

DIGITAL FINANCIAL INCLUSION AND INCLUSIVE ECONOMIC DEVELOPMENT IN INDIA: EVIDENCE FROM STATE-LEVEL DATA

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Abstract: The financial inclusion is a significant part of India's development agenda as bank accounts, interoperable digital payments and technology-enabled credit can lower transaction costs and bring in the formal financing system. However, national expansion of digital transactions does not necessarily indicate an even distribution of access and outcomes across states, nor does it mean that all states are equally effective. In this paper, the authors explore the connection between bank access, use of digital payments, and formal credit and regional development on the basis of secondary data. It is based on publications and datasets that have been published from 2023 onwards from the Reserve Bank of India (RBI), Department of Financial Services (DFS), National Payments Corporation of India (NPCI), Ministry of Finance, National Statistical Office (NSO) and other public institutions. There are three aspects distinguished in the analytical framework: access, active use, and service quality and economic results. It suggests a panel-level approach at the state level across banking infrastructure, account inclusion, digital payment intensity and credit indicators, and per-capita income, employment, and enterprise development and poverty-related outcomes. Financial inclusion and digital payments have continued to improve as per recent official data, such as an RBI Financial Inclusion Index of 67.0 in March 2025, and the growth of retail digital payments. Comparisons across the states, however, should take into consideration the differences in the population, urbanization, internet connectivity, levels of literacy, industrial structure and provision of public services. The paper concludes that digital finance can foster inclusive development if payment access is secure, credit is effective and is not unaffordable, and consumers are shielded from fraud, exclusion and excessive debt. This ends with a reproducible empirical design and policy priorities for mitigating geographical and social inequalities.

Keywords: Digital financial inclusion; inclusive development; India; state-level data; digital payments; UPI; banking access; formal credit; regional inequality

1. Introduction

Financial inclusion is defined as the ability of households and firms to access and utilize suitable and accessible financial services. The policy agenda in India has now become more associated with the access to traditional banking services and digital public infrastructure, mobile payments, electronic benefit transfers, and technology-enabled credit. These can reduce the expense of payment, income collection, saving and accessing government programs. They can also enhance the visibility of the cash flows of small businesses, which can facilitate a formal credit assessment. This developmental question isn't just about the volume of digital transactions, but about how they help households and enterprises in various social groups and states.

The financial inclusion strategy of India is a mix of bank account access, payment infrastructure, financial literacy and priority sector lending and digital delivery. The Financial Inclusion Index (FI-Index) by RBI combines the three pillars of access, usage and quality of financial products and services, providing a comprehensive indicator of advancement in financial inclusion, and not just a count of accounts. It has risen to 67.0 in March 2025 from 64.2 in March 2024, with all sub-indices showing a positive trend (RBI, 2025a). The RBI also reports on the promotions made to spread financial literacy and village-level banking access and credit to micro, small and medium enterprises (MSMEs) in its annual reports (Reserve Bank of India, 2025b).

The digital payment system has grown rapidly. According to official data, retail digital payment transactions hit 22167.90 crore with a value of ₹849.12 lakh crore and UPI accounted for around 81 per cent of the total transactions in financial year 2024–25 (Ministry of Finance, 2026a). The RBI Digital Payments Index (RBI DPI) increased to 465.33 in September 2024, from 100 in March 2018, signifying significant improvement in payment infrastructure and performance (Reserve Bank of India, 2025c). While these national indicators provide the context for the scale of transformation, there is significant variation in infrastructure, adoption, and service reliability and economic opportunity at the national level.

State-level analysis is crucial because of the diverse characteristics of the Indian states, such as income, urbanization, demographic makeup, internet usage, bank branch density, industrial makeup and administrative strength. Increased volume of digital payments in a particular state can be due to a higher rate of formal-sector activity or urbanization, rather than better access to digital payments. Similarly, a large number of bank accounts does not necessarily constitute active use or regular saving or significant access to credit. A development-oriented assessment must then distinguish between the nominal use of information and sustained use as well as link financial indicators with economic outcomes.

This paper attempts to explore the linkage between the concepts of digital financial inclusion and inclusive economic development in India with secondary data. It emphasizes access to banking services, digital transactions and formal credit and regional development results. It builds a conceptual structure, summarizes the latest policy and statistical evidence, outlines state-level empirical approach, considers measurement and identification issues, and outlines policy interventions appropriate to various regional characteristics. No synthetic observations are added or fake state level data is added; the empirical section is meant to be implemented using real official data.

2. Research Objectives and Questions

The prime goal is to understand the relationship between the availability of banking, use of digital payment and formal credit with inclusive economic growth in Indian states. The specific goals are to explore the impact of financial infrastructure changes since 2022; identify appropriate indicators of financial access, use and quality at the state level; create an empirical strategy that can be replicated to assess regional variation; understand the potential channels through which digital finance can impact household welfare and enterprise activity; and provide policy guidance on the challenges and opportunities of recent evidence. The study has four research questions that are addressed. First, let's discuss how financial inclusion and digital payment indicators have changed in India since 2022? Let's first talk about how indicators for financial inclusion and digital payment have changed in India since 2022? Second, how is state-level variation in banking access tied to development indicators, and how is state-level variation in intensity of digital payments tied to indicators of banking access? Third, is formal credit access a viable channel for digital finance and enterprise and household outcomes? Fourth, what are the conditions of infrastructure and capabilities, and of consumer protection, required for digital financial inclusion to create inclusive development?

3. Literature and Policy Context

3.1 Financial inclusion as a multidimensional concept

Bank account ownership is not enough to measure financial inclusion. Access involves having a service physically available or not, Use involves having an account or product in use or not, Quality involves suitability, affordability, reliability, transparency and consumer experience. This multidimensional approach is adopted in the RBI's FI-Index to provide a comprehensive assessment that combines indicators from the banking sector, investment sector, insurance sector, and the postal and pension sector (Reserve Bank of India, 2024a). The framework is also comparable to state comparisons, but the nationally reported index shouldn't be assumed to be a ready-made state level dependent variable without consistent state level values.

Targeted programmes are aimed at enhancing financial inclusion in the less-served districts, and, according to the Department of Financial Services, are used to offer digital banking services to the customers who require assistance in accessing it. The Digital Banking Units are designed to provide self-service and assisted digital banking, acknowledging the ongoing requirement for customer support in tandem with technology (Department of Financial Services, 2025a). It is crucial because the presence of an interface does not imply that users are able to navigate and independently solve any failures of a digital service.

3.2 Digital payments and economic participation

Digital payments can help save time and money in transactions, enable e-commerce and speed up payments. UPI offers unified, instant payment solutions which can be leveraged by consumers, merchants, and service providers. It is noted that such growth in digital payments retail has been observed and UPI has accounted for a significant proportion of transactions in the government reporting (Government of India, 2026a). Payment infrastructure, agents, institutions and policy are also crucial determinants of the digitalization process, as noted in the RBI's analysis (Reserve Bank of India, 2024b).

But, transaction volume does not equal inclusion. If there is a small number of users, or a high number of valuable business transactions, then aggregate totals can be multiplied. Per-capita transaction measures, merchant acceptance, active-user rates and the geographic distribution of payment acceptance offer more informative metrics. Availability of digital payments should also be differentiated from their effective use amongst rural households, women, older people, and small merchants.

3.3 Digital payments and credit access

The digitally recorded transactions can provide a verifiable Cash-flow history which can be used by the lender in addition to conventional credit information. This could facilitate economic activity for some microenterprises and for borrowers who are new to credit. The Economic Survey 2025-26 highlights the significance of bank account penetration and affordable connectivity, and provides evidence of the connection between digital payment layers and formal credit access (Ministry of Finance, 2026b). This is a potential mechanism, but not a guaranteed one: the data on payments may be incomplete, and the data on repayment capacity is subject to instability and may be incomplete; cash-based businesses are not necessarily recorded digitally.

Other factors that impact formal credit outcomes include lender risk appetite, collateral needs, credit guarantees, borrower awareness and local economic opportunities. As per RBI reporting, MSME credit is a policy priority and there has been an increase in outstanding bank credit to MSMEs (Reserve Bank of India, 2025b). To be sure, a good study should look at credit indicators as separate, and not presume that an increase in digital payments automatically leads to an increase in productive lending.

3.4 Regional inequality and digital capability

Digital finance is embedded in broader economic and social functions. Those states with the strongest

electricity, telecommunications, transport and education and public administration sectors will be more likely to adopt digital services faster. The formalization of businesses and concentration in the urban area may also lead to an increase in digital payments. On the other hand, poor connectivity in remote locations, low agent availability and liquidity, language barriers and higher transaction failure resolution expenses can be barriers. This technology can then have unequal impacts unless delivery systems are tailored to local needs.

These differences can be provided context using national surveys and government reports. Household and labour data from the National Statistical Office can be used to describe the consumption, employment and demographic variation, while state domestic product series can be used to describe state economic outcome measures that are analogous to consumption and employment data (Ministry of Statistics and Programme Implementation, 2024a; 2025a). Sources of data should be matched by year, geographic unit and definition prior to estimation.

4. Conceptual Framework

The paper approaches digital financial inclusion as a series of interlinked but separable aspects. The first is access – being able to access bank branches, business correspondents, banking outlets, mobile connectivity and payment acceptance. The second is usage: active account usage, frequency of digital transactions, merchant payments, receipt of government transfers and paying bills through digital channels. The third is financial depth – availability of formal savings, insurance and credit products. The fourth is service quality and capability: reliability, affordability, grievance redress, financial literacy and accessibility and protection from fraud. Economic outcomes of inclusive development include state per-capita income, employment quality, MSME activity, household consumption and a decrease in regional disparities.

It is hypothesized that reliable access will have two consequences: transaction costs are lowered and it becomes more convenient to receive and make payments. Digital records can enhance business accounting and benefit of those who qualify to build a cash-flow history. There may be some formal saving and credit that can reduce volatility of consumption, finance working capital and facilitate investment. Government transfers via formal accounts can help to minimize leakage and deliver greater timeliness, though its impact will rely on the rate of successful authentication and access to cash-out points and grievance mechanisms. With the assistance of competition and appropriate products and consumer protection, these mechanisms can increase productivity and resilience.

Moderators are also determined in the framework. Internet quality, smartphone access, digital literacy, gender norms, rurality, bank presence, state administrative capacity and economic structure can influence the relationship between digital finance and development. Association with the expected outcome is thus likely to vary depending on state and outcome. There could be a positive association between income and payment intensity, which might be causal association of digital finance to income, causal association of income to the adoption of payments, or a common effect of urbanization. These possibilities need to be taken into consideration when designing the empirical approach.

There are four hypotheses that can be used for analysis. All other things being equal, the higher the level of effective banking access the stronger the inclusive development outcomes in the states. H2: the more intense the implementation of digital payments, the higher the economic participation, taking into account the state characteristics and time effects. Formal credit availability is a potential transmission channel between DFI and enterprise related outcomes. H5: Connectivity, literacy and consumer-protection capacity have a greater influence on the relationship. These are statements that can be tested and not statements that have been proved by the descriptive evidence in this paper.

5. Data Sources and Variable Construction

5.1 Data sources

Secondary data has been used for the study, and the observation period has been defined based on the available consistent state level series published since 2023. Banking infrastructure, credit context, and financial inclusion and payment system context are available from the RBI database and annual reports. The RBI's banking statistics and Basic Statistical Returns provided on a State level basis can assist measures like branches, deposits and credit, based on uniform definitions. The RBI's Financial Inclusion Index and Digital Payments Index are good national indicators, and neither should be used as a state-level indicator unless there's a validated state series.

The Department of Financial Services offers the programme information, financial inclusion indicators and the Digi Dhan dashboard along with state-wise digital payment distribution per capita. The dashboard indicates that the state allocations may be impacted due to the reason that inconsistencies are there in the PIN code and IFSC mapping, and hence the figures on the dashboard should be interpreted carefully (Department of Financial Services, 2025b). The central bank, NPCI, releases statistics on the payment system, such as transactions volume and value. These data should be reported at the state level only if a consistent state classification is provided.

The development outcomes are available from the Ministry of Statistics and Programme Implementation, such as state domestic product and national accounts series. Indicators for the labour market can come from the PLFS, and those for household consumption and related measures come from official household surveys. Government scheme dashboards may be able to offer information on account opening, scheme benefits transferred and credit-linked schemes, but the numbers of schemes should not be interpreted as the number of beneficiaries unless the definition is checked. While the World Bank Global Findex can provide context to financial behavior and account ownership, the survey waves are not annual state-level panels.

5.2 Dependent variables

Inclusive economic development is a very general term and can be translated into various outcomes. However, state per-capita net state domestic product at constant prices may be a proxy for average economic performance; and indicators of employment-to-population ratio, female labour-force participation, regular wage employment and self-employment may be proxies for labour-market inclusion. Temporary consumption indicators can give a good approximation of material living standards in households. An alternative measure of enterprise activity, when definitions and extent of reporting are consistent between states, can be seen in MSME registrations, employment or credit outcomes.

There is no universal outcome for inclusion. More people could be earning more money per capita and not less, and more people could be working less or insecurely, and fewer women working, while also having more per capita income. Only after the transparent normalization, direction coding, and sensitivity analysis, can a composite outcome index be built. The primary outcomes should be separate outcome models; a composite measure may be used as a robustness check.

5.3 Independent variables

Banking access can be captured in terms of the number of branches per 100 adults, banking outlets or business correspondents per unit of population, deposit accounts per adult and the credit-deposit ratio. The study should differentiate between urban and rural coverage, wherever possible. Digital payment intensity can be measured based on state-attributed digital transactions per capita, UPI transactions per capita or digital transaction value relative to state output. Transaction counts and amounts should be reported separately as a large transaction may yield a high amount, even though it is not a large number of transactions.

Formal credit access can be proxied as bank credit per capita, credit to MSMEs compared to state output, priority-sector credit, or agricultural credit or credit-deposit ratios. Such measures reflect various facets of lending and should not be combined without justification. Digital capability controls may consist of use of the internet or broadband, internet or smartphone (where available), literacy, urbanization and electricity access. Other factors that are controlled are population density, state income, industrial composition, public expenditure and the proportion of agriculture workers.

5.4 Data cleaning and comparability

State boundaries and financial years or calendar years must be harmonized for all variables. UTs should be added only if the same indicators are provided, otherwise separately. Any monetary values used should be converted into real values with an appropriate deflator. Per capita measures should be based on population estimates for the year of the observation. There is a need to document missing observations and not routinely interpolate volatile payment or credit indicators.

State-wise payment dashboards could be based on transaction location, bank mapping or pin code allocation. It is important to note the underlying attribution method since the amount of transactions can be used to measure the residence of the merchant or beneficiary. Apparent growth due to changes in data coverage, bank reporting and programme definition. A source register should include publisher, table, unit, reporting period, extraction date, transformations and known limitations.

6. Research Methodology

6.1 Research design

This study is a quantitative and explanatory one that used secondary state-level data. The structure is preferred to be state-year panel based in which each observation corresponds to one state/Union territory in one year. Selecting the final period should not be done until you have checked the availability and consistency of all variables. Although a balanced panel is desired, an unbalanced panel could be accepted when the lack of balance is clearly explained and causes minimal selection bias. Finally, the paper does not claim that the model has been estimated, since the public indicators must be collected and harmonized prior to performing statistical testing.

6.2 Descriptive analysis

First phase should provide data on trends in banking access, digital payments and credit, and economic outcomes. But, the state ranks should be based on population adjusted indicators, not raw counts. Maps and charts may detect spatial clustering and scatterplots may determine if there is a positive association between states that have higher payment intensity and higher income, credit, or employment measures. The correlation or association found in descriptive statements does not constitute causal evidence. Outliers need to be compared to the original source tables and not just eliminated because of their extreme values.

6.3 Panel regression

A baseline model can be expressed as:

$$\text{InclusiveOutcome}_{it} = \beta_0 + \beta_1 \text{BankingAccess}_{it} + \beta_2 \text{DigitalPayments}_{it} + \beta_3 \text{FormalCredit}_{it} + \beta_4 \text{Controls}_{it} + \mu_i + \tau_t + \varepsilon_{it}$$

In this case, i represents a state and t represents a year; μ_i represents the year-invariant state features, τ_t represents the year-invariant shocks, and ε_{it} represents the error term. State fixed effects account for idiosyncratic industry differences that are likely to persist across the states. Changes in policy and technology across the country are captured by year fixed effects. Standard errors should be grouped together at the state level, but caution must be used with a relatively small number of states, and possibly small-sample corrections are needed.

The dependent variable needs to be estimated using different models for per-capital output, employment, female participation in the labour force, household consumption and enterprise outcomes. If distributions are very skewed, the digital payment variables can be transformed with the use of logs, but their zeros must be reported clearly. Access to banks and credit could be lagged to limit the simultaneousness, but the lags do not constitute causality.

6.4 Identification and robustness

One of the main dangers is reverse causality – higher income states might be more inclined to implement digital finance sooner, not because of prosperity. Both may be influenced by factors omitted, like administrative capability, formal-sector concentration and connectivity. Analysis should thus be conditioned by results without any credible identification strategy unless such is available. Differences in differences around a clearly defined, staggered policy change, with suitable pre-trend and comparison group assumptions, may be extendible. Instrumental-variable should not be used unless the instrument is one that has an impact on digital finance but does not have an independent relationship to the outcome.

Robustness checks are needed to compare alternate payment measures, to use real economic outcomes (not nominal), to exclude one extreme observation at a time, and to check whether the results hold if large or highly urbanized states are excluded. The results should be examined for multicollinearity, serial correlation, heteroskedasticity and sensitivity to missing data. Interactions between digital payments and internet access, literacy/rurality should also be tested. Heterogeneity analysis can be used to compare high and low connectivity states while providing an understanding of continuous differences without arbitrary cut-offs.

6.5 Ethical and reproducibility considerations

The study does not require access to personal transaction records, since it is an aggregate secondary data study. Data should be referenced to the original publisher and derivatives should be reported. No individuals' identities or account information should be collected. The analysis should not include ecological fallacy; state-level results should not be interpreted as evidence of positive results for individual users who make digital payments. There is a need to store source files, extraction dates, scripts, transformation rules and a data dictionary to achieve reproducibility.

7. Evidence on Financial Inclusion and Digital Payments

7.1 National trends in financial inclusion

Data shows that financial inclusion has remained on the positive trajectory. The RBI's FI-Index increased from 64.2 in March 2024 to 67.0 in March 2025, citing usage and quality dimension and continued financial literacy efforts as drivers of the growth (Reserve Bank of India, 2025a). This pattern is significant because if expansion by usage and quality is a sign of deeper engagement than the number of account openings, then it could indicate more than a mere fraction of all users. However, this national composite score does not reveal if gains are distributed equally across states or across demographic groups.

RBI annual report (2024c) provides details of the development of ANTARDRISHTI dashboard for financial inclusion monitoring at national, regional, state and district levels and continued efforts towards providing universal access to banking services through the Centre for Financial Literacy initiative. The dashboard's regional variation functionality helps to justify disaggregated analysis. It also highlights the need for indicators to go beyond mere physical access to financial services and measure its quality and utilisation.

7.2 Expansion of digital payments

The volume of e-payments has grown significantly. According to the government data, the volume of transactions in the retail digital payments segment has increased from 7,176.90 crore in FY2021-22 to 22,167.90 crore in FY2024-25. The value of transactions grew from ₹457.44 lakh crore to ₹849.12 lakh crore during the same period (Ministry of Finance, 2026a). With approximately 81 per cent of retail digital payment volume in FY2024-25, UPI plays a crucial role in everyday digital payments. As of September 2024, the RBI Digital Payments Index has hit 465.33, up from the 100 baseline, compared to March 2018 (RBI, 2025c).

These are national numbers but with a note of care for interpreting the notion of growth. Transaction volume can increase due to more transactions from current users or when merchants accept digital payments, public transportation is transferred through accounts, or new users join. Both can't be used to determine which mechanism is dominant. Transactions value can also be determined by the prices and payments combination. Indicators at per-capita level, at merchant level, as well as active users and failed transactions would give a better assessment of inclusion.

7.3 Banking infrastructure and last-mile access

Even with the rise of mobile payments, physical banking infrastructure still plays a role. Users can deposit or withdraw cash, open new accounts, gain access to an account they had lost, and settle disputes through Bank branches, Business correspondents, ATMs and Assisted Digital banking. As per RBI's annual report for 2024-25, the village and hamlet coverage ratio for banking access within the stipulated distance-criterion had increased to 99.99 per cent as of March 2025, and ongoing work was being done to fill the remaining gaps (Reserve Bank of India, 2025b). But coverage is not the same as regular access; agent availability, cash liquidity, service hours and connectivity affect the ability of the facility to function at the right time.

Assisted delivery and Digital Banking Units can assist users who are not confident in self-service systems. According to the Department of Financial Services, these units offer self-service and digitally assisted modes, such as digital onboarding and credit-linked services (Department of Financial Services, 2025a). Where possible, the number of facilities should be aggregated with the indicators of usage, service reliability and travel-distance at the State level.

7.4 Formal credit and enterprise participation

Access to finance is an important interdependency with credit. While savings and payment accounts can facilitate transactions, productive investment may sometimes need working capital or longer-term funding at an affordable cost. It is reported that credit access for MSMEs has been considered as a policy priority by the RBI and there has been year-on-year growth in the outstanding credit of MSMEs for scheduled commercial banks in FY2024-25 (Reserve Bank of India, 2025b). Digital records can assist lenders with some small companies, but ultimately the decisions of whether and how to lend will depend on cash flow, business viability, risk, guarantees, and borrower information.

Government initiatives like the credit-linked support to street vendors and micro enterprises can make credit available to those who do not have a conventional credit history. The Economic Survey 2025-26 reports evidence of formal borrowing and adoption of digital payment in the context of PM SVANidhi and PMMY along with evidence of the role of income shocks and repayment performance. (Ministry of Finance, 2026b) The results of schemes should be examined, taking into account local economic demand, repayment terms, borrower characteristics, loan size and selection. Growth in the number of loans does not necessarily indicate a sustained improvement in livelihoods.

7.5 Regional variation

Payment indicators at the state level is available on the DigiDhan dashboard, such as per-capita distribution. An important limitation for ranking states noted on the dashboard is mismatches of PIN-code and IFSC mapping, which impact on the accuracy (Department of Financial Services, 2025b). The best method is to utilize such information in conjunction with other indicators in the state-level data set and to see if the results vary based on other indicators. Comparisons of state performance should be made against infrastructure and economic conditions. A large urban service sector can also have high payment intensity, resulting from the high intensity of payments per capita in urban areas, even if the number of accounts per capita and the intensity of benefit transfers in rural areas has increased. A few transactions might be centralized in commercial focus areas such as firms that are registered or payment systems that are processed. Therefore, information about urbanisation, per-capita income, internet use, composition of industries and access to rural banking services should accompany rankings.

8. Discussion

The evidence suggests that there are two different concepts: digitalisation and inclusion. Payment rails are used at national scale and payment growth is reflected by the Digital payment growth, and the FI-Index shows progress with a wider range of financial services. Both indicators alone do not confirm that digital finance has contributed to lessening the inequality at the state level. A state could have large transaction increases but also low credit and savings growth and low women's account usage and grievance redress. Scale and distribution are essential to inclusive development.

There are multiple pathways to the potential developmental benefits. First, households can benefit from making more efficient use of wages, pensions, remittances and public benefits by reducing transaction costs. Second, digital merchant payments could enhance bookkeeping and supply less risk of cash handling. Third, if the business doesn't have the typical documentation, cash flow records can help the lender to evaluate them. Finally, digital systems can be used to deliver financial services remotely where it is more expensive to have physical branches. These are only benefits that are contingent on having reliable networks, clear pricing and authentication, and support if the transaction fails.

The same systems can generate risks. Fraud, social engineering, hidden charges, unauthorised withdrawals, misuse of data and aggressive digital lending can erode trust. Low digital literacy users could be particularly vulnerable. The risk of biometric issues or connectivity problems can cause issues with accessing benefits, and sharing devices and language barriers can impact privacy and ease of use. Complaints, fraud losses, failed transactions, time to resolve disputes and user understanding should be added to the list of metrics that should be incorporated into a policy evaluation, along with policy adoption measures.

Patterns and policy priorities can be identified through a state-level modelling approach, but can't be substituted by micro-level evaluation. While the overall picture might suggest that the more states pay the more money is available for the poorest households, it will not be able to say whether this is the case for those households. There is a need to find out the gender, caste, age, disability, occupation and rurality-based distribution of the survey evidence and programme evaluations. Use administrative data judiciously as there could be variations in coverage and reporting between states.

The most robust analytical posture is thus "with modesty. Digital financial inclusion is not an adequate driver of inclusive development, but rather a potentially enabling infrastructure. Financial services' impact on economic outcomes is linked to access to productive opportunities, appropriate financial products, adequate credit availability and robust consumer protection. The thrust of state policy should be on increasing digital transactions, but also making the benefits accessible, safe and usable for the populations that are underserved.

9. Policy Implications

9.1 Move from account coverage to effective usage

Policy monitoring should be able to differentiate between opening accounts and existing accounts, between regular transactions and savings behaviour and between access to appropriate credit and non-access. State dashboards should include information on dormant-account rates, failed payment frequency, average distance to access cash, and agent availability and complaint resolution. Digital payment totals should be per capita and relative to economic activity when possible. This would minimise the chances of viewing transaction concentration as wide inclusion.

9.2 Target infrastructure gaps

In underserved rural, hilly, border and far flung areas connectivity, reliability of electricity, acceptance of payment should be increased. Business correspondents require regular payment, cash management assistance and guaranteed connectivity. Liquidity, the number of opening hours and the quality of service at local service points should all be monitored. Users who cannot use mobile applications safely and comfortably on their own should have access to assisted digital banking.

9.3 Link digital inclusion with productive credit

Digital payments must be linked with responsible credit assessment, saving, insurance and business support. Lenders may rely on the cash-flow information provided by the borrower, in addition to other information, in making decisions; but must make it clear how cash-flow is used and make it easy to appeal decisions. Financial products should accommodate the nature of small enterprises, that is, the nature of their revenue and working-capital cycles. The volume of credit should not be the sole measure of credit expansion, and credit outcomes, business survival, and productive investment and payments burden should be used to assess credit.

9.4 Strengthen digital and financial literacy

Financial education should cover real-life issues, such as: what to do if a payment is requested; how to check who they are making a payment to; how to keep a PIN safe; how to work out the cost of a loan; how to spot and report fraud; how to report unauthorised payments. Training to be provided in local languages via school, self-help groups, community organisations, bank correspondents and local government. Tailored delivery may be necessary for women, older adults, persons with disabilities and first-time users. The achievement of outcomes should be measured and not just attendance.

9.5 Improve consumer protection and accountability

Clear rules of liability, quick complaint mechanisms and swift dispute resolution are essential in the context of the rapid digitalization. Providers should ensure that the status of transactions and complaints procedures are explained. Data relating to failed transactions, fraud reports and the time taken to resolve them should also be made public on the public dashboards, but without compromising personal information. Digital lenders should provide details on the overall price of credit, the repayment plan, how the data will be used, and the repercussions of missing payments. The collection of data should be based on the principles of purpose limitation, security and consent.

9.6 Adopt state-specific strategies

States that have well-developed digital infrastructure, and poor credit outcomes could focus on responsible lending, enterprise formalisation and credit access. Other states with lower connectivity levels will need investment in networks, assisted banking services and agent coverage before having a quick surge in digital transactions. Complementary interventions on skills, childcare, mobility and access to productive assets may be needed in states with high payment activity, but low women's employment rates. There should be a uniform national target, but it should be backed by a locally identified priority and a clear indicator of progress.

10. Limitations and Future Research

There are some limitations in the paper due to the fact that there are not necessarily comparable indicators across state lines. Some widely cited indices are published on a national level instead of as state panels. The data for digital payments by states may be influenced by mapping and attribution problems. Financial inclusion indicators could have different definitions, populations and periods of reporting. There are many factors influencing outcome measures other than finance, including income and employment. Because of these limitations, the paper is not a quantitative estimate of causal effects, but rather a framework of research and evidence synthesis.

Future work should focus on the development of a harmonized state-year data set from verified source tables, and the creation of a data dictionary and the reporting of missingness transparently. Microdata might be utilized to investigate distribution by gender, income, caste, occupation and rurality. Analysis at the district level can reveal pockets of exclusion that are not evident in the state averages. Business impact and financial stress can both be measured by programme evaluations of the impact of digital credit. There is also a potential to build on this, for example by exploring the role of fraud, grievance redress, accessibility and digital capability in the context of long-term adoption.

11. Conclusion

The scope of digital financial inclusion has increased greatly in India, aided by banking outreach, payment system interoperability, public financial inclusion programmes and increasing digital acceptance. Official data reveals continued improvement in the RBI Financial Inclusion Index along with robust growth in retail digital payment transactions in recent times. These developments offer an opportunity to lower transaction costs, make payments easier and link some households and enterprises to formal financial services.

There is not a uniform and unconditional development implication. Access to accounts and the number of digital transactions do not necessarily imply credit is affordable or that services are being used or that services are reaching low-income and remote communities. Adoption and outcomes vary by region due to variation in infrastructure, level of literacy, urbanization, and economic structure. Access, usage, credit, quality and development indicators should therefore be aggregated into a state-level empirical analysis that appropriately includes state and year effects in the analysis and refrains from causal claims that are not justified by the design.

The main policy question is how to turn digital access into a secure, stable and profitable financial involvement. Digital finance can play a role in more inclusive economic development with state-specific investment in connectivity, assisted services, financial capability, responsible credit and grievance redress. The effectiveness of this transition should be measured by measurable improvements in economic participation and service quality, not on transaction growth.

Sources triangulation and reporting basis. The Programme and Policy context is cross-checked with the reports of the Department of Financial Services for the year 2022-23, 2023-24 and 2024-25 (Department of Financial Services, 2023; Department of Financial Services, 2024; Department of Financial Services, 2025a), with the Digi Dhan dashboard (Department of Financial Services, 2025b) and with the Economic Surveys for the years 2022-23, 2023-24, 2024-25 and 2025-26 (Ministry of Finance, 2023; Ministry of Finance, 2024a; Ministry of Finance, 2025a; Ministry of Finance, 2026b). The outputs and labour-market indicators are derived from the annual reports of the Periodic Labour Force Survey and the national accounts releases (Ministry of Statistics and Programme Implementation, 2023; Ministry of Statistics and Programme Implementation, 2024a; Ministry of Statistics and Programme Implementation, 2024b; Ministry of Statistics and Programme Implementation, 2025a; Ministry of Statistics and Programme Implementation, 2025b). The definitions and transaction series of payment systems are validated against

NPCI's annual reports and monthly statistics (National Payments Corporation of India, 2023, National Payments Corporation of India, 2024a, National Payments Corporation of India, 2024b, National Payments Corporation of India, 2025a, National Payments Corporation of India, 2025b). The data on banking and regulatory context is sourced from RBI annual reports, banking progress reports, financial inclusion releases and digital payment publications (Reserve Bank of India, 2023a; Reserve Bank of India, 2023b; Reserve Bank of India, 2024a; Reserve Bank of India, 2024b; Reserve Bank of India, 2024c; Reserve Bank of India, 2024d; Reserve Bank of India, 2025a; Reserve Bank of India, 2025b; Reserve Bank of India, 2025c). The World Bank's financial inclusion and macroeconomic resources (World Bank, 2023; World Bank, 2024) provide some guidelines for international comparability. They are the primary sources that are used as official statistical sources and policy references; certain state-level estimates are derived from harmonized source tables, not from national aggregates.

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