samarth)
- Better pricing power due to reduced dependence on intermediaries
- Enhanced customer trust via transparent digital payments

Government-backed programs such as ONDC (Open Network for Digital Commerce) are further expected to democratize digital commerce participation for rural enterprises.

#### 5.2 Persistent Barriers Despite Progress

Despite these encouraging trends, the study finds that several structural and perceptual barriers continue to inhibit the full adoption of digital financial tools among rural SMEs.

- Digital Literacy Gaps Among Rural Entrepreneurs

One of the most cited barriers is the low level of digital and financial literacy, particularly among first-generation rural entrepreneurs. Many lack the knowledge or confidence to use mobile apps, banking portals, or online accounting tools (Sharma, & Kharub, 2015).

Implications include:

- Underutilization of government schemes and fintech products
- Dependence on intermediaries (agents or family members) to operate accounts
- Fear of making errors during online transactions

NITI Aayog reports (2021) indicate that over 45% of rural MSME owners have limited or no digital literacy, significantly affecting their ability to leverage DFI.

- Infrastructure Limitations

Poor infrastructure remains a major hindrance, especially in remote rural and tribal areas. Key issues include:

- Unreliable internet connectivity, with speeds often too low for digital applications
- Electricity shortages affecting mobile phone and POS device usage
- Limited availability of affordable smartphones or digital devices

Data from IAMAI (2022) shows that rural internet penetration remains under 40%, limiting the scalability of digital finance platforms.

- Trust and Security Concerns

A significant psychological barrier is the lack of trust in digital financial systems. Concerns around data privacy, fraud, and transaction failures remain prevalent. Many SMEs are wary of:

- Sharing sensitive data online (e.g., Aadhaar, PAN, bank details)
- Accepting high-value digital payments
- Using online lending platforms without physical verification

This distrust is often due to negative word-of-mouth, lack of digital grievance redressal mechanisms, and limited customer support in regional languages

## 6. CONCLUSIONS

This study underscores the transformative role of Digital Financial Inclusion in enabling the growth, formalization, and market integration of rural SMEs in India. Through secondary data analysis, it is evident that digital tools—such as UPI, mobile banking, and digital credit platforms—have empowered small enterprises by improving access to formal finance, reducing reliance on cash economies, and connecting rural businesses to broader markets. However, the journey toward full inclusion is far from complete. Barriers such as limited digital literacy, infrastructural deficits, and lack of trust in digital systems continue to constrain the scale and equity of DFI adoption. These challenges disproportionately affect entrepreneurs in remote and socio-economically marginalized regions. To harness the full potential of digital finance for inclusive economic development, a coordinated policy response is imperative. This includes investing in digital capacity building, upgrading rural digital infrastructure, and reinforcing the trustworthiness of digital platforms. By addressing these critical issues, India can unlock the latent potential of its rural SMEs, enabling them to become engines of job creation, innovation, and sustainable growth in the digital age.

## REFERENCES

1. Ahamed, G. T., & Raju, S. A. A. (2023). A review of challenges and opportunities for MSMEs in India: a roadmap for success. *International Journal of Advanced Research in Commerce, Management & Social Science (IJARCMSS)*, 89, 89-98.
2. Alliance for Financial Inclusion. (2018). *Digital Financial Services: Basic Terminology*.
3. Bagale, G. S. (2014). Determinants of E-commerce in Indian MSME sector: a conceptual research model based on TOE framework. *Universal Journal of Management*, 2(3), 105-115.
4. Banerjee, S. (2016). Aadhaar: Digital inclusion and public services in India. *World Development Report*, 81-92.
5. Beck, T., & Hoseini, M. (2014). Informality and access to finance: evidence from India.
6. Bijoy, K. (2017). Financial Inclusion in India and PMJDY: A Critical Review. *ICITKM*, 14, 39-46.
7. Hattiangbire, D. T., & Harkal, P. (2022). Challenges and Future Prospects for the Indian MSME Sector: A Literature Review. *Journal of Management & Entrepreneurship*, 16(1), 2022.
8. Hermawan, A., Gunardi, A., & Sari, L. M. (2022). Intention to use digital finance MSMEs: the impact of financial literacy and financial inclusion. *Jurnal Ilmiah Akuntansi dan Bisnis*, 17(1), 171-182.
9. Hu, D., Fang, X., & DiGiovanni, Y. M. (2023). Technological progress, financial constraints, and digital financial inclusion. *Small Business Economics*, 61(4), 1693-1721.
10. Internet and Mobile Association of India (IAMAI). (2022). *Internet in India Report*.
11. Internet and Mobile Association of India (IAMAI). (2023). *Kantar Report*.
12. Jack, W., & Suri, T. (2014). Risk Sharing and Transactions Costs: Evidence from Kenya's Mobile Money Revolution. *American Economic Review*, 104(1), 183-223.
13. Jahanshahi, A. A., Zhang, S. X., & Brem, A. (2013). E-commerce for SMEs: empirical insights from three countries. *Journal of Small Business and Enterprise Development*, 20(4), 849-865.

14. Jeon, B. N., Han, K. S., & Lee, M. J. (2006). Determining factors for the adoption of e-business: the case of SMEs in Korea. *Applied Economics*, 38(16), 1905-1916.
15. Joshi, K., Mishra, M. K., Jamal, M., & Janotra, J. (2024). Measuring the intensity of challenges and problems of small-scale entrepreneurs in Uttarakhand, India. *Vilakshan-XIMB Journal of Management*.
16. Khatri, P. (2019). A Study of the Challenges of the Indian MSME Sector. *IOSR Journal of Business and Management*, 21(2), 05-13.
17. Khuntia, R. (2014). Pradhan Mantri Jan Dhan Yojana (PMJDY): A new drive towards financial inclusion in India. *ZENITH International Journal of Business Economics & Management Research*, 4(11), 10-20.
18. Koh, F., Phoon, K. F., & Ha, C. D. (2018). Digital financial inclusion in South east Asia. In *Handbook of Blockchain, Digital Finance, and Inclusion, Volume 2* (pp. 387-403). Academic Press.
19. Kumar, V., & Nanda, P. (2023). Determinants of the success of MSMEs in India: A policy vs. technology perspective. *International Journal of Technology, Policy and Management*, 23(1), 102-122.
20. Kumari, R., Sharma, V. C., & Adnan, M. (2024). Financial Literacy of Microentrepreneurs and its Effect on the Business Performance and Innovativeness: Empirical Evidence from India. *SEDME (Small Enterprises Development, Management & Extension Journal)*, 51(2), 133-148.
21. Liu, G., Huang, Y., & Huang, Z. (2021). Determinants and mechanisms of digital financial inclusion development: Based on urban-rural differences. *Agronomy*, 11(9), 1833.
22. Manzoor, F., Wei, L., & Sahito, N. (2021). The role of SMEs in rural development: Access of SMEs to finance as a mediator. *Plos one*, 16(3), e0247598.
23. Mavlutova, I., Spilbergs, A., Verdenhofs, A., Natrins, A., Arefjevs, I., & Volkova, T. (2022). Digital transformation as a driver of the financial sector sustainable development: An impact on financial inclusion and operational efficiency. *Sustainability*, 15(1), 207.
24. Ministry of Finance, Government of India. (2023). *Jan Dhan Yojana Progress Report*.
25. Ministry of MSME. (2017). *Annual Report 2016-17*.
26. Ministry of MSME. (2018). *Annual Report 2017-18*.
27. Ministry of MSME. (2019). *Annual Report 2018-19*.
28. Ministry of MSME. (2020). *Annual Report 2019-20*.
29. Ministry of MSME. (2021). *Annual Report 2020-21*.
30. Ministry of MSME. (2022). *Annual Report 2021-22*.
31. Ministry of MSME. (2023). *Annual Report 2022-23*.
32. Ministry of MSME. (2023). *National MSME Statistics 2022-23*.
33. Ministry of MSME. (2024). *Annual Report 2023-24*.
34. National Payments Corporation of India (NPCI). (2023). *UPI Product Statistics*.
35. Nielsen, C., & Lund, M. (2018). Building scalable business models.
36. NITI Aayog. (2021). *Digital Transformation in MSMEs: Opportunities and Challenges*.
37. Padmannavar, S. S. (2011). A review on E-Commerce empowering Women's. *International Journal of Computer Science and Telecommunications*, 2(8), 74-78.
38. Pranata, N., Suardi, I., & Suryanto, J. (2024). Digital finance for MSMEs: Issues, challenges, and keys to promote inclusive growth. In *The Digitalization of Indonesian Small and Medium Enterprises: Human Capital, Inclusivity and Platform Capitalism* (pp. 45-65). Singapore: Springer Nature Singapore.
39. Rahayu, S. K., Budiarti, I., Firdaus, D. W., & Onegina, V. (2023). Digitalization and informal MSME: Digital financial inclusion for MSME development in the formal economy. *Journal of Eastern European and Central Asian Research (JEECAR)*, 10(1), 9-19.
40. Rasheed, R., Siddiqui, S. H., Mahmood, I., & Khan, S. N. (2019). Financial inclusion for SMEs: Role of digital micro-financial services. *Review of Economics and Development Studies*, 5(3), 571-580.
41. Reserve Bank of India. (2021). *Micro, Small and Medium Enterprises*.
42. Reserve Bank of India. (2022). *Report on Trends and Progress in Banking*.
43. Sharma, R. K., & Kharub, M. (2015). Qualitative and quantitative evaluation of barriers hindering the growth of MSMEs. *International Journal of Business Excellence*, 8(6), 724-747.
44. Singh, M., & Rathi, R. (2022). Empirical investigation of lean six sigma enablers and barriers in Indian MSMEs by using multi-criteria decision making approach. *Engineering Management Journal*, 34(3), 475-496.
45. World Bank. (2020). *The Global Findex Database 2021*.
46. Zhang, X., Li, J., Xiang, D., & Worthington, A. C. (2023). Digitalization, financial inclusion, and small and medium-sized enterprise financing: Evidence from China. *Economic modelling*, 126, 106410.
47. Zulqarnain, M., Mustehsan, M., Balouch, U. K., & Munir, S. (2023). Assessing the influence of financial inclusion and digital finance on SMEs performance: the moderating role of technological adaptation. *Journal of Management: Small and Medium Enterprises (SMEs)*, 16(3), 459-476.