

# A STUDY ON THE IMPACT OF FINANCIAL TECHNOLOGY ON FINANCIAL INCLUSION IN INDIA

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## **Abstract**

*This study examines the impact of financial technology (FinTech) on financial inclusion in India from 2020 to 2024. Over the past five years, India has witnessed a digital revolution in its financial sector, driven by initiatives like UPI, Aadhaar-linked banking, mobile banking apps, and government schemes such as PMJDY and MUDRA. Using secondary data from government and regulatory sources, this study analyzes trends in digital payments, bank account penetration, access to credit, and rural banking infrastructure. The findings indicate a strong positive correlation between FinTech adoption and increased access to financial services, particularly among rural populations and women. The study concludes that FinTech has become a crucial driver of inclusive financial growth, although certain barriers such as digital literacy and infrastructure gaps still persist. This paper provides insights for policymakers, financial institutions, and stakeholders aiming to build a more inclusive financial ecosystem in the digital age.*

## **Keywords:**

*Financial Inclusion, Financial Technology (FinTech), Digital Banking, UPI, PMJDY, Mobile Banking, Aadhaar, MUDRA Loans, India, Rural Finance*

## **1. INTRODUCTION**

In recent years, financial technology (fintech) has revolutionized the delivery of financial services, particularly in emerging economies like India. With a population exceeding 1.4 billion and vast socio-economic diversity, India has long grappled with challenges in achieving universal financial access. However, the convergence of technology, digital infrastructure, and policy reforms has significantly accelerated the process of financial inclusion—defined as the availability and equality of opportunities to access financial services. A key driver of this transformation has been India's robust fintech ecosystem, supported by innovations such as the Unified Payments Interface (UPI), mobile banking, digital lending, and Aadhaar-enabled services. According to government data, the number of UPI transactions surged from 12.5 billion in 2020 to 96.2 billion in 2024, and the value rose from ₹21.3 lakh crore to ₹175.4 lakh crore. Simultaneously, mobile banking users increased from 30.2 crore in 2020 to 55 crore in 2024, highlighting the growing adoption of digital financial solutions. Further, fintech startups in India grew from 1,700 in 2020 to 3,750 in 2024, with an increasing focus on payments, lending, and wealth management. These companies are leveraging technology to offer tailored financial products to unbanked and underbanked populations, including women, small entrepreneurs, and rural communities.

On the financial inclusion front, the Pradhan Mantri Jan Dhan Yojana (PMJDY) played a critical role by increasing bank account penetration from 38 crore in 2020 to 51.5 crore in 2024, with over 57% of these accounts held by women. Aadhaar-linked accounts also rose from 112 crore to 148.9 crore during this period, enabling efficient and transparent Direct Benefit Transfers

(DBT) worth over ₹18.75 lakh crore in 2024 alone, reaching nearly 85 crore beneficiaries. In addition, digital lending has expanded rapidly, with total disbursed loans rising from ₹1.15 lakh crore in 2020 to ₹4.45 lakh crore in 2024, and NBFCs accounting for 72% of the lending market in 2024. Fintech-enabled credit platforms are helping small businesses, informal workers, and rural borrowers overcome traditional barriers such as lack of collateral, poor credit history, and geographic isolation. These developments demonstrate that fintech is not merely complementing traditional banking, but is also actively reshaping it by making financial services more inclusive, affordable, and accessible.

## **2. REVIEW OF LITERATURE**

Statista [11] indicated that the number of FinTech startups in India grew from 1,200 in 2020 to over 2,800 by 2024, showing the rapid expansion and innovation in financial service delivery. PMJDY Reports [4] (2020–2024) showed that the inclusion of over 500 million unbanked citizens into the formal banking system was supported by digital onboarding and FinTech innovations, including e-KYC and Aadhaar authentication. NPCI [5] reported that UPI transactions crossed 12 billion in a single month in 2024, emphasizing the mass adoption of digital payments as a driver for everyday financial inclusion.

PwC India [7] stated that over 65% of FinTech users in India belong to Tier-2 and Tier-3 cities. This reflects the role of mobile technology in bridging the urban-rural divide in banking access. Reserve Bank of India [9] observed that initiatives like Bharat Bill Payment System (BBPS), Aadhaar-enabled Payment System (AePS), and UPI have made financial transactions accessible, affordable, and reliable, even in the remotest areas.

EY India [1] reported that 87% of surveyed Indian FinTech users found digital financial services more convenient and trustworthy than traditional banking. The report observed a sharp increase in digital loan disbursements and insurance adoption. RBI Digital Lending Report [8] noted the rise in digital loan platforms, which contributed to financial access among MSMEs, gig economy workers, and those without traditional credit histories. World Bank [12] in its Global Findex Report noted that financial technology in India contributed significantly to increasing bank account ownership and digital payments, particularly among women and rural citizens.

NITI Aayog [6] emphasized the need for digital-only banks to further deepen financial inclusion. The report recommended regulatory reforms to help FinTech companies reach underserved populations more effectively. KPMG [3] highlighted that India's FinTech ecosystem attracted \$8.4 billion in funding in 2021 alone, showing the sector's critical role in improving access to credit, payments, and savings products for underbanked individuals. Singh & Dutta [10] studied the role of FinTech in promoting

financial inclusion through government schemes such as DBT (Direct Benefit Transfer) and UPI. They found a direct correlation between FinTech growth and increased participation of low-income households in formal finance.

Gupta & Kohli [2] explored the transformative role of FinTech in reshaping India’s financial sector. They highlighted how digital platforms, especially UPI and mobile banking, have reduced barriers to financial access among rural and semi-urban populations.

### 3. OBJECTIVES OF THE STUDY

1. To analyze the growth and development of financial technology (FinTech) in India from 2020 to 2024.
2. To evaluate the role of FinTech in enhancing financial inclusion across different socio-economic segments in India.
3. To examine the challenges and policy implications associated with FinTech-led financial inclusion initiatives in India.

### 4. RESEARCH METHODOLOGY

The present study adopts a descriptive and analytical research design to explore the role and impact of financial technology (FinTech) in enhancing financial inclusion in India. The study is based on quantitative analysis of secondary data sources, focusing on the period from 2020 to 2024 to capture the most recent developments in digital financial services. The study relies exclusively on secondary data obtained from reliable and government-authenticated sources. These include reports and databases from the Reserve Bank of India (RBI), Ministry of Finance, Pradhan Mantri Jan Dhan Yojana (PMJDY), National Payments Corporation of India (NPCI) for UPI transactions, MUDRA loan scheme data, Aadhaar-enabled Direct Benefit Transfers (DBT), and global sources such as the World Bank’s Global Findex Database. These data sources provide a comprehensive understanding of both the financial inclusion parameters and the technological advancements contributing to it.

The collected data has been analyzed using simple percentage and trend analysis techniques, supported by graphical representation such as tables, bar charts, and line graphs. These tools help in identifying year-wise growth, usage patterns, and the extent of financial penetration across various economic and geographic segments in India.

The scope of the study is limited to understanding how financial technology solutions such as mobile banking, digital wallets, UPI platforms, Aadhaar-based services, and FinTech startups have contributed to expanding access to formal financial services, especially in rural and low-income areas. It attempts to measure the real-world impact of technology-driven financial tools on the previously unbanked or underbanked population. However, the study is subject to a few limitations. Since it relies solely on secondary data, primary data collection (such as surveys or interviews) was not conducted, which may limit the perspective of end-users.

Further, state-wise or regional disparities in financial inclusion are not deeply explored, and the conclusions are based

on the assumption that published data from government and institutional sources are accurate and up to date.

## 5. IMPACT OF FINANCIAL TECHNOLOGY ON FINANCIAL INCLUSION IN INDIA

The analysis reveals that the rapid growth of financial technology from 2020 to 2024 has significantly enhanced financial inclusion in India by improving access to digital banking, credit, and payment services across rural and urban populations.

Table.1. Growth in Digital Payments (2020–2024)

Year	Total Digital Transactions (Bn)	Total Value (₹ Lakh Cr)	% Growth in Volume
2020	45.7	1,620	–
2021	55.5	2,020	21.4%
2022	74.2	3,005	33.5%
2023	89.5	3,925	20.6%
2024	108.0	4,850	20.7%

In the Table.1 illustrates the steady increase in digital payment adoption in India over the five-year period. Total digital transactions rose from 45.7 billion in 2020 to 108.0 billion in 2024, reflecting an annual growth rate of over 20%, particularly strong in 2022 (33.5%). The total value of these transactions also showed a remarkable increase, more than doubling from ₹1,620 lakh crore in 2020 to ₹4,850 lakh crore in 2024. This surge highlights India’s shift towards a cashless economy, driven by smartphone usage and digital payment platforms.

Table.2. UPI Transaction Growth (2020–2024)

Year	No. of Transactions (Bn)	Value of Transactions (₹ Lakh Cr)	% Growth in Value
2020	12.5	21.3	–
2021	22.0	41.0	92.5%
2022	45.6	84.2	105.4%
2023	74.0	139.2	65.3%
2024	96.2	175.4	26.0%

It clear Table.2 focuses on UPI (Unified Payments Interface) transactions, which exhibited exponential growth, with transaction volume increasing from 12.5 billion in 2020 to 96.2 billion in 2024, and the value rising from ₹21.3 lakh crore to ₹175.4 lakh crore. The most substantial growth in value occurred between 2020 and 2022, indicating rapid consumer acceptance of UPI and its emergence as the dominant digital payment mode.

Table.3. Number of Fintech Startups in India (2020–2024)

Year	Total Fintech Startups	% in Payments	% in Lending	% in WealthTech
2020	1,700	40%	25%	10%
2021	2,100	38%	28%	12%
2022	2,650	36%	30%	13%

2023	3,150	35%	31%	14%
2024	3,750	34%	32%	15%

In the Table.3 shows the expansion of the fintech startup ecosystem in India. The number of fintech startups increased from 1,700 in 2020 to 3,750 in 2024, with a gradual diversification of services. Although payments-based startups reduced proportionally (from 40% to 34%), there was a noticeable increase in lending (from 25% to 32%) and WealthTech solutions (from 10% to 15%), reflecting sectoral maturity and innovation.

Table.4. Fintech Investment in India (2020–2024)

Year	Total Investment (US\$ Billion)	No. of Deals	Average Deal Size (US\$ Mn)
2020	3.8	85	44.7
2021	8.4	120	70.0
2022	5.8	110	52.7
2023	7.1	130	54.6
2024	9.2	145	63.4

It clear Table.4 reports that fintech investments surged from US\$3.8 billion in 2020 to US\$9.2 billion in 2024, indicating investor confidence. Notably, the average deal size increased from US\$44.7 million to US\$63.4 million, reflecting both the valuation growth of fintech firms and increasing funding in later-stage companies.

Table.5. Digital Lending Growth in India (2020–2024)

Year	Total Loans Disbursed (Cr)	Value of Loans (₹ Lakh Cr)	% via NBFCs
2020	9.8	1.15	65%
2021	13.5	1.90	67%
2022	17.8	2.75	70%
2023	22.3	3.60	71%
2024	27.0	4.45	72%

To the Table.5 presents a consistent rise in digital lending activities. The total number of loans disbursed grew from 9.8 crore in 2020 to 27.0 crore in 2024, with loan value quadrupling from ₹1.15 lakh crore to ₹4.45 lakh crore. The share of NBFCs (Non-Banking Financial Companies) also rose marginally, indicating their continued relevance in reaching underserved segments through tech platforms.

Table.6. Internet &amp; Mobile Penetration Supporting Fintech Growth

Year	Internet Users (Cr)	Smartphone Users (Cr)	Rural Internet Penetration (%)
2020	70.0	50.0	34%
2021	78.0	55.2	39%
2022	87.0	62.0	44%
2023	95.0	68.5	48%
2024	102.5	74.0	52%

In the Table.6 supports the above trends by showing the enabling digital infrastructure. Internet users in India rose from 70

crore in 2020 to 102.5 crore in 2024, and smartphone users from 50 crore to 74 crore. Significantly, rural internet penetration increased from 34% to 52%, demonstrating how rural connectivity is bridging the digital divide and contributing to inclusive fintech growth.

Table.7. PMJDY - Bank Account Penetration (2020–2024)

Year	Total Accounts (Cr)	Rural Accounts (Cr)	Urban Accounts (Cr)	% Women Account Holders
2020	38.00	22.50	15.50	54%
2021	41.00	24.00	17.00	55%
2022	44.20	25.80	18.40	56%
2023	48.30	28.50	19.80	56%
2024	51.50	30.40	21.10	57%

In the Table.7 reflects the progress in bank account penetration under the Pradhan Mantri Jan Dhan Yojana (PMJDY). The total number of bank accounts increased from 38 crore in 2020 to 51.5 crore in 2024, highlighting the government's consistent efforts to expand financial access. Rural accounts showed significant growth from 22.5 crore to 30.4 crore, indicating that inclusion is reaching traditionally underserved areas. The share of women account holders rose from 54% to 57%, demonstrating improved gender inclusivity in the formal banking system.

Table.8. Digital Transactions &amp; Mobile Banking Usage (2020–2024)

Year	UPI Transactions (Bn)	UPI Value (₹ Lakh Cr)	Mobile Banking Users (Cr)
2020	12.5	21.3	30.2
2021	22.0	41.0	35.5
2022	45.6	84.2	41.0
2023	74.0	139.2	48.5
2024	96.2	175.4	55.0

It clear Table.8 shows a dramatic rise in digital transaction activity and mobile banking adoption. UPI transactions rose sharply from 12.5 billion in 2020 to 96.2 billion in 2024, and the total value of these transactions grew from ₹21.3 lakh crore to ₹175.4 lakh crore during the same period. Mobile banking users increased from 30.2 crore to 55 crore, confirming widespread adoption of mobile-based financial services and reflecting India's transition toward a digitally enabled financial ecosystem.

Table.9. Aadhaar Seeding &amp; Direct Benefit Transfers (DBT) (2020–2024)

Year	Aadhaar-linked A/Cs (Cr)	DBT Transfers (₹ Lakh Cr)	DBT Beneficiaries (Cr)
2020	112.0	13.89	63.5
2021	120.5	13.91	70.2
2022	130.2	15.10	75.8
2023	140.7	17.40	80.3
2024	148.9	18.75	84.7

To the Table.9 highlights the integration of Aadhaar with banking services and the efficiency of Direct Benefit Transfers (DBT). Aadhaar-linked accounts rose from 112 crore in 2020 to 148.9 crore in 2024, ensuring authenticated and targeted financial delivery. The total value of DBT transfers grew from ₹13.89 lakh crore to ₹18.75 lakh crore, and the number of DBT beneficiaries increased from 63.5 crore to 84.7 crore, showcasing the scale of government-to-person (G2P) transactions and enhanced welfare delivery.

Table.10. Access to Credit – MUDRA Loans (2020–2024)

Year	Loans Sanctioned (₹ Lakh Cr)	Beneficiaries (Cr)	% Women Beneficiaries
2020	3.8	6.12	69%
2021	4.5	6.45	68%
2022	5.4	6.81	69%
2023	6.3	7.20	70%
2024	7.1	7.65	70%

In the Table.10 presents the status of access to credit through the MUDRA loan scheme. Loans sanctioned increased from ₹3.8 lakh crore in 2020 to ₹7.1 lakh crore in 2024, and the number of beneficiaries rose from 6.12 crore to 7.65 crore. A consistently high share of women beneficiaries (around 70%) illustrates the scheme's contribution to women's financial empowerment and entrepreneurship.

Table.11. Rural Banking Access Points (2020–2024)

Year	Rural Bank Branches ('000)	Rural ATMs ('000)	Banking Correspondents (Lakh)
2020	52.0	39.1	5.1
2021	52.8	39.8	5.6
2022	53.4	40.2	6.0
2023	54.0	40.9	6.5
2024	55.2	41.6	7.0

The Table.11 emphasizes the expansion of rural financial infrastructure. Rural bank branches increased from 52,000 in 2020 to 55,200 in 2024, and rural ATMs rose from 39,100 to 41,600. The number of Banking Correspondents (BCs) grew substantially from 5.1 lakh to 7.0 lakh, which reflects the growing reliance on last-mile delivery agents to promote financial access in remote and underserved areas.

## 6. CONCLUSION

The study concludes that financial technology (FinTech) has played a transformative role in advancing financial inclusion in India between 2020 and 2024. With innovations such as UPI,

mobile banking, Aadhaar-enabled services, and MUDRA loans, FinTech has significantly increased access to financial services for previously underserved populations, particularly in rural areas and among women. The steady growth in digital transactions, Aadhaar-linked accounts, and banking correspondents reflects a positive trend toward inclusive economic participation. However, challenges like digital literacy, data security, and infrastructure gaps still need to be addressed through effective policy interventions. Overall, FinTech continues to act as a key enabler in achieving the broader goal of inclusive and sustainable financial development in India.

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