



The Digital Transformation of Microfinance: A Comprehensive Study of Fintech, UPI, and Mobile Banking Technologies

Dr. Sujeet Kumar Sharma*

*Assistant Professor, Department of Commerce, C.M. College, Darbhanga,
L.N. Mithila University, Darbhanga, Bihar*

*Corresponding Author: dr.sujeet1989@gmail.com

Abstract

The rapid digitization of India's payments and financial ecosystem is reshaping microfinance delivery models by integrating FinTech solutions, the Unified Payments Interface (UPI), mobile banking platforms and the Account Aggregator (AA) framework. This study offers a comprehensive analysis of how these technologies influence outreach, cost-efficiency, credit lifecycle management, and client experience in microfinance institutions (MFIs). Drawing on sector reports, regulatory data, and practitioner studies, the paper documents that UPI's transaction volumes and values have scaled dramatically—reaching nearly 19,633 million transactions and a monthly value of about ₹ 24.90 lakh crore in September 2025—providing low-cost rails for micropayments and remittances that MFIs increasingly leverage for collections and disbursements. Evidence from FinTech market analyses shows sustained revenue and profitability growth in FinTech firms (notably a 21% revenue rise in 2024), underscoring stronger private-sector capacity to develop scalable microfinance solutions. Case studies and working papers highlight practical pathways for MFIs to digitize: agent networks, digital KYC, mobile loan servicing, and integrations with open-finance infrastructures such as the Account Aggregator framework—over 223 million users and more than 2.6 billion accounts have been enabled on the AA network, enabling richer client data for credit decisioning. At the same time, institutional reports identify persistent challenges—digital literacy gaps, interoperability, data privacy, and IT governance risks—that constrain adoption and raise supervisory concerns. The paper synthesizes quantitative trends and qualitative lessons to propose a framework for MFI digital transformation that balances operational efficiency, client protection, and regulatory compliance. Policy and practice recommendations target scalable product design, enhanced digital onboarding, risk-management upgrades, and public-private partnerships to accelerate inclusive, resilient microfinance in the digital era.

Keywords: Microfinance digitalization; FinTech; UPI; Mobile banking; Account Aggregators; Financial inclusion.

Introduction

The landscape of microfinance in India has undergone a profound transformation in recent years, driven largely by the rapid digitization of the country's financial ecosystem. Traditionally, MFIs relied on face-to-face interactions, paper-based processes, and cash-intensive operations to serve low-income households and underserved communities. These methods,

although effective in earlier decades, increasingly proved inefficient, costly, and difficult to scale in a world where digital technologies have become central to financial inclusion. The emergence of FinTech innovations, the UPI, mobile banking systems, and the AA framework has opened new pathways for expanding microfinance outreach while enhancing operational transparency, client experience, and financial sustainability.

India's digital payments revolution, spearheaded by UPI, has been particularly instrumental in reshaping microfinance delivery models. With UPI transaction volumes reaching nearly 19,633 million and a monthly value of approximately ₹ 24.90 lakh crore in September 2025, the platform has created a low-cost, real-time, and interoperable payments infrastructure usable even by first-time digital clients. This dramatic surge provides MFIs with reliable rails for loan disbursement, instalment collection, micro-savings, and digital remittances. Mobile banking, too, has grown rapidly, fuelled by widespread smartphone penetration, affordable data services, and user-friendly mobile applications. Together, UPI and mobile banking have reduced the need for cash handling, minimized physical branch dependency, and improved the overall efficiency of financial service delivery to the last mile.

FinTech firms have also emerged as crucial partners in the modernization of microfinance. As market analyses indicate, FinTech companies witnessed a revenue growth of nearly 21% in 2024, demonstrating their growing influence, innovation capability, and scalability. Their technological solutions—ranging from digital KYC verification, algorithmic credit scoring, AI-based risk modelling, and automated loan servicing—are enabling MFIs to expand their portfolios while maintaining better credit discipline. These advancements not only streamline operations but also open doors for clients who were previously excluded due to limited documentation or geographical barriers.

A significant structural reform in India's financial data architecture is the implementation of the AA framework. With over 223 million users and more than 2.6 billion enabled accounts, the AA ecosystem supports secure, consent-based financial data sharing. For MFIs, this means access to comprehensive financial information that enhances creditworthiness assessments, reduces information asymmetry, and enables more personalized loan products. The AA system strengthens trust, reduces underwriting costs, and plays a pivotal role in bringing informal earners into the formal financial fold.

Despite these advancements, challenges persist. Issues related to digital literacy, cyber-security threats, interoperability gaps, and regulatory compliance continue to hinder universal adoption. Many potential beneficiaries still lack digital awareness or access to smartphones. MFIs must navigate these barriers while ensuring consumer protection and safeguarding sensitive data.

Against this backdrop, the present study provides a comprehensive examination of the digital transformation sweeping through the microfinance sector. By synthesizing quantitative evidence, policy developments, and practical insights, the paper outlines strategic approaches to strengthen digital infrastructure, enhance user trust, and promote sustainable financial inclusion. Ultimately, the study aims to support MFIs, policymakers, and technology providers in designing inclusive, efficient, and resilient microfinance systems for India's evolving digital economy.

Objectives

1. To examine the impact of FinTech, UPI, and mobile banking technologies on the operational efficiency and outreach of MFIs.
2. To assess how digital tools such as the Account Aggregator framework enhance credit assessment, customer onboarding, and service delivery in microfinance.
3. To identify the key challenges and opportunities associated with the digital transformation of microfinance in India.

Methodology

This study adopts a descriptive and analytical research design to examine the digital transformation of microfinance in India. The methodology is based primarily on secondary data, collected from government reports, RBI publications, FinTech industry analyses, microfinance sector reports, academic journals, and reputable online databases. Data on UPI transactions, mobile banking usage, and the Account Aggregator framework were reviewed to understand recent trends and technological adoption. Comparative analysis was used to evaluate changes in outreach, operational efficiency, and client experience among MFIs. The findings are synthesized to draw meaningful insights, identify gaps, and propose policy-oriented recommendations.

Enhancement of Operational Efficiency Through Digital Technologies

The adoption of FinTech solutions, UPI-based payments, and mobile banking services has significantly strengthened the operational efficiency of MFIs in India. Earlier, microfinance operations involved manual documentation, cash collections, and in-person verifications, all of which increased cost, delayed disbursement cycles, and posed a higher likelihood of errors. With digital integration, MFIs now use automated KYC verification, mobile-based loan applications, digital repayment tracking, and AI-supported credit scoring systems.

The growth of UPI has been a major driver of this efficiency. In August 2025, UPI recorded more than 20 billion transactions with a total value of approximately ₹ 24.85 lakh crore, reflecting its role as a secure, real-time payment system that MFIs now use for instalment collections and loan disbursements. The digital ecosystem reduces dependency on field staff, allows faster turnaround, and improves the accuracy and transparency of transactions. Evidence also shows that FinTech-enabled automation reduces administrative cost and improves loan cycle management for MFIs.

Expansion of Outreach and Inclusivity Among Hard-to-Reach Populations

Digital finance tools are creating unprecedented opportunities for MFIs to reach underserved rural and remote populations. UPI's rapid expansion—supported by an increase in live banks (from 602 in 2024 to 675 in 2025) and a rise in UPI QR codes from 569 million to 670 million during the same period—enhances accessibility for individuals previously excluded from the formal financial system. Mobile banking applications allow clients to access services without visiting a physical branch, breaking geographical barriers.

FinTech-driven digital onboarding, e-KYC using Aadhaar, and mobile wallet integration help overcome documentation challenges faced by low-income households. These technological enablers reduce time, cost, and mobility barriers, allowing MFIs to deliver financial services at scale without expanding physical infrastructure. As digital access widens, MFIs can include women borrowers, informal workers, and small rural entrepreneurs more efficiently.

Strengthening Customer Experience and Service Delivery

Digital adoption significantly enhances service quality and customer satisfaction. Borrowers benefit from quicker loan approvals, instant UPI-based repayments, automated reminders, and transparent digital receipts. Mobile banking apps provide real-time updates on balances, repayment schedules, and account status—reducing reliance on field officers. Digital repayment reduces the risks associated with cash and strengthens client trust.

FinTech tools also support personalized offerings by enabling MFIs to analyse customer behaviour and credit patterns in far greater detail than traditional methods allow. By using data-driven insights, MFIs can design tailored loan products that match individual repayment capacities, seasonal income flows, and specific financial needs. This personalization extends to flexible repayment options, automated reminders, and more responsive grievance-redressal systems that strengthen client satisfaction. Moreover, studies

consistently show that digital microfinance models significantly lower overall transaction costs by reducing paperwork, minimizing field visits, and streamlining back-end processes. These models also enhance convenience and accessibility for borrowers, allowing them to make payments, track balances, and access services anytime through user-friendly mobile platforms.

Table 1: Key Indicators Reflecting the Digital Transformation of Microfinance

Indicator	2024 Value	2025 Value
UPI Monthly Transactions	14–15 billion	20 billion (Aug 2025)
UPI Transaction Value	₹ 17–18 lakh crore	₹ 24.85 lakh crore (Aug 2025)
Banks Live on UPI	602	675
UPI QR Codes	569 million	670 million
FinTech Industry Revenue Growth	56% (2023)	21% (2024)
Smartphone Users in India	850 million	900 million (2025 est.)

Source: NPCI (2024–2025), BCG FinTech Report (2024), IMAI Digital India Report (2025)

The above Table 1 clearly shows the rapid digital transformation taking place in India's microfinance ecosystem. Key indicators such as UPI monthly transactions and transaction value demonstrate substantial growth from 2024 to 2025, highlighting increased adoption of digital payments. The rise in banks live on UPI and QR code usage further reflects improved accessibility and digital penetration. Additionally, strong FinTech industry revenue growth and the expanding smartphone user base indicate a supportive technological environment enabling faster, more transparent, and customer-friendly microfinance service delivery.

Strengthening Credit Assessment Through Digital Data-Sharing Mechanisms

The AA ecosystem represents a major transformation in India's financial data architecture by enabling secure, consent-based sharing of financial information across institutions. With more than 223 million users and over 2.6 billion enabled accounts, the AA framework allows MFIs to access comprehensive client data, including bank statements, income flows, repayment history, and savings patterns. This information was previously inaccessible, particularly for informal and low-income borrowers who lacked formal documents.

Through the AA network, MFIs are now able to conduct more accurate and data-rich credit assessments. This reduces information asymmetry, which has been a longstanding challenge in microfinance. Instead of relying heavily on field officers or social guarantees, MFIs can use verified financial data to determine repayment capacity and identify early warning signals. Digital credit scoring models, powered by machine learning and integrated with AA data, increase predictive accuracy and reduce default risks. As a result, MFIs can diversify their loan portfolios while maintaining stronger credit discipline, thereby improving both sustainability and customer suitability of loan products.

Improving Customer Onboarding Through Automated and Digital KYC Processes

Digital tools have significantly simplified and accelerated customer onboarding processes for MFIs. Traditionally, documentation barriers and manual verification slowed down the onboarding cycle, especially for rural and informal-sector clients. The integration of e-KYC using Aadhaar, video KYC, and biometric authentication now enables clients to complete

onboarding within minutes. This shift is particularly beneficial for women borrowers, migrant workers, and those lacking traditional paperwork.

FinTech platforms have emerged as key enablers in bridging these gaps. Automated KYC validation systems reduce human errors, eliminate repeated documentation, and ensure compliance with regulatory norms. The use of mobile-based onboarding applications further enhances accessibility, allowing field agents or clients themselves to complete KYC using smartphones. This is complemented by the AA framework, which provides digitally verified financial information without requiring clients to submit physical documents. Together, these innovations streamline onboarding, reduce operational overhead, and increase transparency. Customers experience greater convenience, and MFIs benefit from faster turnaround time, reduced fraud, and improved documentation accuracy—ultimately supporting deeper financial inclusion.

Enhancing Service Delivery Through Digital Interfaces and Real-Time Payment Systems

Service delivery in microfinance has been transformed through digital repayment systems, especially UPI-based payments, mobile wallets, and app-based loan servicing. UPI's real-time interoperable payment system, which recorded 20 billion transactions in August 2025, has become a vital tool for loan instalment collections and digital disbursements. Its widespread adoption—supported by the growth of QR codes from 569 million in 2024 to 670 million in 2025—enables clients to make payments securely without visiting branches.

Mobile banking interfaces provide borrowers with real-time access to loan balances, repayment schedules, and digital receipts, significantly improving transparency and comfort with formal finance. Automated reminders, instant notifications, and chat-based support systems further reduce dependency on field staff while enhancing customer satisfaction. FinTech-backed analytics also help MFIs tailor loan products to individual borrower behaviour, refine risk-monitoring strategies, and introduce flexible repayment options. Overall, digital tools have strengthened credit assessment, simplified customer onboarding, and improved service delivery, fulfilling the second objective by demonstrating how technology-driven processes enhance the efficiency and inclusiveness of microfinance.

Challenges Hindering the Digital Transformation of Microfinance

- 1. Digital Literacy Gaps:** A major obstacle to the digital transformation of microfinance is the widespread lack of digital literacy among clients. Many microfinance borrowers—most of whom come from rural, low-income, and less-educated backgrounds—have limited experience using smartphones, UPI applications, or online banking interfaces. This lack of familiarity leads to hesitation, fear of making mistakes, and dependence on field staff for digital transactions. As a result, even when MFIs introduce digital tools, adoption remains slow because clients are not confident using technology independently.
- 2. Smartphone and Internet Access Constraints:** Although smartphone usage is increasing across India, affordability issues still prevent many poor households from purchasing devices with adequate storage and speed. Moreover, digital microfinance services rely heavily on stable internet connectivity, which remains inconsistent in remote regions. Weak network coverage or low data affordability makes it difficult for borrowers to complete digital KYC, repay through UPI, or access mobile banking services. These infrastructural barriers create uneven digital access across regions.
- 3. Cybersecurity Threats and Data Privacy Risks:** With the growing use of digital platforms, the risk of cyber fraud, data theft, phishing attempts, and unauthorized financial transactions has increased significantly. Many microfinance clients are unaware of online safety practices, making them more vulnerable to digital deception. Furthermore, small MFIs often lack strong IT governance policies, secure servers, or

dedicated cybersecurity professionals. This increases institutional exposure to cyberattacks and raises concerns about the protection of sensitive financial data.

4. **Interoperability and Integration Challenges:** Integrating traditional MIS systems with modern digital platforms such as UPI, mobile banking apps, FinTech APIs, and the AA framework requires advanced technical capability. Many MFIs still operate on outdated or fragmented systems that cannot support seamless data flow. Upgrading these systems requires financial investment, skilled manpower, and time—resources that smaller MFIs often lack. Consequently, technological incompatibility becomes a major barrier to digital scaling.
5. **High Costs of Digital Infrastructure:** The adoption of digital systems involves significant upfront and ongoing expenditures. These include server maintenance, cybersecurity upgrades, cloud-based storage, digital onboarding platforms, and customer service technology. While large MFIs can absorb these costs, smaller institutions struggle to allocate sufficient budget for digital transformation. This creates an uneven pace of digital adoption across the sector.
6. **Regulatory and Compliance Pressures:** As digital operations expand, MFIs must comply with stricter regulatory requirements related to data protection, cybersecurity standards, and KYC norms. Smaller MFIs often find it difficult to stay updated with these evolving regulations. Compliance requires investment in secure systems and staff training, adding to operational burdens.

Opportunities Created by Digital Transformation in Microfinance

1. **Expansion of Outreach to Remote Populations:** Digital technologies provide MFIs with the ability to reach remote and underserved populations more efficiently than ever before. With tools such as e-KYC, Aadhaar-enabled onboarding, and mobile authentication, MFIs can serve customers who previously lacked access to formal credit due to documentation or geographical barriers. UPI QR codes now enable small rural merchants and borrowers to make or receive payments digitally, eliminating the dependence on physical branches.
2. **Cost Reduction and Operational Efficiency:** Digitization significantly reduces the operational costs of MFIs by minimizing paperwork, reducing manual verification, and lowering the number of required field visits. Automated repayment systems, mobile apps, and digital ledgers streamline the entire loan cycle. This increases accuracy, accelerates loan processing, and reduces human error, helping MFIs operate more efficiently.
3. **Better Credit Assessment and Customized Products:** With the Account Aggregator framework, MFIs gain access to verified financial information such as bank statements, income patterns, and repayment behaviour. This allows for more accurate credit scoring and reduces the risks associated with lending to low-income borrowers. Digital data analysis also enables MFIs to create personalized loan products that match client needs and repayment capacity.
4. **Enhanced Transparency and Client Trust:** Digital receipts, instant updates, and real-time account information improve transparency and reduce disputes between borrowers and MFIs. Clients gain greater confidence when transactions are documented automatically, and loan schedules are clearly reflected in mobile apps. This strengthens trust and encourages long-term borrowing relationships.
5. **Scalability and Innovation Potential:** The use of digital tools allows MFIs to scale their operations rapidly without proportionate increases in physical infrastructure. Partnerships with FinTech firms provide opportunities to innovate through AI-driven credit models, mobile loan servicing, and smart customer engagement tools. This creates a more flexible, innovative, and competitive microfinance ecosystem.

Recommendations and Strategic Pathways for Harnessing Opportunities

1. **Invest in Digital Literacy and Consumer Awareness:** To maximize the benefits of digital transformation, MFIs should implement targeted digital literacy programmes in rural communities. These initiatives should help borrowers learn how to use UPI apps, verify OTPs, protect passwords, and understand digital receipts. Providing training in local languages and offering assisted digital services can significantly boost adoption.
2. **Strengthen Cybersecurity Frameworks:** MFIs must prioritize cybersecurity by adopting strong encryption systems, regular security audits, and fraud-detection technologies. Staff should be trained to handle digital risks and assist clients in avoiding fraud. Ensuring strict adherence to RBI cybersecurity guidelines is essential to protect both institutions and clients.
3. **Promote Public–Private Partnerships:** Collaborative partnerships between MFIs, FinTech companies, telecom operators, and government agencies can help improve digital infrastructure and reduce costs. Shared platforms and technology support systems enable MFIs—especially smaller ones—to adopt digital solutions efficiently.
4. **Encourage Affordable Digital Access:** MFIs and policymakers should work together to expand access to affordable smartphones, low-cost data plans, and feature-phone UPI services such as UPI123Pay. This will make digital microfinance more inclusive, especially for low-income groups.
5. **Adopt Scalable and Interoperable Systems:** MFIs should transition to cloud-based systems that are compatible with UPI, the AA network, and digital KYC technologies. Interoperability ensures faster onboarding, seamless verification, and efficient loan servicing. It also reduces duplication of data and helps maintain regulatory compliance.

Result and Discussion

The findings of the study clearly indicate that the digital transformation driven by FinTech, UPI, mobile banking technologies, and the AA framework has significantly reshaped the functioning of MFIs in India. The results derived from sectoral data, technology usage trends, and institutional reports demonstrate that digital adoption has enhanced operational efficiency, expanded outreach, and strengthened service delivery across the microfinance ecosystem. UPI transaction volumes, which reached nearly 19,633 million transactions with a value of about ₹ 24.90 lakh crore in September 2025, reflect the extent to which digital payments have become embedded in daily financial practices. This growth has provided MFIs with a reliable, low-cost, and real-time payment infrastructure for instalment collections, disbursements, and customer engagement.

The discussion shows that FinTech innovations have played an essential role in improving internal operations of MFIs. With technologies such as automated KYC, AI-based credit scoring, and digital repayment tracking, MFIs are now able to process loans more quickly and manage risks more effectively. The 21% revenue growth observed in the FinTech sector in 2024 highlights increasing private-sector capacity to build scalable financial solutions tailored to low-income borrowers. The AA framework has further enhanced credit assessment capabilities by enabling secure, consent-based financial data sharing from over 223 million users and more than 2.6 billion linked accounts. This development reduces information asymmetry and supports personalized credit decisions.

At the same time, the results also reveal that persistent challenges hinder universal digital adoption. Digital literacy gaps, especially in rural areas, continue to slow the transition to digital repayment and onboarding systems. Limited smartphone access, poor connectivity in remote regions, and cybersecurity vulnerabilities pose additional barriers. Moreover, MFIs face integration challenges when attempting to adopt advanced technologies due to high costs and limited technical capacity.

Overall, the discussion underscores that while digital transformation has significantly improved efficiency, transparency, and outreach, achieving full-scale adoption will require strategic interventions. Strengthening digital literacy, enhancing cybersecurity frameworks, promoting interoperable systems, and fostering public–private partnerships are essential to ensuring that digital microfinance becomes both inclusive and sustainable.

Conclusion

This study accomplishes that digital innovations—UPI, mobile banking, FinTech solutions, and the Account Aggregator framework—have transformed microfinance in India by enhancing efficiency, expanding outreach, and improving service quality for underserved populations. The rapid rise in UPI transactions, increased smartphone usage, and strong FinTech sector growth demonstrate a robust digital ecosystem supporting MFIs. However, the transformation remains uneven due to digital literacy gaps, cybersecurity risks, interoperability challenges, and high compliance costs, especially for smaller MFIs. The findings highlight that digitalization must be supported by capacity-building, strong governance, and effective client protection. Overall, a well-designed digital microfinance model, built on secure data sharing, accessible interfaces, and inclusive policies, can deepen financial inclusion. Strengthening digital awareness, ensuring affordable infrastructure, and promoting public–private partnerships will be essential for achieving sustainable and resilient microfinance in the digital era.

References

1. Amnas, M. B., Selvam, M., & Parayitam, S. (2024). FinTech and Financial Inclusion: Exploring the Mediating Role of Digital Financial Literacy and the Moderating Influence of Perceived Regulatory Support. *Journal of Risk and Financial Management*, 17(3), 108. <https://doi.org/10.3390/jrfm17030108>
2. Chandra, Shalini, Shirish C. Srivastava, and Yin-Leng Theng. (2010). Evaluating the Role of Trust in Consumer Adoption of Mobile Payment Systems: An Empirical Analysis. *Communications of the Association for Information Systems* 27: 562–88.
3. Gautam, Dhruva Kumar, and Gunja Kumari Sah. (2023). Online Banking Service Practices and Its Impact on E-Customer Satisfaction and E-Customer Loyalty in Developing Country of South Asia-Nepal. *SAGE Open* 13: 1–14.
4. Gautam, Rahul Singh, Shailesh Rastogi, Aashi Rawal, Venkata Mrudula Bhimavarapu, Jagjeevan Kanoujiya, and Samaksh Rastogi. (2022). Financial Technology and Its Impact on Digital Literacy in India: Using Poverty as a Moderating Variable. *Journal of Risk and Financial Management* 15: 311.
5. Hasan, Morshadul, Thi Le, and Ariful Hoque. (2021). How does financial literacy impact on inclusive finance? *Financial Innovation* 7: 40.
6. Khan, Habib Hussain, Shoaib Khan, and Abdul Ghafoor. (2023). Fintech adoption, the regulatory environment and bank stability: An empirical investigation from GCC economies. *Borsa Istanbul Review* 23: 1263–81.
7. Nasir, Abdul, Naeem Jan, Dragan Pamucar, and Sami Ullah Khan. (2023). Analysis of cybercrimes and security in FinTech industries using the novel concepts of interval-valued complex q-rung orthopair fuzzy relations. *Expert Systems with Applications* 224: 119976.
8. Ravikumar, T., B. Suresha, N. Prakash, Kiran Vazirani, and T. A. Krishna. (2022). Digital financial literacy among adults in India: Measurement and validation. *Cogent Economics & Finance* 10: 2132631.
9. Devashish Kushwaha & Dr. Dipti Malpani (2025). The Impact of Fintech on Financial Inclusion in India: An Empirical Analysis of Digital Payment Adoption and Banking Access. *International Journal of Environmental Sciences*, 11(12s), 218-227. <https://doi.org/10.64252/g845vb32>.
10. Fahad, N., & Shahid, M. (2022). Exploring the determinants of adoption of Unified Payment Interface (UPI) in India: A study based on diffusion of innovation theory. *Digital Business*, 2(2), 100040. <https://doi.org/10.1016/j.digbus.2022.100040>.

11. Chaterji, A., Dr. Abhijeet, & Thomas, R. (2017). Unified Payment Interface (UPI): A Catalyst Tool Supporting Digitalization - Utility, Prospects & Issues. *International Journal of Innovative Research and Advanced Studies (IJIRAS)*, 4(2). Available at SSRN: <https://ssrn.com/abstract=3774910>
12. Duvendack, M., Sonne, L. & Garikipati, S. (2023). Gender Inclusivity of India's Digital Financial Revolution for Attainment of SDGs: Macro Achievements and the Micro Experiences of Targeted Initiatives. *Eur J Dev Res* 35, 1369-1391. <https://doi.org/10.1057/s41287-023-00585-x>
13. Nayak Kini A and Basri S. (2022). An empirical examination of customer advocacy influenced by engagement behaviour and predispositions of FinTech customers in India [version 2; peer review: 2 approved]. *F1000Research* 2022, 11: 27. <https://doi.org/10.12688/f1000research.74928.2>
14. Ansar, M., Asif, N., & Mahale, P. (2024). The impact of unified payment interface (UPI) on financial inclusion and economic development: A digital innovation perspective. *International Journal of Multidisciplinary Research and Growth Evaluation*, 5(4), 452-457.
15. Rastogi, S., Panse, C., Sharma, A., & Bhimavarapu, V. M. (2023). Unified Payment Interface (UPI): A Digital Innovation and Its Impact on Financial Inclusion and Economic Development. *Journal of Digital Finance*, 8(1), 45-62.
16. Fahad, Mohammad Shahid (2022). Exploring the determinants of adoption of Unified Payment Interface (UPI) in India: A study based on diffusion of innovation theory, *Digital Business*, Volume 2, Issue 2, 100040, <https://doi.org/10.1016/j.digbus.2022.100040>.

