INCLUSIVE FINANCE INDIA REPORT 2024

EDITED BY
Ramesh Srivatsava Arunachalam

An ACCESS Publication

Inclusive Finance India Report 2024

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First published in 2024 by

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ACCESS Development Services
22, Ground Floor, Hauz Khas Village
New Delhi 110016

ISBN 978-81-955245-6-3

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List of Abbreviations

4P	Public, Private and People Partnership
ADB	Asian Development Bank
AePS	Aadhar enabled Payment
AIFI	All India Financial Institutions
ALEAP	Association of Lady Entrepreneurs in India
AML	Artificial Machine Learning
AMRUT	Atal Mission for Rejuvenation and Urban Transformation
ANBC	Adjusted Net Bank Credit
AP	Andhra Pradesh
APBS	Aadhar Payment Bridge System
APY	Atal Pension Yojana
ASF	Avaana Sustainability Fund
AWAKE	Association of Women Entrepreneurs in Karnataka
BA	Banking Agents
BBPS	Bharat Bill Pay System
BC	Banking Correspondents
BRLPS	Bihar Rural Livelihoods Promotion Society
BSBDA	Basic Savings Bank Deposit Account
CAR	Capital Adequacy Ratio
CAGR	Compound Annual Growth Rate
CBO	Community-Based Organisations
CBG	Compressed Bio Gas
CEBPP	Cultural Evolutionary Behavioural Public Policy
CFL	Center for Financial Literacy
CGFME	Credit Guarantee Fund for Micro Enterprises
CGTMSE	Credit Guarantee Fund Trust For Micro and Small Enterprises
CMEGP	Chief Minister's Employment Generation Programme
CMIE	Centre for Monitoring the Indian Economy
CMRC	Community Managed Resource Centre
CPHS	Consumer Pyramids Household Survey
CSC	Common Service Centre
CSOs	Community Service Officers
CSR	Corporate Social Responsibility
CWPP	Community Water Purification Plants
DAE	Direct Access Entities
DBT	Direct Benefit Transfer
DCCB	District Co-operative Central Bank
DFI	Development Financial Institutions
DSR	Debt-to-Disposable Income Ratio
ECLGS	Emergency Credit Line Guarantee Scheme
EDII	Entrepreneurship Development Institute of India
EDP	Entrepreneurship Development Programme
ESAF	Evangelical Social Action Forum
FINISH	Financial Inclusion Improves Sanitation and Health
FLC	Financial Literacy Center
FLDG	First Loan Default Guarantee

FMAP	Financing Mitigation and Adaption Projects
FPO	Farmer Producer Organisation
FY	Financial Year
GCF	Green Climate Fund
GDP	Gross Domestic Product
GESI	Gender Equality and Social Inclusion
IIBF	Indian Institute of Banking and Finance
IDBI	Industrial Development Bank of India
ICICI	Industrial Credit and Investment Corporation of India
IFAD	International Fund for Agricultural Development
IFC	International finance corporation
IFCI	Industrial Finance Corporation of India
IFP	French Institute of Pondicherry
IFSC	Indian financial System Code
IIT	Indian Institute of Technology
ILO	International Labour Organization
IME	Informal Micro Enterprises
IoT	Internet of Things
IPO	Initial Public Offer
ISC	India Sanitation Coalition
JJM	Jal Jeevan Mission
JLG	Joint Liability Groups
LFPR	Labour Force Participation Rates
LHI	Light House Initiative
LSTM	Long Short-Term Memory
LWM	Liquid Waste Management
MAVIM	Mahila Arthik Vikas Mahamanda
MEDP	Micro Enterprise Development Programme
MF	Microfinance
MFI	Microfinance Institution
MLD	Million Litres per Day
MSME	Micro, Small and Medium Enterprises
MSY	Mahila Samriddhi Yojana
MUDRA	Micro Units Development and Refinance Agency
NABARD	National Bank for Agriculture and Rural Development
NAPCC	National Action Plan on climate Change
NCD	Non-Convertible Debentures
NBFC	Non-Bank Financial Company
NGAI	Next Generation Artificial Intelligence
NIPL	NPCI International Payments Limited
NPA	Non-performing Asset
NPCI	National Payments Cooperation of India
NRLM	National Rural Livelihood Mission
NSFL	Nabsamruddhi Finance Limited
NULM	National Urban Livelihoods Mission
OCR	Optical Character Recognition
ODF	Open Defecation Free
ONDC	Open Network for Digital Commerce
OSS	One-Stop Shop
PACS	Primary Agricultural Credit Cooperative Societies
PAT	Performance, Achieve and Trade

PLFS	Periodic Labour Force Survey
PFSL	Pahal Financial Services Limited
PMEGP	Prime Minister's Employment Generation Programme
PMJAY	Pradhan Mantri Jan Arogya Yojana
PMJDY	Prahhan Mantri Jan Dhan Yojana
PMJJBY	Pradhan Mantri Jeevan Jyoti Bima Yojana
PMSBY	Pradhan Mantri Suraksha Bima Yojana
PoS	Point of Sale
PSB	Public Sector Bank
PSL	Priority Sector Lending
PTPFC	Public Tech Platform for frictionless Credit
Q1	First Quarter
QoQ	Quarter on Quarter
RBCDSAI	Robert Bosch Centre for Data Science and Artificial Intelligence
RBI	Reserve Bank of India
RNN	Recurring Neural Network
RRW	Rain Water Harvesting
RSETI	Rural Self Employment Training Institute
SBM	Swachh Bharat Mission
SC	Scheduled Caste
SCNL	Satin Creditcare Network Limited
SDG	Sustainable Development Goal
SEBI	Securities and Exchange Board of India
SECC	Socio Economic Caste Census
SFB	Small Finance Bank
SGSY	Swarnajayanti Grameen Swarojgar Yojana
SHG	Self Help Group
SHG-BLP	Self-Help Group–Bank Linkage Programme
SIBs	Sanitation Impact Bonds
SIDBI	Small Industries Development Bank of India
SLBC	State Level Bankers Committee
SME	Small and Medium Enterprise
SPV	Special Purpose Vehicle
SRFS	Sanghamithra Rural Financial Services
SRO	Self-Regulatory Organisation
ST	Scheduled Tribe
STEM	Science, Technology, Engineering, and Mathematics
STP	Sewage Treatment Plant
SVAMITVA	Survey of Villages and Mapping with Improvised Technology in Village Areas
TCO	Technical and Consultancy Organisations
UAP	Udyam Assist Platform
ULB	Urban Local Bodies
ULI	Unified Lending Interface
UNFCCC	United Nations Framework Convention on Climate Change
UN SDG 5	United Nation's' Sustainable Development Goal 5
VKP	Vazhndu Kattuvom Porject
VPA	Virtual Payment Address
W2AF	Water Access and Acceleration Fund
WASH	Water, Sanitation and Hygiene
WEP	Women Entrepreneurship Platform
WHO	World Health Organization
WSPF	Water and Sanitation Pooled Fund

Foreword

The Pradhan Mantri Jan-Dhan Yojana (PMJDY) launched in 2014 by the Hon'ble Prime Minister, is perhaps the most audacious, and ambitious programme globally to bring millions of unserved people in the country within the fold of formal finance. As per the World Bank's Global Findex Report, 2022 India has 78% of the adult population having bank accounts, making it among the most financially included country among the developing economies. PMJDY indeed brought tectonic and transformative shifts in the financial inclusion landscape, bringing true and tangible gains to millions at the bottom of the pyramid, giving them access to a host of financial services; easily standing out as among the most impactful programmes of the NDA Government.

This is the 10th year of the ambitious Pradhan Mantri Jan Dhan Yojana (PMJDY) with 540.3 million bank accounts opened as of November 2024 and over ₹ 2.37 trillion in deposits. The ground-breaking progress on leveraging DPI has enabled 'account inclusion' to evolve into 'payment inclusion' by helping to overcome the barrier of physical access and reducing transaction costs. The role of technology platforms and fintech to support this mission through tech-led tools is already evident from the multiple models being developed and tested. In October 2024 alone, UPI facilitated an astounding 16.58 billion transactions, with transaction values exceeding ₹23.50 trillion. Now is the time for financial institutions to optimise and leverage this base to design and deliver relevant financial products and services through partnerships and move the needle from inclusion towards financial resilience and well-being of customers.

The world's largest programme for promoting women's access to finance – the Self-Help Group (SHG) movement in India continues to grow and evolve with 14.42 million SHGs and 7.74 million credit linked groups across the country. Both the National Bank for Agriculture and Rural Development (NABARD) and the National Rural Livelihoods Mission (NRLM) need to be commended for this spectacular achievement. The future direction of the SHGs and the SHG federations should be to push harder with the bank linkages to promote the livelihoods of women and enhance incomes.

The micro, small, and medium enterprises (MSMEs) contributes 30% to GDP, 45% to exports in India's economy and employ over 22.94 million people as of November 2024. Despite their importance, MSMEs face a credit gap of ₹2–2.5 billion, limiting growth and innovation. Public sector banks (PSBs) focus on smaller MSMEs with steady credit flows, while private sector banks emphasize high-value loans. Digital lending platforms, leveraging Artificial Intelligence (AI) and alternative data, have enhanced credit accessibility, addressing gaps in traditional financing models.

India's journey towards financial inclusion has been marked by innovation, collaboration, and a relentless drive for progress, with digital payments serving as the foundation of this transformation. Reserve Bank of India's Digital Payment Index (RBI-DPI), the Financial Inclusion Index (FI-Index), and the Antardrishti Financial Inclusion Dashboard has played a crucial role in this drive of financial inclusion. This powerful triad captures and measures the impact of various initiatives while providing actionable insights to ensure financial services reach underserved populations, particularly in rural and economically challenged areas. These tools not only quantify progress but also empower stakeholders to address gaps, driving real-time advancements in accessibility and inclusion. The RBI-DPI, FI-Index, and Antardrishti Dashboard together enable comprehensive tracking and assessment, ensuring that digital financial services are accessible to

all segments of society. As India continues to expand its digital payment ecosystem, these indices remain critical in shaping a vision of inclusive economic growth where every individual, regardless of location or socioeconomic status, can participate fully in the nation's development.

Transformation of Financial Inclusion with the help of Next Generation Artificial Intelligence (NGAI) needs to be optimized to address issues related to lack of credit history and high transaction costs. Platforms like Credit Vidyaa and SBI YONO exemplify its success in extending credit to underserved populations, including farmers and gig workers. NGAI has also revolutionized credit processes like loan underwriting, warehouse receipt financing, and financial literacy education. Challenges such as data privacy, digital infrastructure gaps, and algorithmic bias remain noteworthy.

Climate finance initiatives such as Pay-As-You-Go solar systems and blended finance models that address the vulnerabilities of low-income population have shown an increasing trend during this year. Domestic resource mobilization through India's coal cess and green bond market has mobilized $15 billion by 2024, ensuring stable funding for climate resilience projects. Inclusive models like gender-responsive programs that empower women and community-based finance solutions are been promoted emphasizing the importance of localized approaches, stable policies, and innovative financial models to enhance resilience and foster sustainable development among vulnerable populations. Cross-sectoral partnerships, combining public and private resources, have amplified the reach of climate finance.

Water, Sanitation, and Hygiene (WASH) financing is playing an important role to address public health and socio-economic challenges. Successful initiatives like the Swachh Bharat Mission (SBM) and Jal Jeevan Mission have transformed India's WASH landscape, though significant financing gaps persist. Innovative mechanisms such as Sanitation Impact Bonds (SIBs) and Public-Private-People Partnerships (4Ps) to address the ₹20,000 crore debt demand among WASH MSMEs, of which only 16% is met by formal institutions, need to be pursued.

With foundational initiatives like the UPI, the Pradhan Mantri Jan Dhan Yojana, the Unified Lending Interface (ULI), AI-led financial inclusion solutions, robust digital public infrastructure and more, India is poised to lead the global narrative on financial inclusion.

The Inclusive Finance India Report continues to provide a comprehensive review of the progress of financial inclusion in the country, tracking performance, highlighting achievements, and flagging gaps and issues that need to be addressed at the levels of both policy and practice. It is a much-awaited annual reference document for policymakers, investors, practitioners, academia, and students, for data trends and insights on various thematic cuts pertaining to financial inclusion. The Report is sponsored by the Bill and Melinda Gates Foundation, Mastercard, SIDBI, NABARD, SBI, IDFC First Bank and Rabobank Foundation as long-term steadfast supporters. I would like to express my deep gratitude to all sponsors for their unstinted and continued association with this effort, without which it would not have been possible for ACCESS to bring out the Report year after year.

As always, ACCESS has been fortunate to have seasoned sector experts to help write the Report. I would like to thank Ramesh Arunachalam for agreeing to edit the Report for the second successful year along with authoring seven of the thirteen chapters. He has supported all the other Chapter authors with patience, offering suggestions on chapter structure, making editorial comments, and helping to bring the Report together as a cogent cohesive document. I also take this opportunity to thank all the chapter authors, for their diligent efforts and for providing great insights through their analysis and writing of their respective thematic chapters. I would like to thank N Srinivasan (Microfinance under Microscope); Gaurav Gupta (Banks and Financial Inclusion: Going Beyond the Obvious); Girija Srinivasan and team (SHG Bank Linkage Programmes - The Marathon Continues); Smita Premchander and team (Gender and Enterprise Finance: Reckoning with Status 2024); Dr Jeyaseelan (Emerging Water & Sanitation Financing Innovations in India: Challenges and Way Forward); and Indradeep Ghosh and team (Exploring the Phenomenon of Debt Distress & Possible Solutions) for their contributions.

Finally, I would like to thank my small team at the Inclusive Finance Secretariat for providing support in terms of data consolidation and analysis, copy editing, and coordination with the authors and printers, among others. The team, including Akash, Satyan, Shubham and Shilpa, has tirelessly worked to bring out a high-quality Report. My sincere gratitude and appreciation to the ACCESS CEO Vipin Sharma for his visionary leadership and his persistence in pushing the team for high standards of quality, and for his technical inputs and thinking through with the editor on this year's Report.

The 19th edition of the Inclusive Finance India Report will be launched at the 21st Global Inclusive Finance Summit being organised by ACCESS with the Department of Financial Services, Ministry of Finance, Government of India as the Co-host.

I hope the Report will serve the purpose of providing an insightful view of the 'state of the sector' in a ready reckoner form for use by a diversity of stakeholders and help in contributing to the agenda of universal financial inclusion in the country, as also serve as a knowledge document for other markets.

Sudipto Saha
Head - Financial Inclusion
(December 2024)

Preface and Overview

A TRANSFORMATIVE ERA IN INCLUSIVE FINANCE: INDIA'S AUDACIOUS JOURNEY

Financial inclusion is more than just a policy goal—it is a transformative force that empowers vulnerable, low-income, and excluded communities by providing access to a wide range of formal financial services at affordable costs. It serves as the bridge between economic exclusion and opportunity, unlocking equitable growth and shared prosperity. As India strives to achieve its ambitious goal of becoming a $5 trillion economy, addressing the financial barriers faced by millions is not just desirable—it is imperative.

This year's *Inclusive Finance India Report* stands as a definitive compendium, offering an intricate analysis of the multifaceted landscape of financial inclusion in India. From milestones achieved to enduring gaps, from ground breaking innovations to evolving policy frameworks, this report encapsulates it all. As the Editor of this volume, I have the privilege of presenting an overview of the nation's financial inclusion journey and outlining the road ahead.

India's financial inclusion revolution has been as profound as it has been understated, unfolding across the bustling lanes of town, cities, and rural landscapes. The most visible signs of this transformation are not found in boardrooms or bank branches but at the humblest street corners. Imagine tea stall owners, fish vendors, fruit sellers and others—small-scale entrepreneurs whose businesses once depended on cash transactions and the arduous task of finding exact change. Today, these informal enterprises proudly display sleek QR codes on their carts, symbolizing the democratization of digital payments. Customers from all walks of life engage seamlessly with these entrepreneurs, who, in turn, benefit from the efficiency and transparency of digital finance. What was once the domain of large corporations and tech-savvy urbanites has now been extended to the grassroots, integrating even the smallest enterprises into the national banking ecosystem. The linchpin of this extraordinary transformation is none other than India's trailblazing Unified Payments Interface (UPI). Launched as a visionary initiative by the National Payments Corporation of India (NPCI) and nurtured under the guidance of the Reserve Bank of India (RBI), UPI has evolved into a global gold standard for financial inclusion. What began as an ambitious experiment has now become a digital juggernaut. In October 2024 alone, UPI facilitated an astounding 16.58 billion transactions, with transaction values exceeding ₹23.50 trillion. This is financial inclusion in action—a dynamic, daily reality reshaping millions of lives.

India's financial inclusion story, however, extends far beyond UPI. The country's decade-long journey (2014–2024) offers invaluable lessons for the world. It is not merely a domestic success but a global call to action. As highlighted in this edition of the *Inclusive Finance India Report*, India's achievements in bridging financial gaps underscore the power of visionary leadership, innovative technologies, and user-focused design. Yet, the journey is far from complete. Persistent challenges remain, including gender disparities in financial access, gaps in financial literacy, geographic inequalities, climate adaptation and much more. However, with foundational initiatives like the UPI, the Pradhan Mantri Jan Dhan Yojana, the Unified Lending Interface (ULI), AI-led financial inclusion solutions, robust digital public infrastructure and more, India is poised to lead the global narrative on financial inclusion. And this is not just a moment of national

pride but a moment of global transformation—a catalytic event in the evolution of inclusive finance. India is setting benchmarks for others to follow, charting a path toward a future where growth and prosperity are universally shared.

To truly grasp this remarkable journey, the *Inclusive Finance India Report* explores 13 comprehensive chapters. Each chapter highlights a distinct aspect of financial inclusion, covering the progress achieved, the challenges that remain, and the lessons learned along the way. Additionally, each chapter provides a roadmap for policymakers, practitioners, and other stakeholders dedicated to making financial inclusion a universal reality. Let me introduce these chapters to you, one by one.

Chapter 1: *Microfinance Under the Microscope* by N. Srinivasan

This chapter provides a detailed examination of the microfinance sector's growth, challenges, and potential during FY 2023–24. The sector added 18.1 million new clients, resulting in a 26% growth in the loan portfolio and a total of 161 million active loan accounts. While the ratio of microfinance loans to non-food bank credit rose to 2.7% in March 2024, indicating robust growth, rapid expansion also posed risks. Portfolio quality improved, with loans overdue by 30–179 days (PAR30) dropping from 3.47% to 2.85%, though loans overdue for more than 180 days slightly increased, highlighting emerging challenges. The report underscores geographic concentration in some states, emphasizing the importance of diversification and prudent borrower selection.

MFIs maintained a dominant market share of 39.6%, recovering from past disruptions like demonetization and COVID-19. Operational expansion was notable, with branch networks growing by 22.4% and staff strength by 28%. However, rising financial costs led to margin declines, disproportionately impacting smaller MFIs. The chapter highlights the necessity for responsible lending, better governance, and the transition to individual lending models supported by technology integration.

Chapter 2: *Banks and Financial Inclusion: Going Beyond the Obvious* by Gaurav Gupta

Gaurav Gupta explores the role of banks in advancing financial inclusion by addressing underserved populations' diverse needs. The chapter focuses on the contributions of mechanisms like the State-Level Bankers' Committee and Rural Self-Employment Training Institutes (RSETIs), while addressing gaps in the system. Despite the limited availability of data, the author discusses the valuable yet 'intangible' roles played by these two important types of institutions.

Furthermore, this chapter argues in favour of intensifying efforts to broaden the financial system's inclusivity beyond basic bank account ownership. Banks don't have a robust and customer-friendly grievance redressal mechanism. Building on the increased reach of FLCs/ CFLs in rural areas, a similar programme is needed in urban areas to engage informal sector workers such as street vendors.

The author recommends measuring the success of PMJDY by how much incremental savings these accounts can encourage among account holders and how many account holders transition to full-service bank accounts. Efforts also need to be made towards graduation to the next level – accounts without overdraft to those with overdraft – and towards Mudra loans as the next step.

Chapter 3: *Marathon Run of SHG Bank Linkage Programme Continues* by Girija Srinivasan

This chapter provides an in-depth analysis of the Self-Help Group (SHG)–Bank Linkage Programme, which, as of March 2024, reached 14.42 million SHGs with savings accounts and 7.74 million credit-linked groups. Backed by NRLM, this program empowers grassroots communities and fosters financial inclusion. Credit disbursements increased by 44% to ₹2.09 trillion, predominantly benefitting women-led SHGs. However, regional disparities persist, with southern states dominating disbursements and inflation-adjusted loan sizes often falling short of livelihood capital needs.

NRLM's federated governance model has improved resource utilization and expanded SHG penetration across 745 districts, yet sustaining these gains requires enhanced governance and capacity-building initiatives. A shift toward individual enterprise financing is evident, with projects like SBI's Lakhpati Didi

aiming to uplift 30 million women by 2025. The chapter underscores the need for social, technical, and financial support to enhance the program's sustainability and impact while recommending legal reforms and digital tools for efficient resource management.

Chapter 4: *Exploring the Phenomenon of Debt Distress and Possible Solutions* by Dwijaraj Bhattacharya and Indradeep Ghosh

Taking the current concerns about debt distress in the microfinance sector as its background, this chapter makes two key contributions. The first is to present measures of debt distress from the borrower's perspective, which is a perspective that does not receive the careful attention that it deserves, from either policymakers or industry stakeholders. The chapter argues that in measuring debt distress from the borrower's perspective, the difficulty of deciding whether the borrower has intentionally invited distress upon themselves or not, necessitates a multidimensional approach to the measurement problem.

Some actual data is presented from one such multidimensional exercise. The second contribution is to reframe debt distress as a cultural problem rather than a purely economic or purely technocratic one. The cultural framing exposes and implicates perverse cultures on both sides of the market. The chapter describes each of these cultures, and shows how the culture on each side accentuates and amplifies the culture on the other side. This produces a mutually reinforcing vicious cycle of over-lending on the lender's side and loan churning on the borrower's side. With time, the problem only worsens until crisis intervenes as a necessary and tragic correction.

Chapter 5: *MSME Financing in India: Driving Inclusive Growth and Economic Resilience* by Ramesh Srivatsava Arunachalam

This chapter examines the critical role of micro, small, and medium enterprises (MSMEs) in India's economy, contributing 30% to GDP, 45% to exports, and employing over 22.94 million people as of November 9, 2024. Despite their importance, MSMEs face a credit gap of ₹20–25 lakh crore, limiting growth and innovation. Public sector banks (PSBs) focus on smaller MSMEs with steady credit flows, while private sector banks emphasize high-value loans. Digital lending platforms, leveraging AI and alternative data, have enhanced credit accessibility, addressing gaps in traditional financing models.

Government initiatives, including PMMY and CGTMSE, have supported financing needs, with PMMY extending credit to over 71% women entrepreneurs. MUDRA and SIDBI play a pivotal role in refinancing. They support digital platforms like Udyamimitra, which streamline MSME financing. However, smaller MSMEs face persistent challenges, including high interest rates and reliance on informal credit. The chapter emphasizes the importance of tailored financial products, risk management, and collaborative policymaking to address these barriers and sustain MSME-driven growth.

Chapter 6: *Small Finance Banks in India: Powering Financial Inclusion* by Ramesh Srivatsava Arunachalam

This chapter highlights the transformative role of Small Finance Banks (SFBs) since their inception in 2016, focusing on bridging financial inclusion gaps for unbanked and underbanked populations. Initially established to prioritize small-ticket loans and priority sector lending (PSL), SFBs have demonstrated resilience through three growth phases: foundational years (2017–2019), the challenge phase (2019–2021), and the growth phase (2021–2024). During this period, SFBs diversified their portfolios, enhanced geographic outreach, and leveraged digital tools to improve efficiency and profitability.

Despite their successes, SFBs face vulnerabilities, including exposure to unsecured loans and competition from traditional banks. The chapter underscores the importance of balancing financial inclusion goals with operational sustainability. By adopting advanced technologies, fostering FinTech partnerships, and expanding urban outreach, SFBs are poised to play a critical role in India's financial ecosystem. However, the challenges of cybersecurity, regulatory compliance, and cost management must be addressed to ensure long-term success and scalability.

Chapter 7: *Climate Adaptation and Mitigation Finance for Low-Income Populations in India: A Comprehensive Analysis (2014–2024)* by Ramesh Srivatsava Arunachalam

This chapter explores targeted climate finance initiatives that address the vulnerabilities of low-income populations dependent on climate-sensitive sectors like agriculture and fisheries. Innovative financing mechanisms, such as Pay-As-You-Go solar systems and blended finance models, have made sustainable technologies accessible to underserved communities. Domestic resource mobilization through India's coal cess and green bond market mobilized $15 billion by 2024, ensuring stable funding for climate resilience projects.

The chapter highlights inclusive models like gender-responsive programs that empower women and community-based finance solutions. Cross-sectoral partnerships, combining public and private resources, have amplified the reach of climate finance. The chapter concludes with lessons from India's experience for climate mitigation and climate adaptation finance, emphasizing the importance of localized approaches, stable policies, and innovative financial models to enhance resilience and foster sustainable development among vulnerable populations.

Chapter 8: *Gender and Enterprise Finance: Reckoning with Status 2024* by Akanksha Shreya, Suki Iyer, Krupa Sriram, and Smita Premchander

The chapter explores the intersection of gender dynamics and financial inclusion, highlighting the barriers that women face in accessing financial resources and making informed entrepreneurial decisions. The methodology followed is secondary research as well as primary research through interviews with key stakeholders. The chapter emphasizes the socio-cultural norms, systemic biases, and economic inequalities that limit women's participation in formal financial systems. It also critically examines the prevailing targeted interventions like microfinance programs, financial literacy initiatives, and gender-sensitive policies aimed at empowering women economically. Drawing on case studies, the chapter underscores how enhancing women's access to finance not only improves individual livelihoods but also drives broader socio-economic development, concluding with recommendations for creating inclusive, equitable financial ecosystems.

This chapter emphasizes women's access to credit as a cornerstone of economic empowerment and points out that women-led MSMEs constitute 20.5% of total registered MSMEs, showcasing significant contributions to employment and GDP. However, the chapter argues that systemic barriers like unequal asset ownership, higher interest rates, and limited financial literacy restrict their growth. It furthermore suggests that while government schemes such as Mudra Yojana and SHG-BLP have partially addressed these gaps, yet women entrepreneurs still face a $158 billion financing gap.

The authors recommend leveraging digital tools, one-stop shops like WE Hub, and innovative credit assessments based on SHG histories to bridge gaps in enterprise finance for women. They highlight the importance of gender-responsive financial products and formalization of women-led enterprises to drive inclusive growth. Collective empowerment through SHGs and technology-enabled solutions are presented as scalable strategies to enhance women's financial inclusion and socio-economic participation.

Chapter 9: *Unlocking Financial Inclusion Through Next-Generation Artificial Intelligence (NGAI)* by Ramesh Srivatsava Arunachalam

This chapter explores the potential of NGAI to transform financial inclusion by addressing barriers like lack of credit history and high transaction costs. Unlike conventional AI, NGAI leverages unstructured data from sources such as mobile payments and satellite imagery to create alternative credit scoring models. Platforms like Credit Vidyaa and SBI YONO exemplify its success in extending credit to underserved populations, including farmers and gig workers.

NGAI has also revolutionized processes like loan underwriting, warehouse receipt financing, and financial literacy education. Challenges such as data privacy, digital infrastructure gaps, and algorithmic bias remain significant. The chapter underscores the need for robust collaboration among stakeholders to maximize NGAI's potential in creating an inclusive financial ecosystem tailored to India's diverse needs.

Chapter 10: *The Antardrishti Dashboard, Financial Inclusion Index and Digital Payments Index: India's Experience in Tracking and Measuring Traditional and Digital Financial Inclusion* by Ramesh Srivatsava Arunachalam

India's journey toward financial inclusion has been marked by innovation, collaboration, and a relentless drive for progress, with digital payments serving as the cornerstone of this transformation. Chapter 10 highlights the pivotal role played by the Reserve Bank of India's Digital Payment Index (RBI-DPI), the Financial Inclusion Index (FI-Index), and the Antardrishti Financial Inclusion Dashboard. This powerful triad captures and measures the impact of various initiatives while providing actionable insights to ensure financial services reach underserved populations, particularly in rural and economically challenged areas. These tools not only quantify progress but also empower stakeholders to address gaps, driving real-time advancements in accessibility and inclusion.

This chapter stands as a testament to the effectiveness of data-driven strategies, innovative policies, and public-private collaboration in advancing India's financial inclusion agenda. The RBI-DPI, FI-Index, and Antardrishti Dashboard together enable comprehensive tracking and assessment, ensuring that digital financial services are accessible to all segments of society. As India continues to expand its digital payment ecosystem, these indices remain critical in shaping a vision of inclusive economic growth where every individual, regardless of location or socioeconomic status, can participate fully in the nation's development.

Chapter 11: *The Unified Payments Interface (UPI): India's Game-Changing Instant Digital Payment System* by Ramesh Srivatsava Arunachalam

This chapter chronicles the transformative journey of UPI from its 2016 launch to its dominance in India's digital payments ecosystem by 2024. UPI's seamless interoperability across banks, robust security features, and user-friendly design have revolutionized transactions, making it a cornerstone of financial inclusion. By July 2024, UPI processed over 14 billion monthly transactions, democratizing payments for low-income and rural users.

The chapter also examines UPI's global expansion into markets like Bhutan and Singapore, positioning it as a model for real-time payment systems. Challenges like cybersecurity threats and limited digital literacy are acknowledged, with solutions including AI-driven voice-led payment systems and improved rural connectivity. UPI's success highlights the importance of strategic policy interventions, ecosystem collaboration, and continuous innovation, providing a roadmap for other nations to replicate its impact on digital and financial inclusion.

Chapter 12: *A Decade (2014–2024) of Digital Financial Inclusion: Key Pillars of and Lessons from the Indian Experience* by Ramesh Srivatsava Arunachalam

This chapter provides an overview of India's efforts to bridge financial exclusion over the past decade. Key initiatives such as Aadhaar, the Pradhan Mantri Jan Dhan Yojana (PMJDY), and the Unified Payments Interface (UPI) formed the foundation of a robust digital financial ecosystem. By FY 2023–24, PMJDY had opened 531.5 million accounts, many linked to Aadhaar and UPI, enabling seamless direct benefit transfers and fostering economic empowerment.

The role of complementary platforms like AePS, Bharat BillPay, and Open Credit Enablement Network (OCEN) is also discussed in expanding access to financial services. Challenges such as digital literacy gaps and infrastructure limitations in rural areas remain barriers. The chapter underscores the importance of visionary leadership, user-centric design, and public-private collaboration in sustaining this progress, offering a replicable model for global financial inclusion.

Chapter 13: *Emerging Water & Sanitation Financing Innovations in India: Challenges & Way Forward* by Dr. Jayaseelan

This chapter delves into the critical role of financing for Water, Sanitation, and Hygiene (WASH) services in addressing public health and socio-economic challenges. Successful initiatives like the Swachh Bharat Mission (SBM) and Jal Jeevan Mission are highlighted for transforming India's WASH landscape, though significant financing gaps persist. Innovative mechanisms such as Sanitation Impact Bonds (SIBs) and Public-Private-People Partnerships (4Ps) are proposed to address the ₹20,000 crore debt demand among WASH MSMEs, of which only 16% is met by formal institutions.

The chapter emphasizes the importance of gender-responsive models, community-led interventions, and technical innovations like IoT-based monitoring systems to enhance WASH infrastructure. Policy recommendations include dedicated sub-limits for WASH under Priority Sector Lending and expanded municipal bond frameworks. A multi-stakeholder approach combining public, private, and community efforts is deemed essential to scaling WASH access sustainably, ensuring climate resilience and equitable development.

The Grand Tapestry of Financial Inclusion: A Symphony of Innovation and Empowerment

India's transformative journey toward financial inclusion is a compelling saga of vision, perseverance, and innovation. It demonstrates the power of collective action to reshape socio-economic landscapes, bridging systemic gaps and creating pathways for equitable growth. Across the chapters, a narrative unfolds of how technology, policy, and grassroots participation have harmonized to empower millions, redefine financial systems, and elevate the nation's global standing. This is not merely a story of numbers and accounts; it is a chronicle of human resilience and aspiration, underscoring that true inclusion transcends access—it is about creating opportunities, enabling dignity, and fostering hope.

1. Financial Inclusion: The Foundation of National Progress

Financial inclusion is not just about opening bank accounts; it is about weaving the excluded into the nation's economic fabric. Programs such as the **Pradhan Mantri Jan Dhan Yojana (PMJDY)**, which has brought over **531 million accounts** into the fold, represent a monumental leap toward economic equality. Beyond the numbers, these accounts symbolize trust, empowerment, and the first steps toward financial independence for millions in underserved regions. Complemented by microfinance, which added **18.1 million clients in FY 2024**, this ecosystem has driven significant progress in bridging socio-economic disparities.

But inclusion is not merely an act of charity—it is an economic imperative. By enabling access to savings, credit, insurance, and pensions, financial inclusion unlocks human potential, fosters entrepreneurial spirit, and anchors communities against economic uncertainties. The initiative is foundational to building a resilient nation where growth is not concentrated but shared.

Lesson: Financial inclusion is the cornerstone of national progress, creating economic opportunities and fostering equity across diverse demographics.

2. Growth With Caution: Balancing Expansion and Sustainability

India's financial systems have achieved remarkable expansion, but unchecked growth can risk destabilization. The rapid rise of credit in some states underscores the dangers of over-saturation, while the **2.09 trillion loan disbursement to Self-Help Groups (SHGs)** highlights the need for strategic allocation to support livelihoods effectively. Inflation-adjusted loan sizes reveal a pressing need to recalibrate disbursements for meaningful impact.

Sustainable financial inclusion requires vigilance. Institutions must focus on maintaining portfolio quality, diversifying geographic outreach, and safeguarding borrowers from over-indebtedness. It is not just about numbers; it is about the quality and longevity of impact.

Lesson: Sustainable growth lies in balancing ambition with prudence, ensuring financial ecosystems expand responsibly and inclusively.

3. Technology as the Great Equalizer

Technology has transformed the way financial systems operate, making them accessible and efficient for all. Innovations like the **Unified Payments Interface (UPI)**, which in October 2024 processed **16.58 billion (monthly) transactions**, have democratized payments and brought the unbanked into the fold of the digital economy. Technologies such as AI and IoT have redefined credit scoring and loan underwriting, enabling access for farmers, gig workers, and small enterprises previously excluded from formal finance.

This digital revolution is not just a leap forward—it is a leveling field. It bridges rural-urban divides, simplifies complex systems, and ensures that underserved populations are not left behind. Technology has become the alchemist of financial systems, converting exclusion into empowerment.

Lesson: Technology, wielded with intent and inclusivity, transforms financial systems into engines of equity and growth.

4. Women as Catalysts of Change

Women are not merely participants in India's financial inclusion narrative; they are central to its success. Programs like "**Lakhpati Didi**," which aims to empower **25 million women by 2025**, epitomize the transformative power of female-led economic initiatives. Women-led SHGs, contributing **58% of total SHGs**, exemplify how grassroots movements can drive large-scale social change.

Women are proven to be reliable borrowers and impactful contributors to community welfare. Financial inclusion for women goes beyond economic benefits—it uplifts entire families and communities, creating a ripple effect of empowerment.

Lesson: Women-centric financial systems are not only equitable but also transformative, fostering development that benefits entire communities.

5. MSMEs and SFBs: Pillars of Economic Resilience

Micro, small, and medium enterprises (MSMEs) and **Small Finance Banks (SFBs)** are the backbone of India's financial inclusion efforts. MSMEs, which contribute **30% to GDP** and employ millions, are critical to local economies but face a credit gap of **20–25 lakh crore**. Instruments like the **Trade Receivables Discounting System (TReDS)** and the Small Industries Development Bank of India (SIDBI) provide crucial support, enabling these enterprises to thrive.

SFBs, with their mandate to serve underserved populations, have redefined rural and urban financial ecosystems. Their near **208% net profit growth from 2021 to 2024** showcases their resilience and adaptability in addressing the unique needs of marginalized communities.

Lesson: Supporting MSMEs and specialized banks is essential to fostering resilient, inclusive economies that thrive on diversity and local enterprise.

6. Climate Finance: A Pathway to Sustainable Development

India's approach to climate finance blends innovation with equity. By mobilizing over $15 billion through green bonds, the nation has addressed vulnerabilities in climate-sensitive sectors such as agriculture. Grassroots initiatives like solar-powered irrigation and community-led water management exemplify how sustainable solutions can empower rural populations.

Climate finance is about more than environmental stewardship—it is about ensuring that marginalized communities can adapt to a changing world. India's gender-responsive approaches amplify the impact, placing women at the forefront of sustainable development.

Lesson: Climate finance must prioritize inclusivity, enabling vulnerable communities to lead the way in sustainable transformations.

7. Real-Time Data: The Guiding Compass of Progress

The deployment of real-time data tools like the Antardrishti Dashboard and Digital Payments Index (DPI) has revolutionized India's approach to tracking financial inclusion. These tools allow policymakers to identify regional disparities, understand demographic usage patterns, and craft targeted interventions that address specific gaps. The DPI's climb to 445.50 in 2024 signifies the monumental rise of digital financial ecosystems, driven by the widespread adoption of UPI and Aadhaar-enabled services. Such tools provide a detailed, dynamic picture of the financial inclusion landscape, ensuring that policies remain responsive to the evolving needs of diverse populations.

This shift marks a new era where data is not merely a byproduct of operations but the cornerstone of strategic policymaking. Real-time insights offer agility, enabling stakeholders to make timely adjustments and prioritize underserved regions or groups. By embedding data analytics into the decision-making framework, India ensures that no demographic is excluded from progress.

Lesson: Real-time, data-driven insights are essential for crafting dynamic, inclusive, and responsive financial inclusion strategies.

8. Collaboration as a Catalyst

India's financial inclusion achievements underscore the unparalleled impact of collaboration between governments, private enterprises, and grassroots movements. Programs like the Pradhan Mantri Jan Dhan Yojana (PMJDY) and the Unified Payments Interface (UPI) exemplify how public-private partnerships can leverage each other's strengths to create systemic change. While government initiatives provide scale

and infrastructure, private innovators bring technological efficiency, and grassroots organizations ensure community engagement and trust. Together, these efforts have created a thriving ecosystem that prioritizes collective progress over competition.

The success of such partnerships lies in their ability to harmonize diverse resources and expertise toward a shared goal. This collaborative model has accelerated the reach and impact of financial inclusion initiatives, fostering innovation while addressing systemic inequities.

Lesson: Cross-sectoral partnerships are vital for scaling financial systems, fostering innovation, and ensuring equitable outcomes.

9. Bridging the Digital Divide

Despite India's significant advancements in financial inclusion, the digital divide remains a persistent challenge. Rural areas often face infrastructure deficits, such as unreliable internet connectivity and inadequate access to devices, coupled with limited digital literacy. Additionally, cultural and linguistic barriers can hinder the adoption of digital financial systems. To address these challenges, hybrid models that combine digital solutions with on-ground support are proving crucial. Such approaches ensure that technology is accessible and relevant to rural and underserved communities.

Overcoming the digital divide requires a multifaceted approach. Infrastructure development must go hand-in-hand with tailored educational initiatives to enhance digital literacy. Culturally sensitive solutions that align with local contexts further ensure broader adoption and sustained engagement.

Lesson: Bridging the digital divide requires a combination of infrastructure development, digital literacy initiatives, and culturally adaptive solutions to reach underserved populations.

10. Empowerment Ecosystems Beyond Access

Financial inclusion in India has evolved beyond the foundational goal of providing access to creating comprehensive empowerment ecosystems. Programs such as the Open Credit Enablement Network (OCEN) highlight this shift, offering tailored credit solutions that address the nuanced financial needs of underserved communities. These ecosystems are designed to empower individuals and businesses by facilitating sustained engagement with financial systems, enabling long-term economic resilience.

The transition from access to empowerment reflects the need for a holistic approach to inclusion. It is not enough to provide financial services; these services must be integrated into the broader socio-economic framework to ensure meaningful impact.

Lesson: Financial inclusion must evolve into empowerment ecosystems that enable sustained economic participation and resilience.

11. UPI: India's Crown Jewel

The Unified Payments Interface (UPI) has emerged as a global benchmark for digital payment systems, processing over 88.24% of India's retail payment volumes. Its simplicity, scalability, and user-centric design have made it accessible across socio-economic strata, driving unparalleled adoption. By integrating features such as interoperability and minimal transaction costs, UPI has not only fostered financial inclusion but also transformed India into a global leader in digital payments.

The success of UPI demonstrates the power of intuitive and scalable systems to drive widespread adoption. Its trust-centric model ensures that users across diverse demographics feel confident in using the platform.

Lesson: Simplicity, scalability, and trust are the cornerstones of transformative financial systems that foster inclusion and innovation.

12. India's Global Leadership

India's financial inclusion model has transcended its national boundaries to serve as a global blueprint. By integrating technology, policy innovation, and grassroots engagement, the country has addressed systemic inequities and fostered sustainable growth. This comprehensive approach positions India as a leader in shaping global financial inclusion strategies, offering actionable lessons for nations with similar aspirations.

India's journey highlights the importance of leveraging technology while maintaining a human-centric approach. The country's success is a testament to the power of collective action in achieving equitable growth.

Lesson: India's financial inclusion journey provides a replicable model for global efforts to achieve equitable and scalable financial systems.

Thus, India's financial inclusion journey exemplifies innovation, collaboration, and resilience, serving as a beacon of hope for equitable global progress. From leveraging real-time data to fostering partnerships and empowering communities, the nation's model underscores the potential of collective action to address systemic inequities. As the world looks toward India for inspiration, its journey reaffirms a universal truth: inclusive growth is not merely a goal—it is a promise of dignity, opportunity, and empowerment for all.

Strategic Recommendations for Sustaining Financial Inclusion Progress Based on Experience of 2014-2024

1. **Focus on Quality and Impact of Financial Services:** India's financial inclusion strategy must transition from an emphasis on quantitative metrics, such as account ownership, to prioritizing the quality and meaningful impact of financial services. This approach requires systems that ensure financial accounts actively improve the lives of vulnerable populations, including women, small-scale entrepreneurs, and rural communities. Financial services must translate access into real economic and social empowerment, addressing the disparities that prevent many from achieving sustainable financial health.
2. **Leverage Cutting-Edge Technologies for Inclusion:** Next-generation technologies, such as AI-led conversational payment systems, can revolutionize financial inclusion by simplifying transactions and making financial systems accessible to rural populations, small businesses, and marginalized communities. These systems hold immense potential to overcome process and digital literacy, unlock climate adaptation finance, develop innovative MSME credit mechanisms, and create tools tailored to the seasonal cash flow and risk patterns of smallholder farmers. By embedding AI into the heart of financial strategies, India can drive accessibility, efficiency, and long-term resilience across its financial ecosystems.
3. **Adopt Gender-Intentional and Customized Approaches:** Financial inclusion initiatives must incorporate gender-intentional strategies to address societal inequities and create systems that cater specifically to women and gender minorities. Additionally, the unique needs of smaller borrowers and MSMEs must be met through tailored financial products that overcome barriers to access. This level of customization will not only empower marginalized groups but also enable a more inclusive and diverse financial ecosystem where all participants can thrive.
4. **Strengthen Rural Financial Systems:** Given India's dependence on agriculture and rural livelihoods, strengthening rural financial inclusion remains critical. Institutions such as Primary Agricultural Credit Societies (PACS) should be revitalized and integrated with digital technologies to bridge gaps in rural areas. Expanding the reach of digital public goods, coupled with robust data governance and consumer protection measures, will build trust and ensure that rural communities benefit equitably from financial inclusion initiatives.
5. **Harness AI for Inclusive Development:** AI can act as a catalyst for advancing financial inclusion by enabling precision-targeted solutions for marginalized populations. AI-powered models can predict agricultural risks, tailor insurance products for vulnerable communities, and facilitate financial literacy programs that bridge the digital divide. Additionally, AI-driven analytics can empower women, small businesses, and marginalized groups by creating personalized credit scores, unlocking financing options, and improving financial decision-making. Such AI-led initiatives will enhance financial resilience and enable meaningful participation in the economy.
6. **Foster Multi-Stakeholder Collaboration:** A coordinated effort among government entities, regulators, financial service providers, fintech innovators, civil society, and local communities is vital for bridging inclusion gaps. Collaborative frameworks can ensure that financial inclusion advances alongside human development, driving equitable economic growth. By aligning diverse stakeholders, India can continue to build an inclusive financial ecosystem that leaves no one behind and sets the stage for a future of sustainable, inclusive progress.

Acknowledgements

As this report draws to a close, it is impossible not to reflect on the incredible collective effort that has brought it to fruition. First and foremost, my deepest gratitude goes to Dear Vipin, someone whom I have now known for almost 28 years and whom I admire immensely for his contribution to the development and inclusive finance sector. To him and Dear Sudipto, I am profusely grateful for entrusting me with the privilege of editing this prestigious document. Their unwavering belief in the report's vision has been a source of constant inspiration. Their guidance has illuminated the path throughout this journey, making the experience both enriching and transformative. I am deeply thankful to them.

I also extend heartfelt thanks to Dear Akash, Satyan, Shilpa, and the entire ACCESS team, whose tireless dedication and expertise have been instrumental. In fact, the work of the entire ACCESS team deserves special mention. Their collaborative spirit has been nothing short of extraordinary, and this report stands as a testament to their brilliance and commitment. To the authors, it has been an absolute honour to work alongside such talented individuals. Each one of you has added invaluable insights, and I am deeply grateful for your contributions and I have learned so much from all of you. Thank you.

Furthermore, I express profound appreciation to all the organizations and stakeholders who participated in the discussions leading to this report. Your willingness to share data, insights, and experiences has been crucial in shaping this narrative. Without your openness and support, this endeavour would not have been possible.

Finally, to our readers: you are the heart of this effort. Your engagement and feedback motivate us to strive for excellence continuously. I hope this report inspires and informs, driving meaningful conversations and actions for an inclusive financial future.

Closing Reflections

India's financial inclusion journey is a symphony of innovation, resilience, and collaboration—a beacon of hope for what is possible when vision meets determination. As the country forges ahead, the efforts of its stakeholders, policymakers, and innovators will remain crucial. I sincerely hope that this report is a source of pride and optimism, a testament to what has been achieved and what lies ahead. Together, we can build a future where financial inclusion is not just a goal but a guarantee of dignity, opportunity, and empowerment for all.

Warmest Regards

Ramesh Srivatsava Arunachalam

Microfinance under Microscope

N. Srinivasan

1

1.1. MICROFINANCE UNDER MICROSCOPE

The conclusion in last year's Inclusive Finance India Report assessment can be summarised as 'the sector has established a good base to lobby for appropriate policy change and benevolent regulatory oversight. The sector should deliberate on how to take the gains to the next level and ensure that microfinance becomes the most reliable sector of vulnerable and underserved people.' Looking at the developments over the year and regulatory advice, it seems that parts of the sector did not do enough to build on the stable regulatory regime; instead inviting muscular enforcement action from Reserve Bank of India (RBI) in October 2024.

Microfinance sector (comprising both profit and non-profit players) added 18.1 million new clients during the year (more by about 2.4 million than the previous year).[i] The sector had 161 million active loan accounts, an increase of 18% over previous year (Table 1.2). The addition of new clients points to the continuing inclusion efforts of the sector and offers hope for the remoter and underserved geographies. The number of unique clients grew by almost 20% over the previous year, sustaining the trend of growth in unique clients. The unique clients to loans ratio continued to decline, albeit marginally in 2023-24. Loan portfolio outstanding grew by an impressive 26%. However, disbursements increased by 17%, lower growth rate than last year (28% in the previous year). The higher growth rate in outstanding loans on the back of lower growth rate in disbursements indicates the preponderance of longer-term loans. Microfinance loans as a proportion of non-food bank credit formed about 2.7% in March 2024, increasing from 2.57% in March 2023.[ii] This ratio of microfinance loans to non-food bank credit was less than 0.25% about 10 years back.

Portfolio at risk measured by loans past due for more than 30 days (PAR 30 to 179 days) decreased to 2.85% by March 2024, compared to 3.47% in March 2023. The trend indicates that recent loans have been qualitatively better and the default tendencies are being effectively controlled. It has to be noted that this ratio does not include loans that are past due for 180 days or more as these are normally fully provided for. The PAR 179+ ratio increased 9.6% in

Table 1.1. The Broad Microfinance Sector

	2018-19	2019-20	2020-21	2021-22	2022-23	2023-24	Growth rate 23-24
Outreach - loan a/cs mn	96	110	112	124	137	161	18%
Outreach-unique clients mn	56	63	60	61	73	87	19%
Loan Outstanding in INR bn	1,885	2,342	2,538	2,898	3,523	4,427	26%
Amount disbursed in INR bn	2,075	2,411	1,733	2,586	3,311	3,879	17%
PAR 30+ days %	1.05	1.77	7.12	8.35	3.47	2.85	-18%
Unique to total clients ratio	1.71	1.75	1.87	2.03	1.88	1.85	-

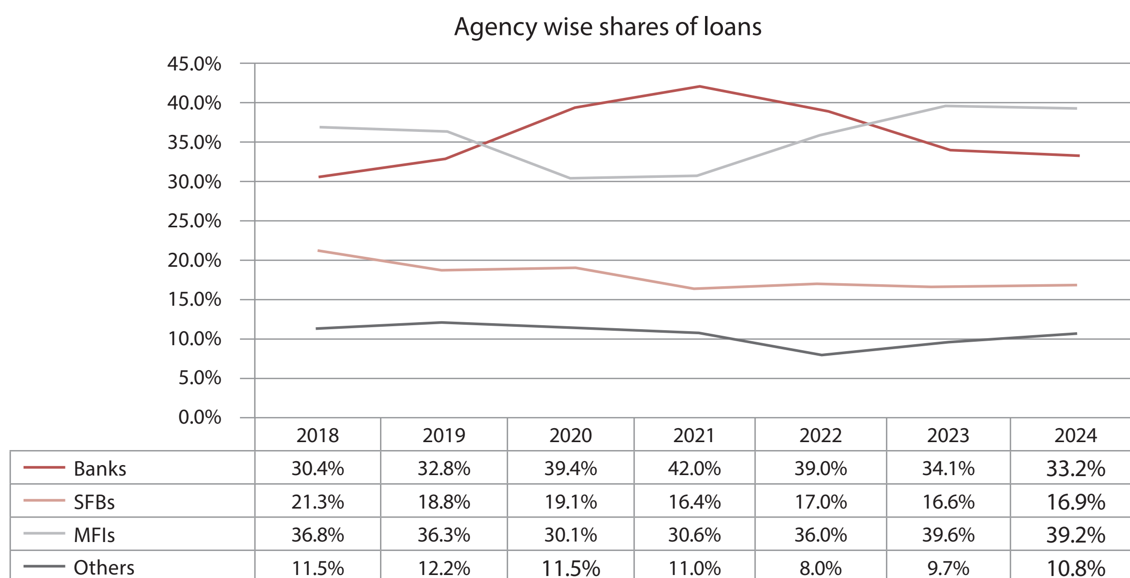
Source: Bharat Microfinance Report, MFIN Micrometer and Status of Microfinance, NABARD

March 2024 from 9.1% in March 2023. PAR 30+ was at 12.45% in March 2024 compared to 12.57 % in March 2023. A detailed analysis of delinquencies is made in a later section.

1.1.1 Institutional Presence

In the last year's Inclusive Finance India Report, it was observed that microfinance institutions (MFIs) have fully reversed the Post-Covid trend of erosion in market share and secured a share 39.6% of loans. During the financial year (FY) 2024 there was a marginal reduction in share of MFIs and banks. Small finance banks (SFBs) and other institutions gained marginally, but there has been no significant movement either way from the different types of institutions.

Post-Andhra Pradesh crisis in 2010-11 (Figure 1.2), the Microfinance (MF) sector has shown continuous and consistent growth in new client acquisition and unique customer base, except for the demonetisation year (FY 2017). Even the Covid pandemic did not affect the sector much as the growth just stagnated for a year (FY 2020) before resuming strident growth. During FY 2024, the sector built on the momentum achieved in the previous year and reported impressive growth rates in unique clients.



	2018	2019	2020	2021	2022	2023	2024
Banks	30.4%	32.8%	39.4%	42.0%	39.0%	34.1%	33.2%
SFBs	21.3%	18.8%	19.1%	16.4%	17.0%	16.6%	16.9%
MFIs	36.8%	36.3%	30.1%	30.6%	36.0%	39.6%	39.2%
Others	11.5%	12.2%	11.5%	11.0%	8.0%	9.7%	10.8%

Figure 1.1. Institutional shares of MF market
Source: Bharat Microfinance Report 2024, Sa-Dhan, October 2024

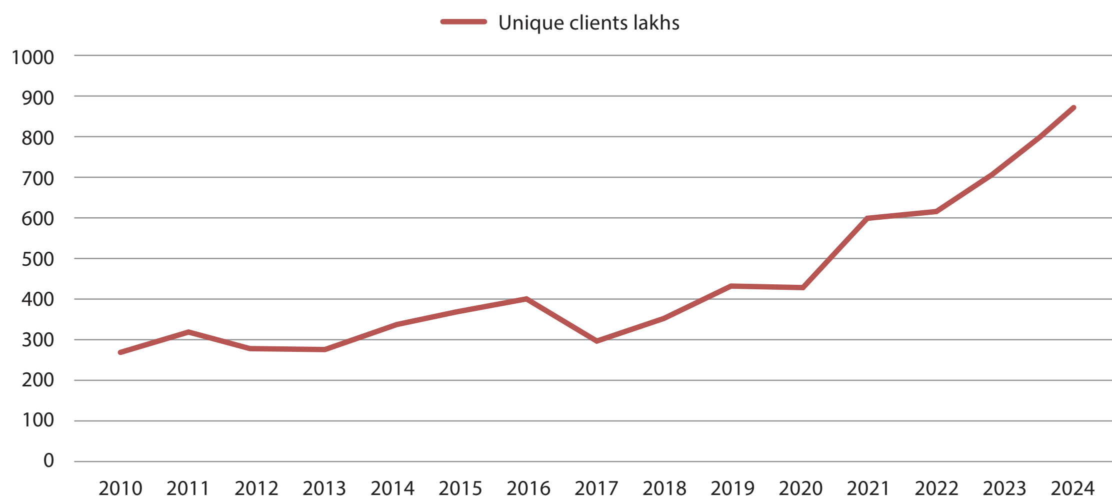


Figure 1.2. MFI Performance over the Years
Source: Sa-Dhan reports several years, the latest report is that of 2024

1.1.2. Performance of MFIs[iii]

The data collected from 87 (out of 100 MFIs licensed by RBI) by Sa Dhan[iv] forms the basis of this section. The number of branches of non-bank financial company microfinance institutions (NBFC-MFIs) increased by 22.4% in FY 2024 (compared to 30% in FY 2023).[v] There was a net increase in staff employed by all MFIs by 28%, taking the number of staff to 223,000.[vi]

Table 1.2. Select Indicators of MFIs

Indicator	2024	2023	FY 2024 growth rate
No of loan accounts million	63.6	53.6	19%
Gross loan portfolio ₹ billion	1,870	1,396	34%
Of which own portfolio ₹ billion	1,517	944	61%
Average loan ticket size ₹	40,464	43,200	-6%
Women client %	95	95	
Income generation loan %[i]	94		-

Source: Compiled by author from different sources

The growth rate in loan accounts was better compared to the previous year. Average loan size surprisingly decreased by 6%, reversing a long trend of increasing size. Women customers were 95% and loans for income generating purposes at 94% present the best features of this sector – that is inclusion and focus on livelihoods.

1.2. FINANCIAL PERFORMANCE

Operating costs continued to decline, though marginally, during FY 2024. Cost of funds increased during the year, as liquidity became scarce and some negative news about the NBFC sector in general abounded. The yield did not increase as much as the finance costs; as a result, margins registered a decline by 70 basis points. But the margins were still higher than what was prevailing in FY 2021 and 22.

The performance and profitability ratios seem to depict a rosy picture of the NBFC MFI sector as a whole. The numbers are heavily influenced by the performance of large MFIs with portfolio of ₹2,000+ Billion. Return on Assets and Return on Equity comparisons of smaller MFIs show that there is a huge difference between the largest and smaller MFIs.

Table 1.3. Select Indicators of Financial Performance

Indicator	2021 %	2022 %	2023 %	2024 %
Operating cost	6.40	6.96	6.58	6.51
Financial cost	10.92	10.65	10.70	11.19
Yield	16.80	16.50	20.65	20.76
Margin	8.40	9.04	10.30	9.55
ROA	0.64	1.11	2.49	4.20
OSS	105	114	116	125

Source: Compiled by author from different sources

Table 1.4. ROE and ROA – size wise distribution

Size of MFI	Margin	ROA	ROE
Small (less than ₹ 1,000 million GLP)	7.2	1.88	7.92
Medium (₹ 1,010 to 5,000 million GLP)	8.7	2.99	11.04
Large (₹ 5,010 to 20,000 million GLP)	8.6	2.78	10.81
Very Large (₹ 20,000+ million GLP)	9.6	4.27	20.73

Source: Data from *Bharat Microfinance Report 2024,* October 2024, Sa-Dhan

MFIs in categories other than very-large have to carry higher finance costs and operating costs. Their higher yields are still inadequate to neutralise the finance and operating cost disadvantages compared to the very large MFIs. Scale of operations is a critical factor in MFI profitability and hence MFIs seek to achieve growth at a faster pace in order to strengthen their ability to compete.

1.2.1. Leading MLIs (Member Lending Institutions)

The leaderboard of MFIs has seen some small changes in FY 2024. L&T finance, a NBFC, was the largest in terms of clients pushing Credit Access Grameen to the second spot. Credit Access Grameen continued to be the largest in terms of Gross Loan Portfolio. Muthoot Microfinance re-entered the top five list of client base.

Table 1.5. Top Five MLIs by Clients and GLP

Name of MLI	Clients in Mn	Name of MLI	GLP ₹ Bn
L&T finance	5.9	CA Grameen	267
CA Grameen	4.9	L&T finance	248
Asirvad	3.9	SKDRDP	242
Fusion	3.8	IIFL Samasta	142
SKDRDP	3.4	Muthoot	122

Source: Data from *Bharat Microfinance Report 2024,* October 2024 Sa-Dhan

Among MFIs, the top five accounted for 41% of GLP and 22% of unique clients (Figure 1.3.). The difference between Credit Access Grameen, the largest MFI and India Infoline Limited Samasta, the next largest was huge. CA Grameen portfolio was 87% more than the next best MFI; and it had 25% more clients than Asirvad, the next best.

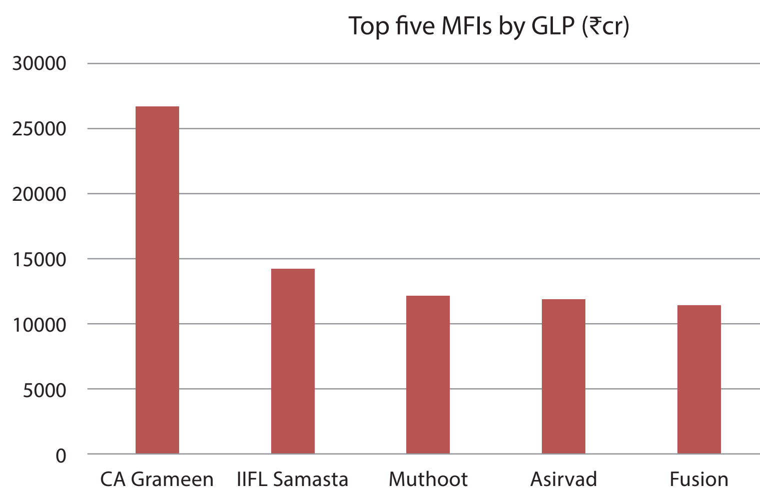


Figure 1.3. **Top Five MFIs by GLP**
Source: Data from *Bharat Microfinance Report2024,* October 2024 Sa-Dhan

1.3. GEOGRAPHICAL SPREAD

Rural microfinance loans were 77% of total loans; an increase of 3% from FY 2023. Eastern and Southern regions continued to lead with shares of 30% and 29% followed by Central Region with 22% share. Northern, Western and North-eastern regions were having share of 9%, 9% and 1% of the client base. North-eastern region lost significant market share, declining from 3% in FY 2023 to 1% in 2024. These shares were well below their share of national population.

Table 1.6. **Top Five States by Microfinance Portfolio**

State	Loan outstanding (₹ in Bn.)	Share of total loans
Bihar	658.4	14.9%
Tamil Nadu	582.3	13.2%
Uttar Pradesh	463.04	10.5%
Karnataka	425.6	9.6%
West Bengal	403.2	9.1%

Source: Data from *Bharat Microfinance Report2024,* October 2024, Sa-Dhan

The western states, despite the presence of strong banking network and significant volumes of savings and credit from banking system, do not figure in the leaderboard in share of microfinance clients or loans. Bihar continues to lead in share of loans. The top five states remain the same as last year with some changes to their position; Karnataka coming in at fourth place, pushing down West Bengal to fifth place. The top five states (Table 1.6) accounted for 57.2% of total microfinance loans outstanding in the country, increasing from 55.2% in the previous year. This increasing share of top states indicates higher concentration of credit in fewer geographies and carries risk potential.

Client and credit penetration ratios were calculated across the different states (Table 1.7). The client penetration ratios are arrived by comparing the proportion of national population in a state with proportion of microfinance clients in the state. The credit penetration ratios are computed by comparing the proportion of national population in a state with proportion of microfinance loans outstanding in the state. A ratio of more than one means that the state has a greater concentration of clients or credit compared to the rest of the country. Very high numbers might indicate vulnerabilities on account of excessive coverage of people and high levels of debt. Low numbers in ratio may indicate (a) a large market space is available in the state both for client acquisition and credit expansion, (b) the environment in the state is not attractive to MFIs in comparison to other states, and (c) the state has credit discipline issues and/or high cost of operations, making MFIs hesitant to enter.

Tamil Nadu continued to have high penetration ratios in terms of clients and credit implying that compared to country average Tamil Nadu has much higher level of clients (85% more than country average) and much higher level of credit (109% more than country average). While the client penetration is declining, credit penetration remains more or less at the same level for last three years. Tripura had high penetration ratio in the past but is showing consistent decline over the last four years. Concentration risk potential is high where penetration is high; MF sector should learn from the Andhra Pradesh experience in 2010 and ensure that their outreach across geographies is more balanced. There are states where the penetration is very low. 18 states have less than 75% of the par values (Annex 1.1 at the end of the chapter) and some states had insignificant penetration (Table 1.8).

Telangana and Andhra Pradesh registered significant increases in penetration ratios. In Telengana, the client penetration ratio increased from 0.32 to 1.16 and in AP from 0.18 to 0.77 within the space of one year. While resumption of

Table 1.7. **High Penetration States – Clients and Credit (March 2024)**

State/UT	Client penetration ratio				Credit penetration ratio			
	FY2021	FY 2022	FY 2023	FY 2024	FY2021	FY 2022	FY 2023	FY 2024
Tamil Nadu	2.3	2.05	1.85	1.69	2.17	2.11	2.11	2.09
Tripura	2.56	1.97	1.73	1.68	4.13	2.72	1.92	1.66
Orissa	1.61	1.56	1.54	1.5	1.74	1.69	1.65	1.63
Karnataka	1.74	1.53	1.45	1.44	1.69	1.68	1.75	1.83
Bihar	1.41	1.39	1.55	1.3	1.29	1.36	1.45	1.53

Source: Authors' calculations

Table 1.8. **States with Low Penetration**

States/UTs	Client penetration ratio	Credit penetration ratio
Manipur	0.18	0.00
Jammu and Kashmir	0.02	0.02
Himachal Pradesh	0.08	0.07
Nagaland	0.07	0.08
Meghalaya	0.16	0.10

Source: Authors' calculations

MFI-led microfinance after 14 years in these two states is a positive development, the rapidity of business growth is a cause for concern. The scars left by Andhra Pradesh crisis are starting to fade; but the MFIs should take a nuanced and calibrated approach to saturation. Given the high level of credit flows through SHGs in these two states, which reaches almost the same households as MFI loans, MFIs should be circumspect about rapid expansion.

State-wise analysis of number of unique clients covered as a percentage of population (See annex 1 at the end of the chapter) reveals that in Tripura, Tamil Nadu, Odisha, Karnataka, Bihar and Puducherry covered 10% or more of the population of the state. At the country level the unique clients to population ratio was 7%. Only eight states had a higher coverage of population compared to the national average.

According to, *Bharat Microfinance Report 2024* twenty-five districts had a portfolio of more than ₹25 Billion each. The top ten districts accounted for 8.5% of the total loan outstanding in the country and the top 25 districts accounted for 18% share in country's loan portfolio. Five of the top ten districts were in Bihar, two each in Karnataka and West Bengal and one in Tamil Nadu. Earlier the high penetration ratio in Tamil Nadu, Bihar and Karnataka was highlighted. In such a context, districts in those states with large portfolios can pose significant risks.

Table 1.9. **Top 10 Districts in Loan Portfolio**

State	District	Loan Outstanding (₹ in Bn.)
West Bengal	Murshidabad	44.3
Bihar	East Champaran	42.6
Bihar	Muzaffarpur	42.4
Bihar	Samastipur	42.4
Karnataka	Mysuru	39.5
Bihar	Madhubani	36.1
West Bengal	North 24 Parganas	36.0
Tamil Nadu	Cuddalore	33.4
Bihar	Darbhanga	31.5
Karnataka	Belgaum	31.5

Source: Data from *Bharat Microfinance Report 2024,* October 2024, Sa-Dhan

1.4. QUALITY OF LOAN PORTFOLIO AND RISKS

Continuing the good progress in enhancing portfolio quality in 2023, MFIs consolidated their position in 2024 in case of PAR 30 to 179 days (Table 1.10). The sector in general and MFIs in particular have been able to rein in defaults, improve recoveries and deal with more chronic cases through settlements and write-offs.

Ratio of loans past due for more than 30 days (PAR 30) is closely monitored as it detects tendency towards default build-up. PAR buckets of more than 60 days past due and 90 days past due are taken up for deeper analysis as at this stage precautionary provisions are made particularly after introduction of Ind-As accounting framework for NBFCs. When the loan remains unpaid beyond 180 days from due date, it is normally treated as NPA and fully provided for. The sector data on PAR 30+ includes

Table 1.10. PAR Comparison between Sector and MFIs

	2023	2024
PAR 30+ days (Sector)	2.16	2.1
PAR 30 + days (MFIs only)	1.6	1.70
PAR 90+ days (sector)	1.06	0.9
PAR 90+ days (MFIs only)	0.93	0.77
PAR 180+ (sector)	9.10	9.6
PAR 180+ (MFIs only)	2.03	1.53

Source: Data from *Bharat Microfinance Report 2024,* October 2024, Sa-Dhan

the subsequent buckets of PAR 60+ and PAR 90+, it does not normally include the PAR 180+ bucket which is monitored separately as assets under the bucket have been provided for and have no provision for implications for the profit and loss account. In FY 2024, there has been a marginal improvement in portfolio quality in the broad microfinance sector, but a slippage in MFIs by 10 basis points under PAR 30. In the PAR 180+ however, MFIs showed considerable improvement with a decline of 50 basis points, while the sector registered an increase of 50 basis points in PAR 180+.

The distribution of states with highest delinquency levels (Table 1.11) is across all regions and there is no regional concentration. West Bengal having 9.1% of country's loan portfolio continues to have a large proportion of PAR 180+ loans; and is currently topping the list.

Table 1.11. Five States with Highest PAR

State	PAR 30+ %	State	PAR 180+ %
Kerala	5.0	West Bengal	14.7
Rajasthan	3.6	Maharashtra	11.9
Madhya Pradesh	3.3	Madhya Pradesh	10.9
Maharashtra	2.1	Odisha	10.5
Odisha	2.0	Rajasthan	8.9

Source: MicroLend, *Quarterly Publication on Microfinance Lending,* Volume XXIII, March 2024, CRIF-High Mark

Among states indicative of weaker credit culture across all time buckets, Rajasthan, Maharashtra, Odisha and Madhya Pradesh have high levels of both PAR 30+ and PAR 180+. Such states need close monitoring at the sector level as also at MLI levels.

1.5. SOURCES OF FINANCE FOR MFIs

Of the total resources, equity formed a healthy 23.6%, an increase of 1.8% over the previous year (Table 1.12). MFIs were able to raise equity to the tune of ₹ 96.5 billion during 2023-24, which is almost double the extent of equity raised during 2022-23 (₹48.6 billion). Interest in MFIs as an asset class seems to have returned among investors.

Table 1.12. Resource Profile of NBFC MFIs

Fund source	2024	2023
Equity ₹ billion	344.3	247.7
Borrowing OS ₹ billion	1,114.5	889.8
Equity as % of total resources	23.6	21.8

Source: Data sourced from *Micrometer Q4,* Issue 49, MFIN

Muthoot Microfinance raised ₹9.6 billion through an Initial Public Offer (IPO). This makes it the fifth MFI listed in the stock exchange, with a market capitalisation of equity at almost ₹240 billion[vii] (October 2024) with CA Grameen having the highest market capitalisation at ₹144 billion.

1.5.1. Borrowings

Of borrowings, about 75% were loans. Non-convertible debentures brought in 10% of lendable resources. Euro commercial borrowings route was used to source 5% of total borrowings.

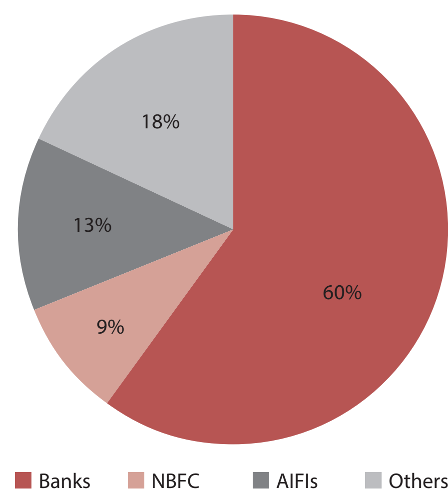


Figure 1.4. Outstanding Borrowings of MFIs by Source March 2024

Source: Data from *Bharat Microfinance Report 2024,* October 2024 Sa-Dhan

Banks were the dominant funding source for MFIs, constituting 60% of borrowings outstanding. All India development financial institutions such as National Bank for Agriculture and Rural Development (NABARD), Small Industries Development Bank of India (SIDBI) and Micro Units Development and Refinance Agency (MUDRA) accounted for 13% and NBFCs 9% of outstanding borrowings of MFIs.

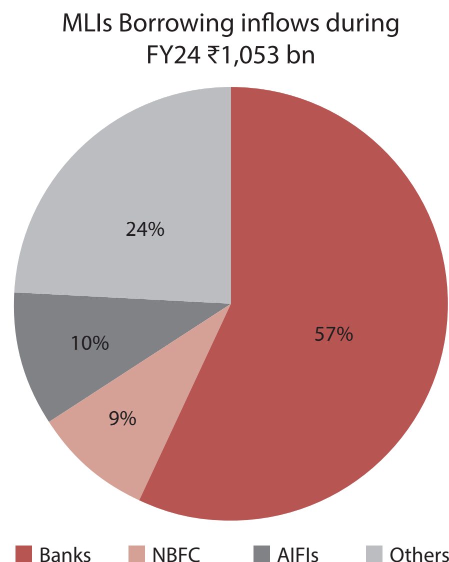


Figure 1.5. MFI Borrowings during the Year
Source: Data from *Bharat Microfinance Report 2024*, October 2024 Sa-Dhan

During the year 2023-24, BMR reports that MLIs saw borrowing inflows of about ₹1,053 billion. Of this, banks provided 57%, All India Financial Institutions (AIFIs) 10% and NBFCs 9%. The share of others was high at 24%. The interest of banks in providing resources to MFIs seems to be below par compared to the previous year.

1.6. CHALLENGES

Last year, staff attrition was mentioned as a key challenge faced by the factor. While attrition continues to be a challenge (and might remain so in the foreseeable future), other major challenges are emerging. Post Andhra Pradesh crisis RBI introduced a regulatory framework and vastly upgraded the same about three years back, offering significant flexibility and business autonomy to MFIs. The sector earned goodwill from customers, state governments and RBI over the twelve years following AP crisis. However, the recent past has seen a dent in the reputation of the sector with RBI having to issue dire warnings to all barring a couple of MFIs from lending in the light of disorderly conduct. The undercurrent of different public utterances of RBI officials indicate that some MFIs are less than diligent in borrower selection, disregard debt and income levels and party to multiple loans. Pricing of loans is a concern for RBI, which feels that some MFIs have abused the freedom on interest rates to set rates at much higher levels than warranted.

In the earlier sections, the rising credit risk tendencies such as geographic concentration, higher PAR levels and some state specific factors had been highlighted. Excessive debt, through larger loan size and multiple loans, seems to be a rising cause of concern. While credit concentration is high and client coverage reaches saturation in local areas, event base risks can be very high (as happened in Kolar, 2009). The risk appraisal and management systems at individual borrower level and at institutional level needs to be strengthened.

The problems of smaller MFIs continue without abatement. Their costs of funds are higher than the larger ones by more than 2 to 4%; and operating costs are higher on account of low level of technology adoption leading to adverse borrower per field staff ratios. They have to compete with larger MFIs in the same market and are out priced. Such MFIs need support for improving information technology (IT) adoption levels and a level playing field in terms of cost of resources. The benefits will accrue to underserved customers of these institutions.

In the previous years it has been pointed out that the customers are no longer loyal to the lending MFI as in the past. Group bonds and discipline have almost vanished; with increasing digital finance processes the individuals have become the focal point – not the groups. MFIs have to rely on credit bureau negative reports and credit scores for leverage to recover loans. The Credit Reference Bureau's data do not seem to be entirely reliable on account of time lag in data submission and onboarding; differences between different CIB data base and the technology adopted. Sa-Dhan in its quarterly report for Q4 of FY 2024 shows that outreach numbers and GLP differs by about 10% between two CIBs. When credit decisions and regulatory compliance critically depend on CIB data based validation, large differences in the data bases do not offer any comfort to the MFIs or the regulator.

1.7. POSTSCRIPT

After the appreciation for good performance in the Covid and post-Covid years, microfinance is now

under a microscope—again. While the progress made after the Covid pandemic is impressive, the accelerated growth seems to carry the seeds of higher risk. The number of multiple loans in some states, high penetration ratios in others, elevated PAR 180 ratios are all pointers to continuing weakness, which is masked by high growth. Regulatory action on a couple of MFIs possibly on account of non-adherence to prescribed processes in borrower selection and loan sanction and the reported concerns of regulator on high interest rates in some parts of the sector fully reflect underlying vulnerabilities. The recent trends also show the maturity achieved by the larger institutions that are able to raise resources through public issue of NCDs (Non-Convertible Debentures) (that are listed in the market). Merger and acquisition actions continue in the sector as also the emergence of new MFIs.

The SRO (Self-Regulatory Organization) mechanism has clearly won favour with RBI. RBI, based on its experience with Sa-dhan and MFINs SRO role, has extended the mechanism to other parts of the financial sector. However, the SROs, apart from data collection analysis and issuance of advisories, should have some enforcement capacities. With about 100 MFIs operating, RBI can do with additional support for at least preliminary exercises in supervision from SROs. The regulatory concerns on pricing of loans on the ground are well founded. Apart from advising MFIs to price loans reasonably, policy institutions should enable MFIs to raise resources at more reasonable terms. The arrangements made in the aftermath of Covid for access to bulk finance helped the sector continue credit support at very reasonable terms to the customers. Refinance facilities through SIDBI, NABARD and MUDRA should be augmented and priced lower, with a stipulation that the on lending interest rates should be suitably set lower.

There are aspects of microfinance outside MFI sector that impact MFIs on account of commonality of customers. Loans are being provided to self-help groups (SHGs), for customers that might belong in the same households as that of MFI customers. Credit bureau records do not capture these loans. The RBI effort initiated some time back should achieve closure so that all lenders have a better appreciation of the credit profile of the customers.

While challenges emerge, the sector has shown the strength and tenacity to deal with the same and come out stronger. The microfinance sector caters to about 9% of adult population in the country, and given a conducive environment, it can cover 25% of all adult's. The sector has the capacity to go beyond micro loans. With its intimate knowledge of the bottom of the pyramid people, the sector is best equipped to provide a fillip to tiny and micro enterprises. The issues relating to livelihoods for the poor and their access to financial and physical markets can be dealt with effectively through adequate financial flows for which MFIs can prove to be catalysts.

APPENDIX A.1.1.

Client Penetration, Credit Penetration Ratios

States/Union Territories	Client Penetration Ratio	Credit Penetration Ratio
Andaman and Nicobar Islands	0.19	0.15
Andhra Pradesh	0.77	0.27
Arunachal Pradesh	0.00	0.14
Assam	0.84	0.62
Bihar	1.30	1.53
Chandigarh	0.13	0.14
Chhattisgarh	0.77	0.69
Dadra and Nagar Haveli	0.00	0.06
Daman and Diu	0.00	0.15
Delhi	0.16	0.12
Goa	0.40	0.38
Gujarat	0.59	0.56
Haryana	0.69	0.65
Himachal Pradesh	0.08	0.07
Jammu & Kashmir	0.02	0.02
Jharkhand	0.93	0.98
Karnataka	1.44	1.83
Kerala	0.98	1.22
Lakshadweep	0.00	0.00
Madhya Pradesh	0.97	0.88
Maharashtra	0.80	0.80
Manipur	0.18	0.00
Meghalaya	0.16	0.10
Mizoram	0.47	0.28
Nagaland	0.07	0.08
Odisha	1.50	1.63
Puducherry	1.21	1.53
Punjab	0.66	0.56
Rajasthan	0.74	0.68
Sikkim	0.70	0.61
Tamil Nadu	1.69	2.09
Telangana	1.16	0.39
Tripura	1.68	1.66
Uttar Pradesh	0.60	0.60
Uttarakhand	0.56	0.53
West Bengal	1.18	1.20

Source: Data on population *from Registrar General – Census statistics, Client and Loan data from Bharat Microfinance Reports* of Sa-Dhan 2024

APPENDIX A.1.2.

Unique Clients to Population Ratio[1]

State	Unique client to population ratio
Andaman and Nicobar Islands	1%
Andhra Pradesh	5%
Arunachal Pradesh	0%
Assam	6%
Bihar	11%
Chandigarh	1%
Chhattisgarh	6%
Dadra and Nagar Haveli	0%
Daman and Diu	0%
Delhi	1%
Goa	3%
Gujarat	5%
Haryana	5%
Himachal Pradesh	1%
Jammu and Kashmir	0%
Jharkhand	7%
Karnataka	11%
Kerala	7%
Lakshadweep	0%
Madhya Pradesh	7%
Maharashtra	6%
Manipur	1%
Meghalaya	1%
Mizoram	4%
Nagaland	1%
Orissa	11%
Puducherry	10%
Punjab	5%
Rajasthan	6%
Sikkim	5%
Tamil Nadu	13%

Data source: Unique clients – Sadhan BMR 2024; Population data from Registrar General – Census statistics. Calculations are that of the author

State	Unique client to population ratio
Telangana	8%
Tripura	13%
Uttar Pradesh	5%
Uttarakhand	4%
West Bengal	9%
India	5.5%

Source: Unique clients – Sa-Dhan BMR 2024; Population data from Registrar General – Census statistics. calculations are that of the author

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NOTES

i. All data in this section is sourced from *Bharat Microfinance Report 2024,* Sa-dhan October 2024.

ii. Base data from RBI and *Bharat Microfinance Report 2024;* calculations by the author.

iii. The data used in this section is drawn from *Bharat Microfinance Report 2023* and *Quarterly Monitoring Repost Q4- March 2023,* Sa-Dhan and from Micrometer Synopsis Q4 FY 2024 – MFIN. 2024.

iv. *Bharat Microfinance Report 2024,* Sadhan November 2024

v. Cited from *Micrometer Synopsis Q4 FY 2023 – MFIN.* 2023

vi. Cited from *Bharat Microfinance Report 2023,* Sadhan November 2023

vii. *Economic Times,* ET Prime data base.

Banks and Financial Inclusion: Going Beyond the Obvious

Gaurav Gupta

"If you give a man a fish, you feed him for a day. If you teach a man to fish, you feed him for a lifetime."

– Unknown origin

2

2.1. INTRODUCTION

In India, the primary goal of financial inclusion has been to free the poor from the clutches of the usurious moneylenders by integrating them into the formal financial system and providing them with an affordable way of transacting in a money economy. However, servicing low-income customers has always been costly, especially with the branch-led engagement model. Although several factors have contributed to the success seen so far, technology has played a significant role and has facilitated low-cost models of banking service delivery which was not possible earlier. In addition, the necessary political will, a pro-active regulator, and the involvement of the private sector via the National Payments Corporation of India (NPCI) and the India Stack have proved to be game changers in India's case.[i]

There have been several noteworthy success stories over time, such as the substantial reduction in the cost of domestic money transfers (from about 5–10% about a decade ago to less than 1% today). Electronic Know-Your-Customer (e-KYC) process has enabled banks to open accounts without requiring a customer to visit a branch. Customers can make biometric or voice-enabled transfers. Unified payments interface (UPI) transfers can be made from smart phones. Leveraging social capital via self-help group (SHG) and joint-liability group (JLG) lending models has resulted in over 100 million women being linked to group loans from banks. As of March 2023, 74 million Kisan Credit Cards (KCC) were active with a total outstanding amount of ₹8.9 trillion (out of 102 million operational holdings in 2018–19).

Over time, the State's role has shifted from that of a direct participant to an enabler of financial inclusion. While still the highest, the share of public sector banks (PSBs) has been declining over the years (Figure 1). In just the last six years, all PSBs (including the Regional Rural Banks (RRBs)) have lost more than 10% market share in terms of outstanding credit by all scheduled banks. Private banks (including foreign and small finance banks) have gained this market share from publicly owned banks.

Market share, however, is not the only yardstick by which the contribution of public sector banks can be assessed. All state-level bankers' committees (SLBC) are led by PSBs. The lead bank scheme has been in operation in India since 1969 and involves the ground-up planning process followed by banks across all districts in the country. SLBC convenor banks are responsible for coordinating banking activities in their respective states in line with the developmental priorities of the state/nation. They also act as important coordinators between the banking system, government, and non-governmental actors.

What was the focus of last year's chapter?

A chapter in last year's edition of this publication on the same broader topic of the role and contribution of the banking system in India's financial inclusion journey discussed several key issues. The major ones are recapped here for the sake of continuity. First, the special role of banks in financial inclusion efforts in India was highlighted. Second, much of last year's discussion addressed the need for speed and aspects of financial inclusion beyond basic bank accounts. Third, the need to focus on migrants and urban areas was highlighted. Fourth, the technology-led focus of India's financial inclusion efforts was discussed, and evidence was

shared on the need to make these more inclusive, without which the risk of slipping out of those newly included into the system remained high. Fifth, the note also highlighted that while the State's role as a direct participant via ownership of banks remained relevant and significant, its role as an enabler of the financial inclusion ecosystem had helped achieve more than in the past.

All these issues remain relevant, and this current note should be read as a continuation of what further needs to be brought into mainstream discussions.

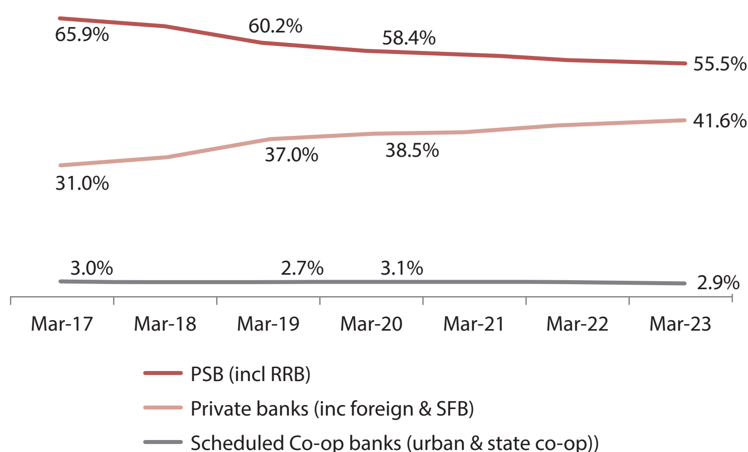

Figure 2.1. Share in credit of scheduled banks

Source: Statistical tables relating to banks in India (Other tables, Table No 01. Bank Group-wise Business of Scheduled Banks in India), RBI's Database on Indian Economy

What does the chapter talk about this year?

This note maintains continuity with the previous discussion on the banking system's role in financial inclusion. In what follows, issues related to the demand side of financial inclusion are highlighted, supply-side interventions and their effectiveness are evaluated, and an attempt has been made to focus attention on a few intangible yet significant contributions of the banking sector. One such contribution is the operation of the Rural Self-Employment Training Institutes (RSETI) in a significant majority of districts. However, the discussion is limited by the availability of quantitative or qualitative data on their effectiveness.

More specifically, this note begins with an overview of the macro context in which financial inclusion efforts in India are taking place (Section 2.2). Section 2.3 discusses the demand side of financial inclusion by providing an overview of the why, who, what, and how of financial inclusion. Section 2.4 examines the interconnections between livelihoods, the world of work, and financial inclusion. Section 2.5 reviews the current state and progress of supply-side interventions over the last 10 years, depending on the availability of data from official sources. The final section (2.6) concludes with a few recommendations for further action.

2.2. MACRO CONTEXT OF HOUSEHOLD SAVING AND INVESTMENT

The Indian economy has maintained a gross domestic saving rate of approximately 30% of GDP since 2013–14. The household sector contributes more than 60% of overall saving. As a percentage of GDP, saving of the household sector have remained in the 18%–20% range over the 10 years from 2013–14 to 2022–23 (except in 2020–21 when they rose to 22.7%). Households save 50% or more in the form of physical assets.

While the share of saving in financial assets as a percentage of GDP has not changed over the past 10 years, some interesting changes have taken place. Banks have been losing market share in yearly saving in the form of financial assets. While bank deposits continue to be the preferred avenue for saving, their share has decreased from 50.3% in 2013–14 to 33.4% in 2022–23 (Figure 2.1). During the same period, the share of saving in the form of shares and debentures has increased from 1.6% to 6.9%. Other categories that have witnessed a sharp increase in share during this period include provident/pension funds (from 14.9% to 21.1%) and investment in small saving schemes (from 0.7% to 8%).

These changes clearly indicate a shift towards non-bank financial intermediation, with savers increasing the flow of savings into long-term, capital markets-oriented instruments. However, it must be pointed out that this growth in penetration of capital markets-oriented financial instruments has largely bypassed very low-income households. Many of these households have only recently secured access to a basic bank account in the past few years. Even the penetration of basic life and non-life insurance is low in India, at 3.2% and 1%, respectively, as of 2022.[ii] Nonetheless, financial inclusion will take place within the wider context of these changes in the financial system.

Readers interested in year-wise details can refer to the detailed table in the appendix (Appendix Table A1).

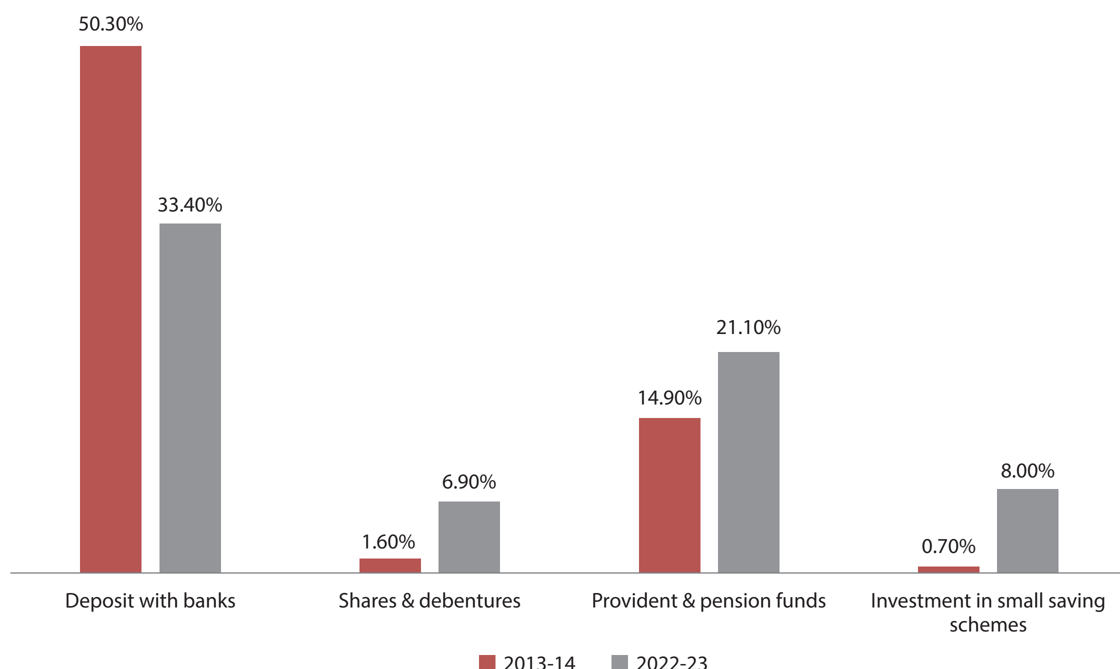

Figure 2.2. Share of financial assets in annual saving by households

Source: Statement 5.3, National Accounts Statistics 2024.[iii]

2.3. AT THE RECEIVING END: THE DEMAND SIDE OF FINANCIAL INCLUSION

The important role of financial inclusion as a tool for development strategy is also reflected in its recognition as an enabler for 7 out of the 17 United Nation's Sustainable Development Goals (SDGs): no poverty (SDG 1), zero hunger (SDG 2), good health and well-being (SDG 3), gender equality (SDG 5), decent work and economic growth (SDG 8), industry, innovation, and infrastructure (SDG 9), and reduced inequalities (SDG 10). A detailed definition of what financial inclusion means in the Indian context is provided in Box 2.1.

The following is a quick recap of facts concerning the demand side of financial inclusion in India. Despite improvements over the years, even today around 5–15% of India's population can be classified as poor, depending on the methodology used. More than one-third of India's population lives in urban areas (36%). Of those in urban areas, 1 in 5 live in slums under poor and unhygienic living conditions. One in every 10 citizens is aged 60 and above, a proportion expected to rise to 1 in every 5 by 2050. Nearly 40% of the elderly are in the poorest wealth quintile, and merely 5.7% have access to any form of pension. Distress-driven migration from rural to urban areas for work has been on the rise, and debt is often the starting point of work arrangements (commonly known as bonded labour) in several informal sector occupations, such as construction work, domestic help, brick kilns, garment manufacturing, waste picking, etc.

Financial inclusion is a complex challenge in a country as diverse as India. A large part of the workforce is engaged in precarious employment, with no employer-provided protection in the form of insurance or retirement savings. Government schemes, where available, are the only form of social protection, and given the low purchasing power, the ability to buy financial products and services to improve financial resilience and well-being is limited. Findings from the All-India Debt and Investment Survey 2019 (AIDIS) and the World Bank's Findex survey of 2021, summarised in Box 2.2, also clearly show that there is a need for inclusive financial services at various life stages which is not adequately addressed at present.

BOX 2.1. DEFINING FINANCIAL INCLUSION

The Why: Unlike its common usage, financial inclusion is not just about providing more credit. It lets the poor work towards improving their future and to transact efficiently. Exclusion from the financial system means an inability to access safe mediums to store wealth and draw on them when required, to consume strictly within a budget, and to remit their hard-earned money using informal, often very expensive and unsafe, mediums.

The Who: Those excluded from the formal financial system are typically at the bottom of the income and wealth pyramid. They are the poorest and most vulnerable. In the Indian context, these individuals often depend heavily on government transfers, have unstable, irregular, and very low incomes, have no or limited asset ownership, and display poor indicators of physical health and nutritional status.

In India, financial exclusion is also intricately linked to social exclusion based on gender, caste, religion, and status as migrants. Another emerging source of exclusion is technology. The increasingly tech-enabled digital financial inclusion agenda risks exacerbating the divide between the haves and the have-nots.

The What: Meaningful financial inclusion is defined by access to, usage of, variety of, and quality of financial products at different life stages. Access refers to the availability of a range of products, such as bank accounts, savings products, remittances, insurance of different kinds, credit, pensions, financial literacy, and consumer protection. Usage refers to the frequency of account use, behaviour change, and uptake of other products. The aspect of variety concerns with whether financial products and services are one-size-fits-all or if there is some level of need-based availability. Quality is about whether financial inclusion delivers what it is supposed to deliver, that is, an improvement in the lives of the poor.

The How: This aspect of financial inclusion focuses on whether the delivery channels are user-friendly and designed keeping in mind those at the 'bottom of the pyramid'. These channels include bank branches, ATMs, mobile and internet banking, and business correspondent (BC)/cash-in-cash-out (CICO) network.

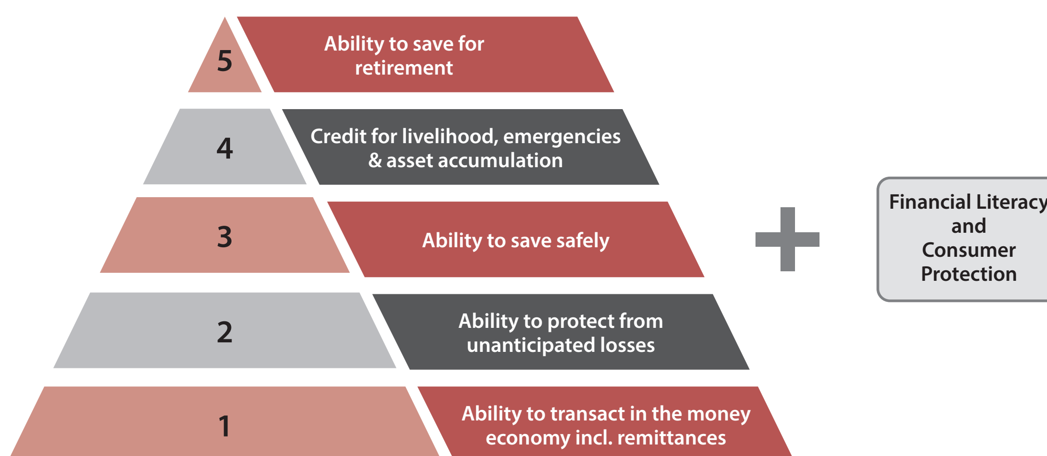

Figure 2.3. Spectrum of financial needs

2.4. INTERCONNECTIONS BETWEEN LIVELIHOODS, THE WORLD OF WORK AND FINANCIAL INCLUSION

With an estimated population of 1.4 billion[iv], India's economy has defied the expected route of structural transformation, where workers transition from agriculture to industry or from informal to formal work. Even today, approximately 45% of the workforce is engaged in agriculture which contributed 16% of India's GDP in 2022. The share of self-employment has consistently stayed above 50%, standing at 57.3% in 2023 (65.3% for women and 53.5% for men; see Table 2.1). Only 1 in 5 workers is in regular salaried employment. The shares of unorganised sector employment and informal employment in 2022 were 81.1% and 90.3%, respectively. More than 90% (92.2%) of employment in 2022 was in unskilled and low-skilled jobs.

Employment for more than 90% of workers comes without any social security (such as pensions or insurance) or even job security. These workers are engaged in low-income work involving no or low levels of skills. In such cases, the onus of providing social security throughout the various stages of life falls either on the worker herself or on the State. Therefore, financial inclusion is expected to play a vital role in the well-being of the workforce and their dependents.

One of the top priorities for governments, especially in low-income and developing economies, is to lift people out of poverty. While financial inclusion is not the only factor, it is a critical component in poverty alleviation and sustainable livelihoods frameworks deployed worldwide at different times (Figure 2.4). The ability to save and access credit is intricately linked to the acquisition of assets, including skills and human capital, and finding remunerative work. Overall, there is a positive relationship between access to the formal financial sector and economic growth and development.

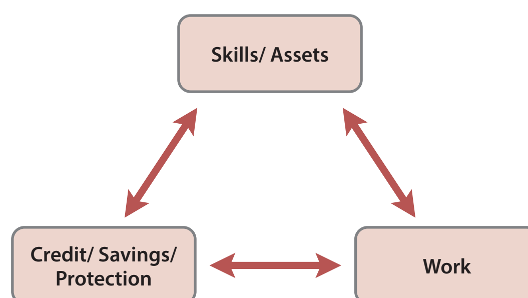

Figure 2.4. Sustainable livelihoods
Source: DFID[v]

BOX 2.2. KEY OBSERVATIONS FROM AIDIS AND FINDEX SUMMARISED

AIDIS	Findex
• Lower incidence of indebtedness in urban areas • Lower decile classes have fewer assets • Informal credit is expensive • Debt for housing, medical, and other consumption	• Financial literacy at low levels • Presence of significant informal financial system (gap between savings and savings at any FI is 24%–13% in 2021); refer to Appendix Table A2. • 45% reported borrowing any money, while only 12% reported borrowing from a formal FI. • Poor financial resilience (access to funds in any emergency)

Table 2.1. Employment status by gender in 2023

	Men	Women	Total
Self-employed	53.5	65.3	57.3
Own-account worker	40	27.3	35.9
Unpaid family labour	9.2	37.4	18.2
Employer	4.3	0.6	3.1
Regular employee	23.2	15.9	20.9
Casual worker	23.3	18.8	21.8
All	100	100	100

Source: India Employment Report, 2024

Have financial inclusion efforts in India been aligned with the approach to ensuring secure livelihoods?

Financial inclusion has been an integral element of the National Rural Livelihoods Mission (NRLM) and has seen reasonable success in driving savings, followed by access to bank credit via the SHG-Bank Linkage Programme.

While it is one of the components of the National Urban Livelihoods Mission (NULM), it has not been as successful. This is partly due to much smaller

budgets for NULM in comparison to those for NRLM. Local municipal bodies were envisioned to play a key role in poverty alleviation in urban areas, but their budgets and overall performance have been less than satisfactory, even in their functions of providing core services to keep cities running.

RSETIs as an important institution with a presence in each district

RSETIs are institutions designed to impart skill training and skill upgradation to rural below-poverty line (BPL) youth to mitigate the unemployment problem in the country. These institutes are promoted and managed by banks, with active cooperation from state governments. The lead bank in each district is responsible for setting up and managing RSETIs. The Government of India provides a one-time grant assistance of up to ₹10 million to cover the expenditure on the construction of buildings and other infrastructure. After successful completion of the training, RSETIs provide credit-linkage assistance from banks for candidates to start their own entrepreneurial ventures.

Each RSETI offers approximately 40 different skill development programmes and skills, on average, almost 700 candidates annually. The programmes are of short duration, ranging from 1 to 6 weeks, and fall into various categories: agricultural programmes (e.g., agriculture and allied activities), product programmes (e.g., dress designing, incense sticks manufacturing, etc.), process programmes (e.g., two-wheeler repairs, radio/TV repairs, beautician course, etc.), general programmes (skill development for women) and other programmes (related to sectors like leather, construction, hospitality, and any other sector depending on local requirements).

These training programmes are determined by the local RSETI based on the local resource situation and potential demand for various products and services. A uniform, standardised curriculum has been developed and circulated among the institutes. Soft skills training, with a focus on developing an entrepreneurial mindset, is integral to all the programmes offered by RSETIs.

As of December 2023, there were 591 RSETIs operating across 577 districts.[vi] According to data from the Ministry of Rural Development's online dashboard, by the end of July 2024, over 5 million candidates had been skilled through RSETIs across the country. Of these, 3.6 million (71%) have been settled, mainly in self-employment. A large proportion of these candidates have also been linked to bank finance. Based on the available data, 1 million were trained between 2009 and 2014, and the year-wise numbers for subsequent years are shown in Figure 2.5. The rate of annual growth slowed down during the COVID-affected years of 2020–21 and 2021–22.

2.5. THE SUPPLY SIDE OF FINANCIAL INCLUSION

Banks play a central role in financial inclusion. Unlike other institutions such as microfinance institutions (MFIs) and post offices, they focus on both sides of households' balance sheets and serve as an important distribution channel for products such as insurance, pensions, and small savings schemes. Universal banks, especially the PSBs, dominate the financial sector. However, their reliance on

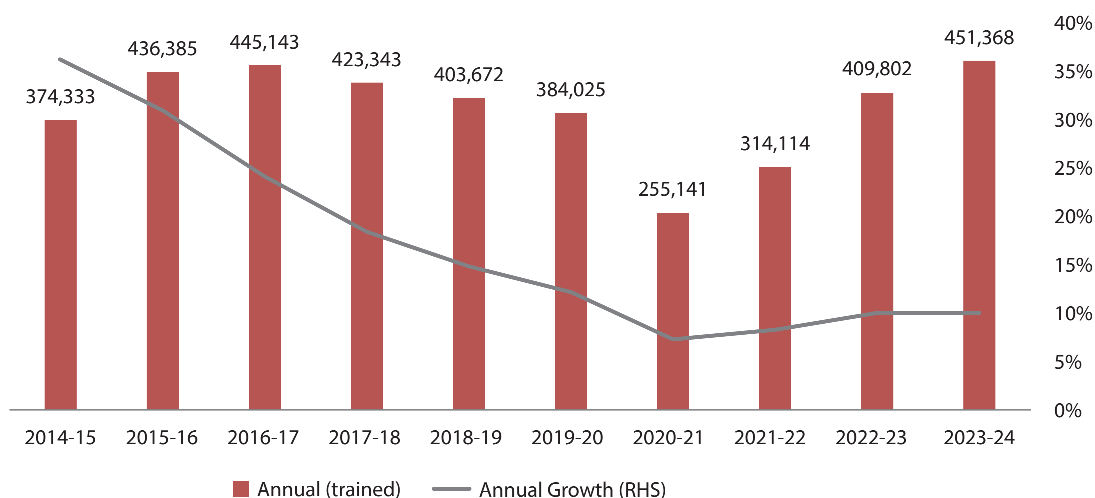

Figure 2.5. Candidates skilled by RSETIs (numbers and annual growth rate in %)

Source: RSETI dashboard (available here- https://dashboard.rural.nic.in/dashboardnew/rseti.aspx)

traditional channels of delivering their services via physical branches, results in a high-cost structure, making them less suitable in promoting financial inclusion among unserved or underserved citizens.

Differentiated banks have existed in India for a long time – in the form of cooperative banks with their credit delivery through a vast network of Primary Agricultural Cooperative Societies (PACS; both before and after independence in 1947), Urban Co-operative Banks (UCBs) and RRBs (1975 onwards).[vii] In the past decade, a new set of differentiated banks have emerged, such as Small Finance Banks (SFBs; a universal bank for relatively smaller ticket credit) and Payments Banks (PB; which provide low-cost money transfer channel but do not offer credit and time deposits). These institutions were given licenses to address niche gaps in the financial inclusion agenda in India.

As much as possible, the discussion in this section aligns with the spectrum of financial needs shown in Figure 3. As of the end of March 2023, the total loans and advances, and deposits of scheduled commercial banks (SCBs) were ₹144 trillion and ₹191 trillion, respectively.[viii] Of this, the share of PSBs in these two categories was 53.5% and 57.3%, respectively (Table 2.2).

Ability to transact in the money economy including remittances

As of December 2023, there were 705 million Basic Saving Bank Deposits Accounts (BSBDA) with a total savings balance of ₹2.72 trillion. This balance has mainly been sustained by direct benefit transfers (DBTs) rather than voluntary deposits by account holders as evidenced by annual inward transfers via Aadhar Payment Bridge System (APBS) in 2022–23 to the tune of ₹2.45 trillion, very low value of cash deposits (₹2.2 billion) via Aadhar-enabled Payments System (AePS) and ₹3.3 trillion of AePS cash withdrawals.[ix] Pradhan Mantri Jan Dhan Yojana (PMJDY) accounts, though a subset of BSBDAs, contribute to a significant majority of the savings balances.

The growth in opening new no-frills PMJDY accounts (Figure 2.6) has been slowing as the scheme nears saturation, with 529.9 million accounts with savings balances of ₹2.3 trillion as of 31 July 2024. Nearly two-thirds of these accounts are in rural areas, and 55% are held by women. By 2021, the gender gap in bank account ownership was closed, with 77% women reporting access to a bank account. However, among account holders

Table 2.2. Summary of loans and deposits of major institutions, March 2023 (₹ trillion)[1]

Item	Loans	Deposits	CD ratio	Share-Loans	Share-Deposits
PSB	83	117	71%	53.5%	57.3%
PVB	54	63	86%	34.8%	30.8%
Foreign banks	5	8.5	59%	3.2%	4.2%
SFB	2	2	100%	1.3%	1.0%
Payments banks	0	0.12	0%	0.0%	0.1%
Total-Scheduled Commercial Banks	144	191	76%	92.9%	93.3%
RRB (included in PSB)	4	6	67%	2.6%	2.9%
UCB	3.3	5.3	62%	2.1%	2.6%
Rural credit co-ops	7.7	8.3	93%	5.0%	4.1%
Total-Co-operative banks	11	13.6	81%	7.1%	6.7%
Scheduled Commercial + Co-operative- Total	155	204	76%	100%	100%

Source: Trends and Progress in Banking in India, December 2023

[1] PSB: Public Sector Banks, PVB: Private Sector Banks, FB: Foreign Banks, SFB: Small Finance Banks, PB: Payments Banks, RRB: Regional Rural Banks, UCB: Urban Cooperative Banks, and RCB: Rural Cooperative Banks.

in 2021, a higher percentage of women (32%) had inactive accounts compared with men (23%), as per the World Bank's Findex Survey. As of 2021, only 19% women had access to a debit card compared with 35% of men. This gap has narrowed compared to 2014 and 2017 when it was 21% and 20%, respectively (Findex).

As of December 2023, only 1.3% of BSBDA accounts had an overdraft facility (RBI Annual Report 2023–24). The average balance per overdraft account was ₹1,092 and savings balance per account was ₹3,859 (increasing over time). Consequently, the credit deposit ratio based on overall balances was merely 0.2% (Figure 2.7).

As is seen in Figure 8, DBTs (government to citizens) have averaged over ₹2.5 trillion between 2018–19 and 2023–24, providing the proverbial fuel to enable activity in these basic accounts.

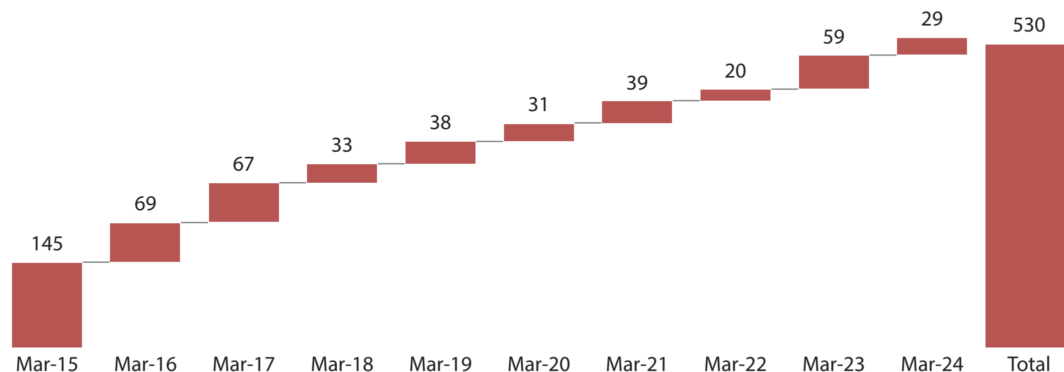

Figure 2.6. Yearly new PMJDY accounts (in million)

Source: https://pmjdy.gov.in/account

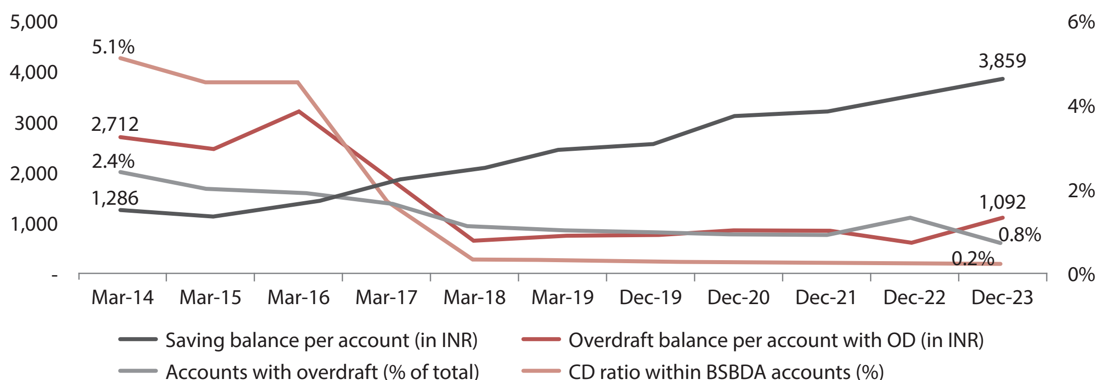

Figure 2.7. BSBDA accounts – savings and overdraft balances

Source: Department of Financial Services, Annual Report (various editions)

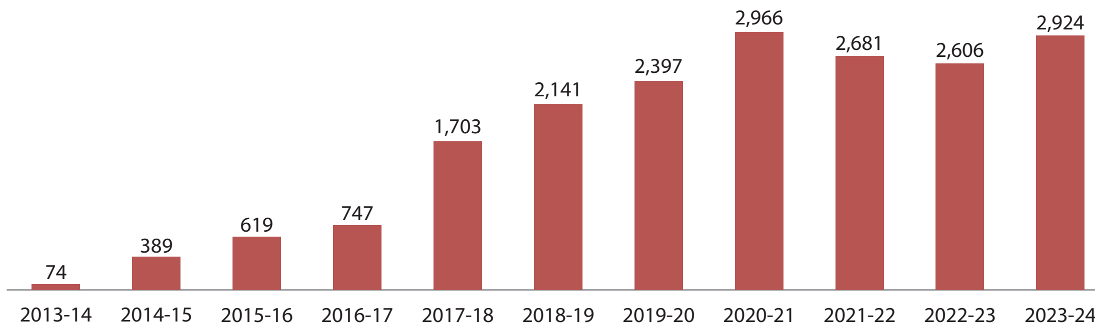

Figure 2.8. Annual DBT (government-to-citizen payments; ₹ trillion)

Source: https://dbtbharat.gov.in/

Ability to protect from unanticipated losses

Banks primarily distribute insurance and pensions to existing account holders. Despite 530 million PMJDY account holders, the penetration rates for various schemes are relatively low: Pradhan Mantri Jeevan Jyoti Bima Yojana (PMJJBY) at 163 million, Pradhan Mantri Suraksha Bima Yojana (PMSBY) at 254 million, Pradhan Mantri Jan Aarogya Yojana (PMJAY) at 298 million and Atal Pension Yojana (APY) stood at 55.5 million. These figures underscore the need to provide enhance financial inclusion beyond just providing access to basic bank accounts.

Ability to save safely

For low-income individuals, the PSBs, RRBs, and post offices remain important channels for saving. As highlighted in Section 2.2, the share of small savings schemes in annual household saving has increased from 0.7% in 2013–14 to 8% in 2022–23 which a few public sector and large PVBs are authorised to mobilise. In terms of bank deposits, growth in both the value of deposits and the number of depositors in rural India has been similar to that in urban India between 2013 and 2024. It is encouraging to note that per capita deposits in rural India have grown at a faster rate of 2.2% annually, compared to 1% annually in non-rural locations between 2013 and 2024 (Figure 2.9).

While the PSBs dominate in deposit mobilisation, private banks have higher per-account balances. As of September 2023, the total deposits in the banking sector amounted to approximately ₹199 trillion.[xii] PSBs held the largest share of individual deposit accounts, with 65% of accounts (66% share by value) and along with RRBs, they had three-fourths of all deposit accounts of individuals in the scheduled commercial banking system. The rest was mainly shared by Private Sector Banks (PVBs; 15.7%) and

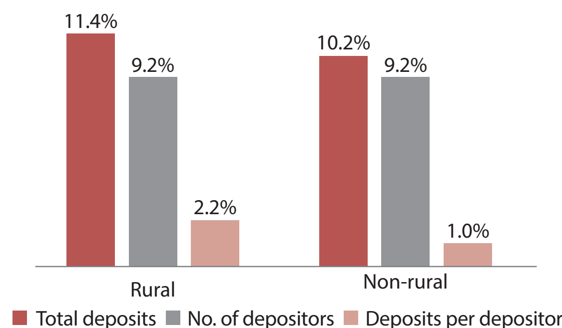

Figure 2.9. Comparative growth in deposits – rural and non-rural locations (%)
Source: RBI Basic Statistical Returns, Table 2.5

the relatively new Payments Banks (6.3%). PVBs (excluding foreign banks) held slightly over one-fourth of individual deposit balances and 15.7% of individual deposit accounts (Table 2.3).

SFBs, with their MFI roots, have the highest share of women-owned accounts followed by RRBs. Within their deposit portfolios, SFBs had the highest share of women deposit accounts at 72.1% of all deposit accounts (42.5% by value by value of deposits). Almost 45% of deposit accounts with RRBs were of women and these accounts contributed 39% of all deposit balances of RRBs (Table 2.3).

Differentiated banks had lower per-account savings in women-owned accounts. As of the end of March 2023, savings balances in all women-owned accounts was approximately 39% of the total savings balances across all individual accounts.[xiii] Overall, the per-account balance in women-owned deposit accounts was almost the same as per-account balance for accounts owned by men. However, institutions, such as RRBs and SFBs, that serve mainly low-income categories, the per-account balances in women-owned accounts were 80% and 29% of those in men-owned accounts.

Table 2.3. Bank deposits by gender, March 2023

	PSB	RRB	Foreign	PVB	SFB	Payments Banks	All Banks
Share of individual deposit accounts in all commercial banks	64.70%	11.50%	0.30%	15.70%	1.50%	6.30%	100%
Share of individual deposit value in all commercial banks	66.20%	5.10%	0.70%	26.80%	1.00%	0.10%	100%
Deposit balance per account: women-owned (INR)	44,893	16,196	128,978	70.444	16,795	823	42.503
Deposit balance per account: men-owned (INR)	41,514	20,178	83.896	72.085	58,595	800	41.321
Ratio of per account balance (women-owned/men-owned)	1.08	0.80	1.54	0.98	0.29	1.03	1.03
Share of women-owned deposit accounts (within each bank category)	36.60%	44.70%	25.90%	40.10%	72.10%	29.30%	38%
Share of women-owned deposit value (within each bank category)	38.50%	39.30%	35.00%	39.60%	42.50%	29.90%	39%

Source: RBI Basic Statistical Returns, Table 2.5 (Annual)

Credit for livelihoods, emergencies and asset accumulation

In nominal terms, overall credit from the banking sector increased at a Compound Annual Growth Rate (CAGR) of 10.1% from March 2014 (₹61,232 billion) to September 2023 (₹152,310 billion) – Figure 10. However, the growth in real terms, was 4.1%.[xiv] The nominal growth of credit in the six months from April 2023 to September 2023 was 10.5%.

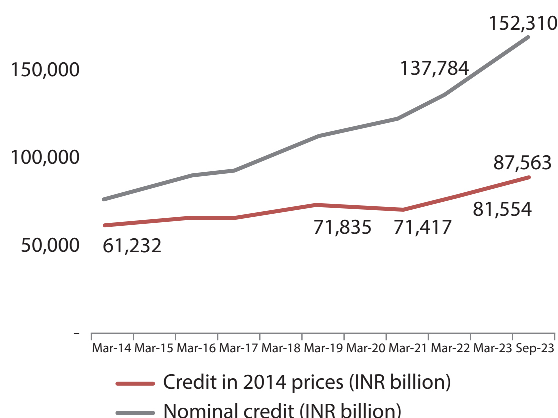

Figure 2.10. Nominal and real credit by the banking system, ₹ billion
Source: RBI Basic Statistical Returns, Table 2.6

From March 2014 to September 2023, the composition of sectoral credit changed significantly. The share of credit allocated to industry, including both Micro, Small, and Medium Enterprises (MSMEs) and larger firms, declined substantially, and personal loans have taken that share. Agriculture's share fell slightly from 12% to 11.4%, the share of personal loans increased from 16.2% to 30.6% whereas the share of industry and services including non-financial sector/non-personal credit fell from 61.6% to 42.4% (Figure 2.11).

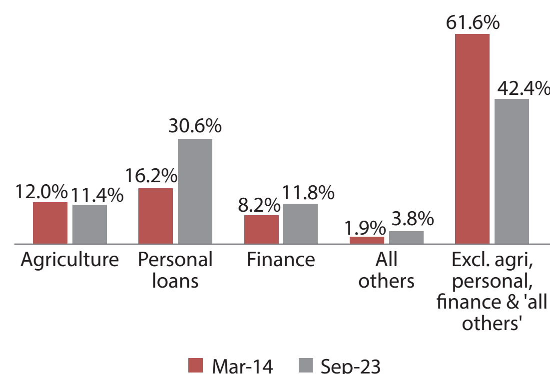

Figure 2.11. Share in occupation-wise credit
Source: RBI Basic Statistical Returns, Table 3.4

Priority-sector lending (PSL): RRBs carry a relatively higher load on PSL lending, especially in rural areas and to agriculture. PSL norms, which have been in place since the early 1970s, have helped channel credit to areas designated as priority by the Government of India and the Reserve Bank of India. RRBs, Rural Co-operative Banks (RCBs), UCBs, and SFBs are special-purpose banks required to allocate a higher percentage of their assets to the designated priority sectors, overall and in sub-categories such as lending to designated weaker sections (Table 2.4). RRBs' actual achievement of PSL targets is significantly higher than the minimum requirement. For FY23, RRBs achieved 97.5% of their overall PSL targets, 41.7% in direct advances to agriculture and 85.6% in lending to weaker sections. No other institution comes close to this achievement of RRBs.

Overall, however, PSL doesn't necessarily mean lending in rural areas or to extremely low-income borrowers only. The designated priority sectors under the PSL guidelines include Agriculture, MSME, Export Credit, Education (loans up to ₹2 million), Housing, Social Infrastructure, Renewable Energy, and others.[xv]

Table 2.4. PSL targets of banks in 2024

	Commercial Banks	SFB	RRB	UCB
Priority sector adv to total adv.#	40%	75%	75%	60%
Direct agri adv to total adv.	18%	18%	18%	-
Small & marginal farmers (within agri)	10%	10%	10%	-
Micro-enterprises	7.5%	7.5%	7.5%	7.5%
Weaker section adv to total adv.#	12%	12%	15%	11.5%

Target for UCBs to be gradually phased up to 75% (overall) and up to 12% (weaker sections) by FY26

Rural and semi-urban areas account for less than one-fourth of the overall credit. It must be noted that rural locations account for merely 8% of all outstanding from SCBs in India. Combined, rural and semi-urban have a share of 22% of the total outstanding credit. Metros (61%) and urban areas together account for 79% of all outstanding credit as of September 2023 (Figure 2.12).

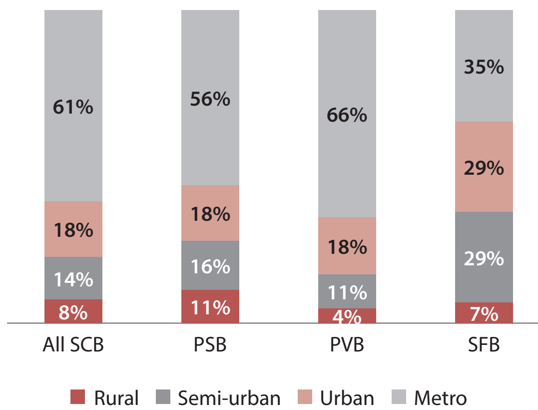

Figure 2.12. Spread of credit portfolio of SCBs, September 2023 (% share)
Source: RBI Basic Statistical Returns, Table 2.1

Supply of credit in rural areas is heavily reliant on PSBs. PSBs had 53% share of all credit outstanding as of September 2023, followed by PVBs at 42%, Foreign Banks (Foreign) at 3.6%, and SFBs at 1.4%. Nearly 3/4th of all lending in rural areas was done by PSBs. SFBs had 1.2%, 2.9%, 2.3%, and 0.8% shares in rural, semi-urban, urban, and metropolitan areas (Figure 2.13). Clearly, the supply of credit in rural areas depends heavily on PSBs.

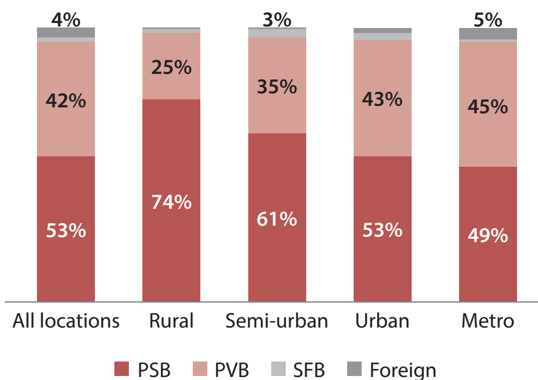

Figure 2.13. Market share in different locations, as of September 2023
Source: RBI Basic Statistical Returns, Table 2.1

While still at 3/4th, the share of PSBs, including RRBs, in rural areas has been declining over the years. PSBs contributed to 87% of credit in rural areas as of March 2018 and this has progressively declined each year ever since (Figure 2.14).

While growth in credit is similar between rural and non-rural areas, per borrower credit has been increasing in rural centres while urban centres have been adding borrowers at a faster rate between 2013 and 2024 (Figure 2.15).

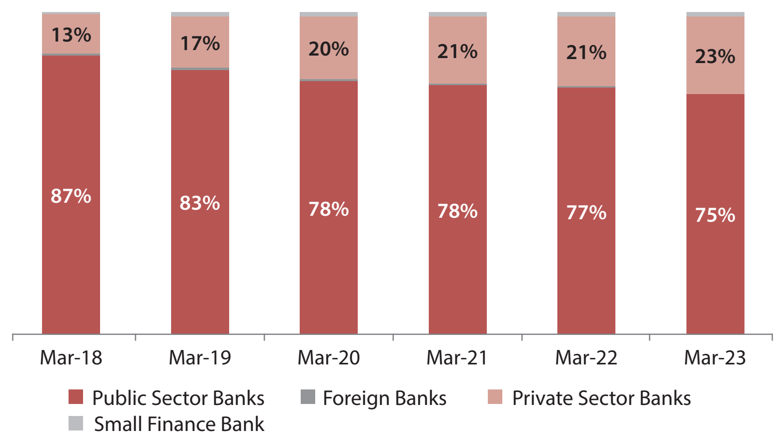

Figure 2.14. Share of bank types in rural credit (%)
Source: RBI Basic Statistical Returns, Table 2.1

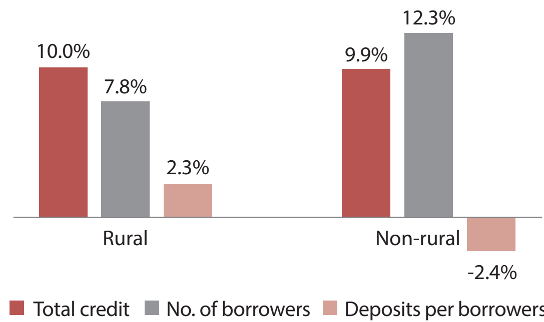

Figure 2.15. Comparative growth in credit – rural and non-rural locations (%)
Source: RBI Basic Statistical Returns, Table 2.1

PSBs, however, remain important not just for their overall market share. Credit per borrower for PSBs as of March 2023 at ₹203,296 is also more than double that of PVBs (Figure 2.16) in rural areas at ₹78,197.

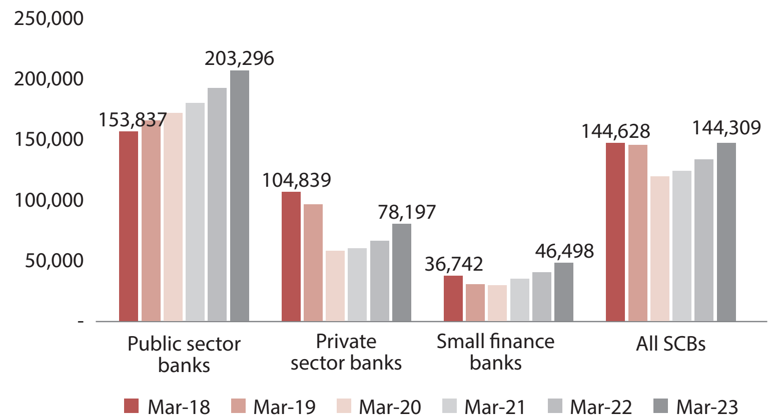

Figure 2.16. Per borrower credit in rural areas (₹)
Source: RBI Basic Statistical Returns, Table 2.1

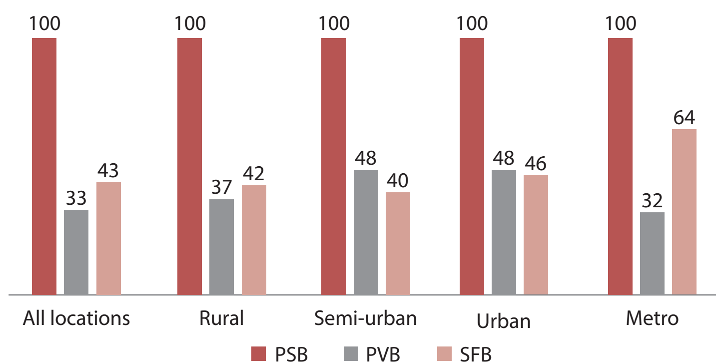

Figure 2.17. Relative lending by banks to small borrowers, as of September 2023
Source: RBI Basic Statistical Returns, Table 2.1

For small borrowers, PSBs are the dominant lenders: Coming to small borrowers i.e. with credit limits less than ₹200,000, PSBs have clear dominance over all other types of banks. For every ₹100 given to a small borrower at an all-India level by PSBs, PVBs had given ₹33 and SFBs had given ₹43 (Figure 2.17). Given the urban microfinance roots of a few large SFBs, their credit ticket sizes are double that of PVBs in metros.

SFBs diversifying from their MFI roots: SFBs have been reducing their share of lending to small borrowers with credit limits of less than ₹25,000. In March 2018, this segment accounted for 10.8% of the credit, but it reduced to 0.7% by September

Table 2.5. Share of lending to small borrowers in own portfolio

	Particulars	All SCB	PSB	PVB	SFB
Jun-17	Upto INR 25,000	0.4%	0.3%	0.7%	-
	INR 25,001 to 200,000	6.7%	7.6%	5.5%	-
	Total	7.2%	7.9%	6.3%	-
Mar-18	Upto INR 25,000	0.4%	0.3%	0.7%	10.8%
	INR 25,001 to 200,000	6.7%	7.2%	5.8%	29.0%
	Total	7.1%	7.5%	6.5%	39.8%
Mar-19	Upto INR 25,000	0.5%	0.2%	0.8%	8.2%
	INR 25,001 to 200,000	6.9%	7.3%	6.3%	32.9%
	Total	7.3%	7.5%	7.2%	41.1%
Mar-20	Upto INR 25.000	0.4%	0.2%	0.6%	5.0%
	INR 25,001 to 200,000	7.2%	7.1%	7.3%	43.1%
	Total	7.6%	7.2%	7.9%	48.1%
Mar-21	Upto INR 25,000	0.4%	0.2%	0.6%	3.6%
	INR 25,001 to 200,000	7.6%	7.5%	7.4%	39.8%
	Total	7.9%	7.7%	8.0%	43.4%
Mar-22	Upto INR 25,000	0.3%	0.2%	0.6%	2.1%
	INR 25,001 to 200.000	7.4%	7.3%	7.0%	38.8%
	Total	7.7%	7.5%	7.6%	40.9%
Mar-23	Upto INR 25,000	0.3%	0.1%	0.5%	1.0%
	INR 25,001 to 200,000	7.1%	7.0%	6.9%	35.9%
	Total	7.4%	7.1%	7.4%	36.9%
Sep-23	Upto INR 25,000	0.3%	0.1%	0.4%	0.7%
	INR 25,001 to 200,000	6.8%	6.9%	6.3%	35.5%
	Total	7.1%	7.0%	6.7%	6.7%

Source: RBI Basic Statistical Returns, Table 2.4

2023 (Table 2.5). This shift is indicative of SFBs diversifying away from their MFI activities. The share of borrowers in the ticket size ranging from ₹25,000 to ₹200,000 increased from 29% in March 2018 to 35.5% as of September 2023 by amount of credit.

On the other hand, for entities currently operating as MFIs, the share of disbursals (by number of accounts) with ticket size of less than ₹30,000 has ranged from 21% in the quarter Jul–Sep 2022 to 15% in the quarter Jul–Sep 2023.[xvi]

The share of women borrowers remains half that of men, and borrowing per account for women has been declining in nominal terms. Although women have caught up with men regarding basic bank accounts, they still lag behind in borrowing, with nearly two male borrowers for every woman borrower; however, this gap has been narrowing over the years (Figure 2.18). From March 2014 to September 2023, per-account borrowing for women decreased at an annualised rate of 0.92% from ₹160,488 to ₹147,016 (Figure 2.19). In contrast, per-account borrowing for men increased at an annualised rate of 3.7% over the same period.

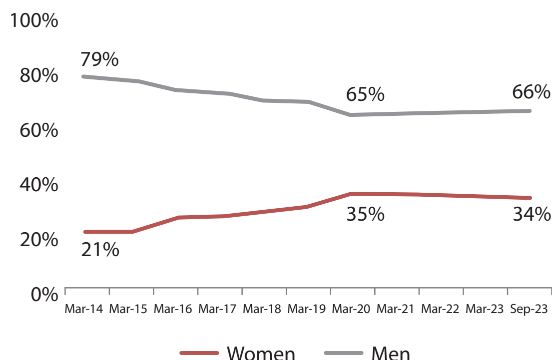

Figure 2.18. Gender segregation of borrower accounts
Source: RBI's Database on Indian Economy, Quarterly BSR-1 (Old edition, Table No. 1.6 – Outstanding credit of scheduled commercial banks according to organisation)

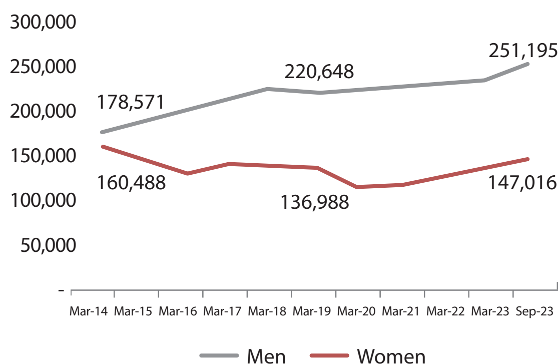

Figure 2.19. Borrowing per capita (₹)

Declining share of Micro and Small Enterprise (MSE) credit: The share of bank credit to MSEs, as well as the credit per MSE borrowing account, has been going down over time (Table 2.6). Many MSEs that are unable to borrow from the banking system are own-account enterprises, which do not employ any paid labour.

Table 2.6. Bank borrowing by micro and small enterprises

	MSE borrowing accounts (in million)	Credit per MSE borrowing account (₹)	MSE share of bank credit (%)
Mar-14	12.6	675,468	13.9%
Mar-15	13.8	696,522	14.4%
Mar-16	20.4	488,446	13.6%
Mar-17	23.2	461,263	13.9%
Mar-18	25.9	443,764	13.5%
Mar-19	27.9	465,589	13.5%
Mar-20	35.3	481,051	13.1%
Mar-21	41.6	420,761	13.8%
Mar-22	26.1	613,845	13.5%
Mar-23	21.0	856,735	13.1%
Dec-23	25.8	809,450	12.8%

Source: RBI Annual Report, various editions

Smaller borrowers pay higher rates: While there may be a perception that small borrowers get highly subsidised credit, the pricing of credit to small borrowers is relatively higher compared to that for larger borrowers. More than 60% of the small borrowers (both by number of accounts and by value of credit) availed loans at rates exceeding 13% (see Appendix Figure A1).

Delivery infrastructure – branches, atms and beyond

More than half the bank branches are in rural and semi-urban areas: As of the end of March 2024, 61% of all bank branches were located in rural and semi-urban areas combined. Of these, 33% were in rural and 28% in semi-urban areas. For RRBs, 91% of branches were in rural and semi-urban areas combined, and 69% in rural alone (Table 2.7). Next, PSBs (32% in rural), SFBs (20% in rural), and PVBs (20% in rural) had 59%, 55%, and 51% branches in rural and semi-urban areas combined, respectively. 61% of all bank branches were located in rural and semi-urban areas combined. Of these, 33% were in rural and 28% in semi-urban areas. For RRBs, 91% of branches were in rural and semi-urban areas

Table 2.7. Bank branches (total and share in each location type), March 2024

	Rural	Semi-urban	Urban	Metropolitan	Total	Share of rural & semi-urban
PSB	53%	53%	58%	55%	54%	52.9%
RRB	28%	11%	5%	1.4%	13%	20.1%
PVB	16%	31%	30%	38%	27%	22.7%
SFB	2.6%	5.7%	5.5%	4.5%	4.4%	4.0%
Foreign	0.2%	0.3%	0.5%	1.2%	0.5%	0.3%
LAB	0.01%	0.1%	0.1%	0.04%	0.05%	0.05%
Payments	0.02%	0.1%	0.10%	0.09%	0.06%	0.04%
Total	100%	100%	100%	100%	100%	100%
Total #	**55,382**	**46,360**	**32,508**	**33,496**	**167,746**	

Source: RBI Bank Branch Statistics

combined, and 69% in rural alone (Table 2.7). Next, PSBs (32% in rural), SFBs (20% in rural), and PVBs (20% in rural) had 59%, 55%, and 51% branches in rural and semi-urban areas combined, respectively.

Significant jump in new-age payments infrastructure: As of March 2024, payments banks had a dominant share (79%) of all microATMs, and PVBs had a 73% share of all Point of Sale (PoS) machines installed in the country (Figure 2.20).

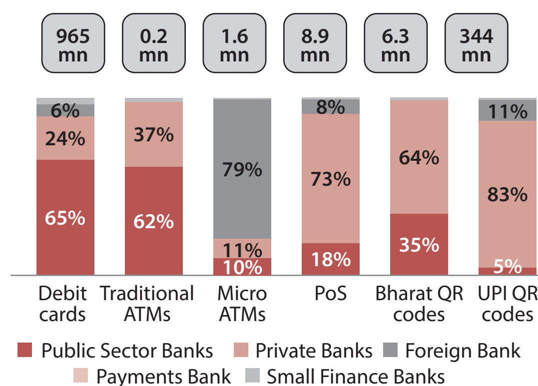

Figure 2.20. Share of different banks in payments infrastructure, March 2024
Source: RBI Bank-wise ATM/POS/ Card Statistics

Table 2.8. Microfinance channels in India (₹ trillion)

Mar-23	Credit outstanding	Share of channels	Share in MFI channel
NBFC-MFIs	1.39		39.7%
NBFC (other than NBFC-MFIs)	0.30		8.4%
sub-total: NBFCs	**1.69**		**48.1%**
Banks (other than SFBs)	1.20		32.2%
SFBs	0.58		16.6%
sub-total: Banks	**1.78**		**50.8%**
Non-profit MFIs	0.04		1.1%
Total MFI channel	3.51	64%	100%
SHG-BLP channel	2.00	36%	
Total Microfinance	**5.51**		

Source: The State of Microfinance in India Report 2023, NABARD and Bharat Microfinance Report 2023, Sa-Dhan

Livelihoods support via microfinance (direct and indirect)

Banks dominate direct and indirect flow of funding to the MFI sector: Of the total industry size of ₹5.51 trillion, Banks and MFIs have direct contribution of ₹3.51 trillion (64%). In the absence of actual data, it is estimated that bank loans account for approximately 50% of the balance sheet of non-bank MFIs (Table 8). Therefore, the exposure of banks to the microfinance sector is estimated to be around 84% (₹4.6 trillion out of ₹5.51 trillion).

RRBs punch above their weight in terms of support to SHGs: Under the SHG-BLP model, as of March 2023, 13.4 million SHGs had savings of ₹589 billion with banks. Of these, 6.9 million SHGs availed credit from banks to the tune of ₹2 trillion. Considering their overall small size, RRBs had a relatively higher share of SHG savings and lending, and lower NPAs (Table 2.9).

Table 2.9. **SHG-Bank Linkage Programme – share of banks, March 2023**

All SHGs	Share in savings		Share in loans		NPA
	No of SHGs	Amount	No of SHGs	Amount	% of SHG loans
Commercial banks	57.8%	58.9%	60.4%	68.7%	2.63%
RRBs	30.2%	30.9%	31.5%	25.6%	2.48%
Co-operative Banks	12.0%	10.2%	8.1%	5.6%	6.15%
Total	**100%**	**100%**	**100%**	**100%**	**2.79%**

Source: The State of Microfinance in India Report 2023, NABARD and Bharat Microfinance Report 2023, Sa-Dhan

The role of cooperative banks in promoting financial inclusion

The cooperative channel has always been a significant contributor to last-mile delivery in the rural areas. While much smaller in size compared to the commercial banking sector, credit cooperatives (banks and societies) have a formidable network of more than 100,000 physical branches in villages across the country and more than approximately 11,000 branches in urban areas.[xviii]

Credit cooperatives dispensing short-term credit in rural areas follow a 2 or 3-tier structure, with Primary Agriculture Credit Societies (PACS) operating at the village level, typically covering 6–7 villages, District Co-operative Central Banks (DCCBs) covering 2–3 districts and State Co-operative Banks (SCBs). In some states, such as those in the Northeast with a 2-tier structure, DCCBs are not present.

An inclusive institution, PACS drive the delivery of credit at the village level. As of the end of March 2022, there were 104,266 PACS, 351 DCCBs (with 13,670 branches), and 34 StCBs (with 2,089 branches) operating in India (based on the latest data from RBI/NAFSCOB). While PACS accept deposits and give loans, they are not regulated by the RBI, unlike DCCBs and StCBs.

By the end of 2021–22, PACS had a total membership of 169 million, of which 48.3 million were borrowers. The borrower-to-member ratio has decreased in recent years, falling to 29% from a peak of 41% in 2014–15. As recently as 2020–21, 39% of members were borrowers. In 2021–22, the average deposits of members were about one-third of the average loan size of ₹33,031. Despite a declining trend in recent years, the high credit-deposits ratio indicates PACS' reliance on external funds to cater to the village-level borrowing requirements.

Table 2.10. **Key statistics related to PACS, 2012–13 to 2021–22**

	2012-13	2013-14	2014-15	2015-16	2016-17	2017-18	2018-19	2019-20	2020-21	2021-22
PACS	90,958	93,024	93,247	93,367	95,595	95,238	95,995	95,509	102,559	104,266
Membership (mn)	110.1	130.1	121.1	127.3	131.2	130.5	132.0	138.2	137.2	169.2
Borrowers (mn)	42.6	48.1	49.9	46.2	52.0	50.7	51.1	52.6	53.7	48.3
Deposits (₹ tn)	0.38	0.82	0.85	1.01	1.16	1.20	1.33	1.65	1.71	1.76
Loans (₹ tn)	0.91	1.30	1.47	1.58	1.70	1.70	1.15	2.12	2.17	1.60
Membership/PACS	1,210	1,399	1,305	1,364	1,373	1,371	1,375	1,447	1,337	1,622
Borrowers (% of members)	39%	37%	41%	36%	40%	39%	39%	38%	39%	29%
Average deposit/ member	3,413	6,294	6,988	7,938	8,830	9,164	10,074	11,977	12,461	10,427
Average loan/borrower	21,387	27,049	29,529	34,294	32,770	33,464	22,533	40,408	40,419	33,031
Credit-Deposit ratio	243%	159%	174%	157%	147%	142%	86%	128%	127%	91%
Overdues (% of loans)	28%	23%	24%	19%	31%	28%	45%	33%	33%	32%

Source: NAFSCOB[xix]

Table 2.11. Member profile of PACS, March 2022

	Composition of members	Composition of borrowers	Share of borrowers in each category
SC	11%	12%	33%
ST	12%	8%	19%
Small farmers	42%	57%	39%
Rural artisans	4%	3%	20%
Others & marginal farmers	32%	20%	18%
Total	100%	100%	29%

Source: NAFSCOB

PACS are inclusive institutions, with a large part of their members and borrowers being small and marginal farmers (Table 2.11). In the 3-tier cooperative structure, PACS at the village-level provide loans, while deposits are collectively mobilised by PACS and the higher tiers of DCCB and StCB. As of March 2023, cooperatives accounted for 45% of all KCCs and 20% of the total loan amounts. Over 75% of DCCB lending is conducted through PACS. In addition to PACS, DCCBs provide funding to Primary Weavers Credit Societies, Multipurpose Credit Societies, Large-sized Adivasis Multipurpose Societies, and affordable housing initiatives.

As of the end of March 2023, there were 1,502 UCBs, many of which operate as single-branch units. UCBs are typically small in size and localised in their operations, although some such as Saraswat Bank, Cosmos Co-operative and SVC Bank have 289, 152 and 198 branches, respectively, across different states.[xx]

UCBs were conceptualised to mobilise savings from middle and low-income urban groups and provide credit to weaker sections. They cater to the needs of small borrowers in the non-agricultural sector. As of the end of March 2023, a bulk of the 1,502 UCBs were small, with over 60% having deposits below ₹1 billion and another 35% with deposits between ₹1 and 10 billion. Only 5.2% UCBs had deposits between ₹10 and 100 billion, and merely six UCBs had deposits over ₹100 billion. The total deposits of UCBs were ₹5.3 trillion and loans and advances were ₹3.3 trillion. Almost 97% of UCBs are non-scheduled banks.

UCBs play a crucial role in providing credit access to urban micro and small enterprises. Of this ₹3.3 trillion, approximately 67% was towards priority sector lending. Due to their urban focus, UCBs allocate around 41% share of their total lending to MSMEs and 9.5% to housing. One-third of their loan portfolio was to micro and small enterprises.[xxi] The total borrower base of UCBs was about 6.7 million as of 2020. In terms of the size of deposits and loans, UCBs are almost as big as RRBs and almost three times the current size of SFBs. They rely on own deposits as the primary source of lending and do not receive refinance support or NABARD's Financial Inclusion Fund for technological upgradation, unlike RRBs or RCBs.

Kisan Credit Cards and General Credit Cards

KCCs for farmers distribute over half of agricultural credit, with RRBs and cooperative banks playing a significant role in their delivery. KCC, as a medium of delivering agricultural credit, has been in existence since 1998. As of the end of March 2023, there were 73.5 million operative KCCs in India, growing at an annualised rate of 1.2% since March 2018.[xxiii] Cooperative banks had a 43% share in operative KCCs but only 21% share in the credit outstanding as of March 2023. The total outstanding KCC credit was ₹8.9 trillion (54% of all agricultural

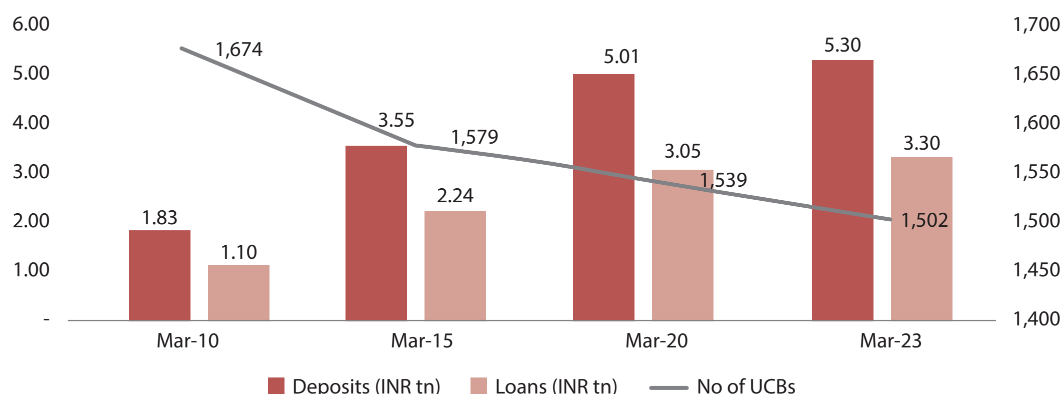

Figure 2.21. Key statistics of UCBs, March 2010 to March 2023
Source: RBI Trends and Progress in Banking Report, December 2023

Table 2.12. Key statistics on KCC, 2018–2023

	Coop. Banks	RRBs	SCBS	Total
Operative KCCs- Mar18 (mn)	33.5	12.2	23.5	69.2
Operative KCCs- Mar23 (mn)	31.4	13.9	28.3	73.5
CAGR (Mar18-Mar23)	-1%	3%	4%	1%
Operative KCCs- Mar23 (% share)	43%	19%	38%	100%
Amount o/s (op. KCC)- Mar18 (₹ tn)	1.2	1.1	4.3	6.7
Amount o/s (op. KCC)- Mar23 (₹ tn)	1.9	1.8	5.2	8.9
CAGR (Mar18-Mar23)	9%	9%	4%	6%
Amount o/s (op. KCC)- Mar23 (% share)	21%	20%	59%	100%
Amount o/s per operative KCC-Mar23 (₹)	60,351	128,352	183,275	120,456
CAGR	10%	7%	0%	5%

Source: RBI Trends and Progress in Banking Report, December 2023

credit) as of March 2023, having grown at a CAGR of 6% from ₹6.7 trillion in March 2018 (65% of all agricultural credit). SCBs had the highest share of credit via KCCs at 59% in March 2023. Per-card credit was lowest for cooperative banks at ₹60,351, followed by RRBs at ₹128,352, and SCBs at 183,275 in March 2023 (Table 2.12). Between March 2018 and March 2023, per-card credit grew 5% overall – 10% for cooperative banks, 7% for RRBs, and remained unchanged for SCBs. Clearly, cooperative banks and RRBs play a significant role in rural credit via KCCs.

General Credit Cards for non-farm occupations: In addition to KCCs, banks issue General Credit Cards (GCCs) to facilitate easier access to credit for artisans and other non-farm workers in rural areas. As of December 2023, there were 5.5 million GCCs in operation with a total outstanding of ₹537 billion. This is a significant drop from 6.7 million GCCs with a total outstanding of ₹1.86 trillion as of December 2022.

PM-Svanidhi

Launched in 2020, the PM-Svanidhi scheme aims to offer full life cycle coverage for street vendors and their families. However, its implementation has been adversely affected by incomplete surveys of street vendors. The scheme provides collateral-free initial micro-credit up to ₹10,000 to street vendors in urban areas at subsidised rates (7% subsidy) and cashback incentives up to ₹1,200 for payments received via digital channels. Upon successful repayment, vendors are eligible for tranche 2 and tranche 3 loans of ₹20,000 and ₹50,000. Given the small scale of each vendor and the quick cash conversion cycle, ₹10,000 seems to be a reasonable entry point for petty trades carried on by street vendors. Over 30% of the credit risk under this scheme is covered by the Credit Guarantee Fund Trust for Micro and Small Enterprises (CGTMSE).

This loan is available to those who have been in street vending since before 2020. According to the Street Vendors Act, 2014 a survey of all street vendors was to be done and ID cards issued. However, not all states have completed the survey, and where the survey has been conducted, unions and hawker federations believe that several street vendors have been left out for various reasons. Completion of surveys has been slow, and there are several exclusions of genuine street vendors as understood from discussions with a street vendor association. According to a document prepared by the government taking note of the three-year progress of the scheme, 50% of urban local bodies (ULBs) had not conducted the identification survey of street vendors by 2020 – six years after the notification of the Street Vendors Act (2014).[xxiv]

Under the SVANidhi se Samriddhi component of the scheme, family members of street vendors who have received the loan are surveyed and linked to other welfare and financial inclusion schemes that provide benefits across the different life stages. These schemes include Pradhan Mantri Jeevan Jyoti Bima Yojana (PMJBY), Pradhan Mantri Suraksha Bima Yojana (PMSBY), Pradhan Mantri Jan Dhan Yojana (PMJDY), Pradhan Mantri Shram Yogi Maan Dhan Yojana, Registration under BoCW, One Nation One Ration Card, Pradhan Mantri Matru Vandana Yojana, and Janani Suraksha Yojana.

As of May 2024, slightly over 6.5 million street vendors have benefitted from the scheme, with loan sanctions totalling ₹125 billion (as of 16th August 2024).[xxv] Detailed profiling for 3.7 million

beneficiaries and their family members has been completed for the above-mentioned schemes.[xxvi] The bulk of the lending is done by public sector banks, although MFIs also contribute. Just the top four contributing banks account for 80% of all sanctions (as of October 2023) – SBI and Bank of Baroda at 31% each, Union Bank of India at 10%, and Punjab National Bank at 8%.[xxvii]

Mudra

The Pradhan Mantri Mudra Yojana (PMMY), launched in 2015, aims to provide collateral-free loans up to ₹1 million to MSMEs through member lending institutions (MLIs; banks, NBFCs, and MFIs). It must be noted that the overdraft facilities of ₹5,000 extended to individuals under the PMJDY savings accounts are also reported under this scheme.[xxviii] MLIs receive extended protection through the Credit Guarantee Fund for Micro Enterprises (CGFME). Loans are provided under three categories: Shishu loans up to ₹50,000, Kishore loans from ₹50,000 to ₹0.5 million, and Tarun loans from ₹0.5 to 1 million.

The share of overall bank credit of the category that could be a proxy for income-generation loans, including credit to MSMEs and large industries (non-agriculture, non-personal, non-financial, and non-all others) dropped from 61.6% in March 2014 to 42.4% in September 2023. During this time, overall credit growth in the economy was 10.1%, while growth for this category was 5.8%. A further segregation by the size of the sanctioned limits shows that distribution of credit is skewed towards larger borrowers (Figure 2.22).

The cumulative annual growth rate of credit for smaller borrowers with limits up to ₹1 million – coinciding with the MUDRA loan limit – was 12.4% over this period. Their share in outstanding credit increased from 3.9% in March 2014 to 6.9% in September 2023. In comparison, credit growth for agriculture and personal loans was 9.5% and 17.7%, respectively. These numbers indicate that the MUDRA scheme has been marginally helpful but has not substantially increased the availability of credit to productive enterprises at the low/ subsistence levels.

For FY 2022–23, the value of total loans disbursed under MUDRA was ₹4.5 trillion. Of this, 48% (₹2.15 trillion) were allocated to women entrepreneurs. Shishu, Tarun, and Kishore loans accounted for 31%, 45%, and 24% of all disbursals, respectovely. Loans to women entrepreneurs, however, were mainly concentrated in the Shishu category with a 79% share by value. Their shares in Kishore and Tarun categories were 46% and 10%, respectively, clearly indicating the concentration of credit to women at lower ticket sizes. The high share of women in Shishu category is due to the inclusion of MFI lending here.

2.6 SUMMARY AND RECOMMENDATIONS

Even if they are still a work in progress, results from India's large-scale efforts in financial inclusion are undoubtedly encouraging. A key factor in this transformation was making good use of the nation's developing innovation and technology ecosystem. NCPI has spearheaded significant infrastructure

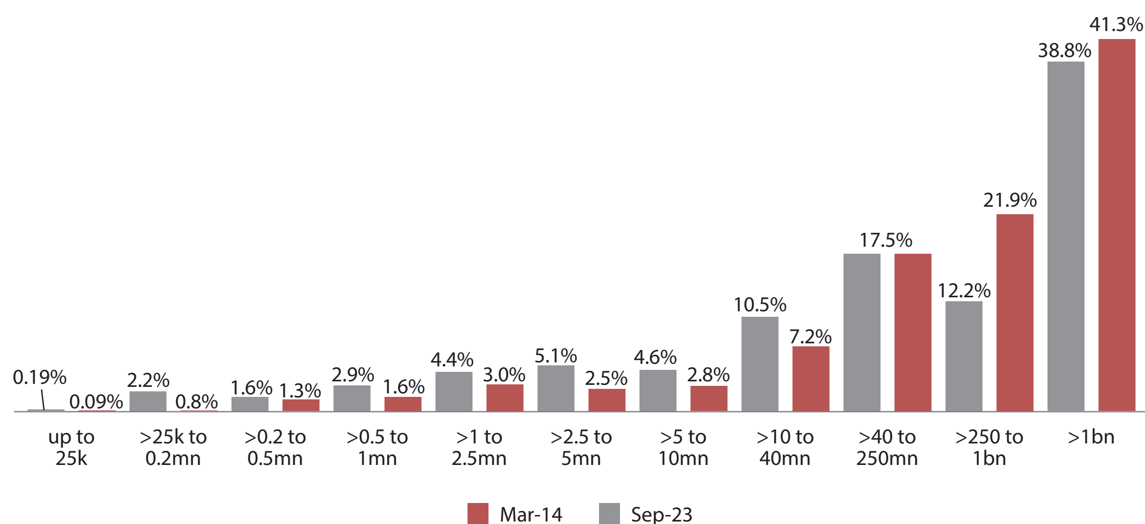

Figure 2.22. Credit-limit-wise share of bank credit, 2014–2023
Source: RBI Basic Statistical Returns, Table 3.4

development on a vast scale, as opposed to the incumbent banks. It's important to build on successes and learn from mistakes. Since the technology that has allowed for the financial sector's phenomenal expansion also has the potential to widen the gap between the haves and the have-nots, it is important to ensure that progress in this area remains inclusive.

This note argues in favour of intensifying efforts to broaden the financial system's inclusivity beyond basic bank account ownership. In terms of credit availability, women, small borrowers, MSEs, and other marginalised groups still have a long way to go. The penetration of risk protection products and pensions for old-age savings, while driven by policy considerations, is crucial for the general well-being of low-income households and requires significantly larger coverage to have a significant impact.

The basic BSBDA/PMJDY accounts allow only four free withdrawals per month. These are not suitable for many occupations, such as street vendors or construction workers, who need to withdraw more frequently to meet their small-value transactional needs. Going forward, the success of this initiative could be measured by how much incremental savings these accounts are able to encourage among account holders and how many have been able to transition to full-service bank accounts. Efforts also need to be made towards graduation to the next level – accounts without overdraft to those with overdraft – and towards Mudra loans as the next step.

PM-Svanidhi is a well-designed scheme, but its implementation has been sub-par due to non-financial issues. It has been adversely affected by incomplete surveys of street vendors in many urban areas which should be prioritised.

Financial institutions, notably banks, don't have a robust and customer-friendly grievance redressal mechanism. Low-income and illiterate citizens often hesitate to voice their dissatisfaction with the services received. They are not technologically savvy, and the procedures to lodge complaints are cumbersome.[2] According to the RBI's 2022–2023 Annual Report on Ombudsman Services, only 14.4% of complaints were submitted in physical letter form – the rest were received by email or via an online complaint portal. In 2022–2023, only 11.7% of the complaints came from rural areas. These two data points indicate that the vulnerable and economically disadvantaged cannot effectively use the grievance redressal mechanisms currently in place.

Financial literacy is important and needs to be continuously prioritised. Due to their close ties to the poor, Civil Society Organisations (CSOs) can greatly benefit from investments made to increase their capacity, which will ultimately lead to the desired results of widespread financial inclusion.

While there are bank-sponsored Financial Literacy Centres (FLCs) and RBI-selected NGOs operating Centres for Financial Literacy (CFL) in rural areas, there is no dedicated financial awareness and capability-building programme for urban low-income segments, especially street vendors. A similar programme is needed for such FLCs/CFLs to work together with ULBs and engage street vendors, gig workers, domestic workers, and other informal sector workers.

Revitalising the RRBs, designing products appropriately, protecting consumers, and promoting financial literacy are all important in rural areas. RRBs are strong in last-mile service delivery to the low-income segments but are weak in leveraging technology, as IT is controlled by their sponsor banks. Technology-enabled new product creation should address the digital gap affecting less educated and low-income populations. Urban areas should also prioritise financial literacy, consumer protection, supporting street sellers, and including workers in the informal sector.

Cooperatives (banks) in both the rural and urban areas are plagued by high levels of non-performing assets and governance issues that need to be addressed. Despite having a large branch network and strong on-ground connection with consumers, they have not realised their full potential. Overall, the banking system plays a crucial role in the microfinance movement in the country – both directly and indirectly.

The informal financial system remains crucial for the economically disadvantaged due to the significant non-financial expenses associated with interacting with the formal system. Financial institutions are not well trusted, particularly by lower-income and less-educated populations. Transaction failures at critical junctures, such as government-to-citizen transfers during COVID-19, must be addressed to maintain confidence in the system.

India's financial inclusion journey is off to a great start and the scale of achievements is unprecedented. This itself is motivating for all stakeholders – policymakers, regulators, and the private sector – to approach the newer challenges with fresh rigour. The analysis in this note paints a picture of hope rather than despair.

[2] https://idronline.org/article/advocacy-government/the-grievance-redressal-process-for-banks-excludes-many-indians/

APPENDIX

Table A.1. Year-wise saving in financial assets

Category	Asset	2013-14	2014-15	2015-16	2016-17	2017-18	2018-19	2019-20	2020-21	2021-22	2022-23	CAGR (FY14-23)
Overall	Total saving in financial assets (in trillion)	11.9	12.6	15.0	16.1	20.6	22.6	23.2	30.7	26.1	29.7	10.7%
Short	currency	8.4%	10.6%	13.4%	-20.6%	23.6%	12.3%	12.2%	12.5%	10.3%	8.0%	10.2%
	trade debt, net	0.4%	0.3%	0.3%	0.3%	0.2%	0.2%	0.2%	0.1%	0.2%	0.3%	6.6%
	Sub-total	**8.8%**	**10.9%**	**13.7%**	**20.3%**	**23.8%**	**12.5%**	**12.3%**	**12.6%**	**10.5%**	**8.3%**	**10.0%**
Short-to-mid	deposits with banks	50.3%	42.9%	37.9%	53.9%	24.6%	32.2%	33.1%	37.4%	29.4%	33.4%	5.8%
	deposits with non-banking companies	1.9%	2.3%	1.2%	2.2%	0.0%	1.5%	2.4%	1.3%	1.8%	2.3%	12.8%
	deposits with co-operative banks & societies	3.4%	3.2%	3.7%	4.2%	0.8%	2.1%	2.5%	1.7%	0.6%	1.3%	-0.2%
	Sub-total	**55.6%**	**48.4%**	**42.8%**	**60.3%**	**25.3%**	**35.8%**	**38.1%**	**40.5%**	**31.8%**	**37.0%**	**5.8%**
Mid-to-long	shares & debentures- mutual funds	1.3%	1.2%	1.3%	9.3%	6.7%	6.7%	2.7%	2.1%	6.1%	6.0%	31.7%
	shares & debentures- pvt corporate co's	0.3%	0.4%	0.6%	1.4%	1.9%	0.9%	1.4%	1.4%	2.0%	0.9%	24.7%
	shares & debentures-co-operative bks & soc's	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	3.3%
	Sub-total	**1.6%**	**1.6%**	**1.9%**	**10.8%**	**8.6%**	**7.6%**	**4.1%**	**3.5%**	**8.2%**	**6.9%**	**30.4%**
Long	provident & pension funds	14.9%	15.2%	19.4%	20.2%	18.0%	17.9%	19.5%	16.2%	21.1%	21.1%	15.0%
	life insurance funds	18.2%	23.6%	17.3%	21.7%	16.5%	16.9%	14.2%	18.3%	18.2%	18.2%	10.7%
	investment in small savings etc	0.7%	0.1%	3.6%	6.9%	7.4%	9.1%	11.3%	8.1%	9.2%	8.0%	45.3%
	state insurance	0.3%	0.3%	0.3%	0.3%	0.3%	0.3%	0.3%	0.3%	0.4%	0.3%	12.4%
	investment in government securities	1.2%	0.0%	0.9%	0.3%	0.1%	0.1%	0.1%	0.6%	0.5%	0.3%	-6.1%
	postal insurance	-1.3%	-0.1%	0.1%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	-0.1%	-20.2%
	Sub-total	**34.0%**	**39.1%**	**41.6%**	**49.3%**	**42.3%**	**44.1%**	**45.5%**	**43.4%**	**49.6%**	**47.8%**	**15.0%**
Total saving in financial assets (%)		100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	

Source: Statement 5.3, National Accounts Statistics 2024.[xxix]

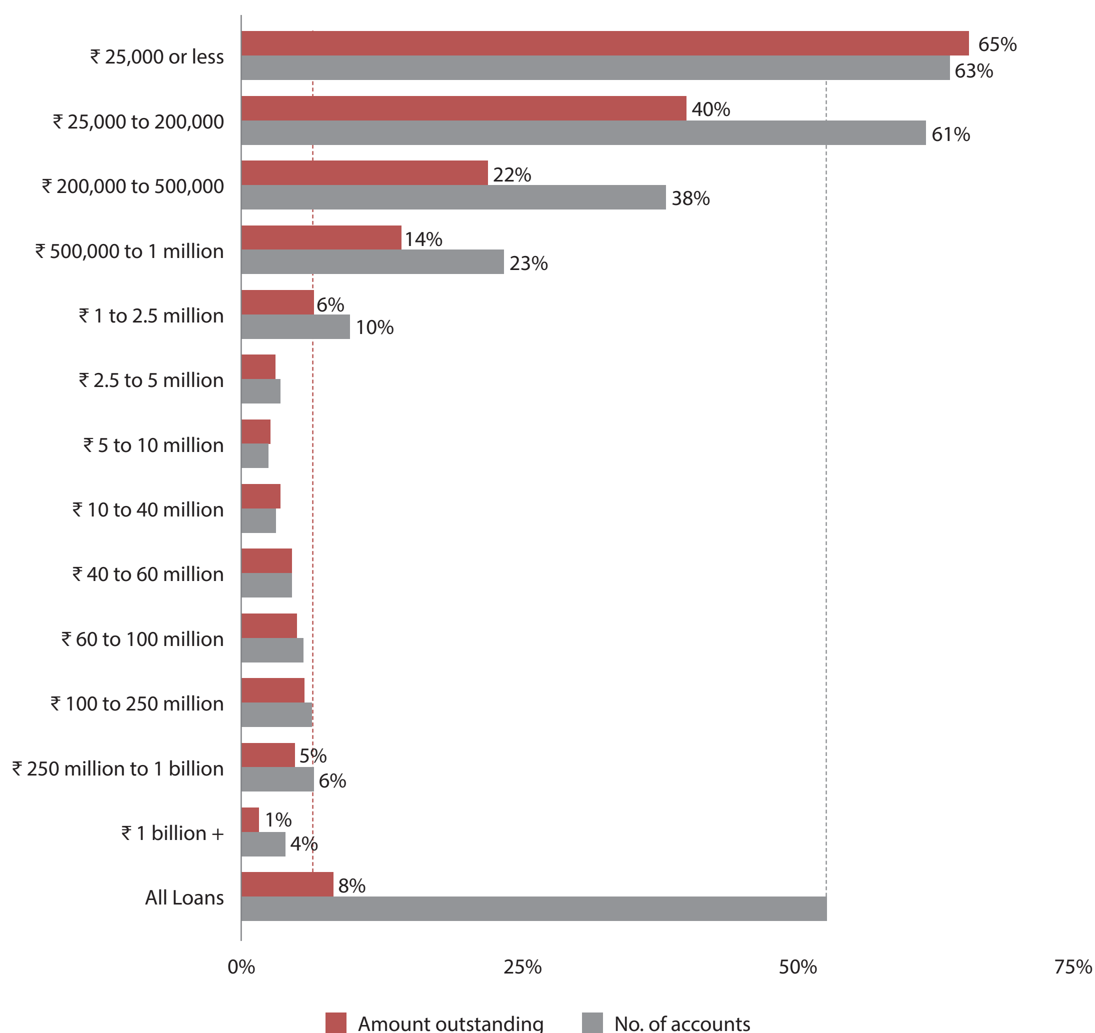

Figure A.1. Share of credit at interest rates 13% and above (per annum)
Source: RBI Basic Statistical Returns, Table 2.5

Table A.2. Saving and borrowing behaviour (% age 15+)

	2011	2014	2017	2021
Saved any money		38%	34%	24%
Saved at a financial institution	12%	14%	20%	13%
Saved for old age		10%	11%	9%
Saved using a savings club or a person outside the family	3%	9%	8%	8%
Borrowed any money		48%	42%	45%
Borrowed any money from a formal financial institution or using a mobile money account				13%
Borrowed for health or medical purposes		21%	14%	25%
Borrowed from a formal financial institution	8%	9%	8%	12%
Borrowed from family or friends	20%	32	33%	31%

Source: World Bank Findex

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ii Source: Annual Report- Department of Financial Services, GoI. Insurance penetration is measured as the percentage of insurance premiums to GDP. Another measure, insurance density, calculated as the ratio of premium to population was at US$ 91 per person. Globally, insurance penetration and density in 2021–22 were 3% and US$ 382 for the life segment, and 3.9% and US$ 492 for the non-life segment, respectively.

iii Available here: https://mospi.gov.in/publication/national-accounts-statistics-2024; categorisation of assets done by the author)

iv https://data.worldbank.org/?locations=IN-XN

v DFID (Department for International Development) (1999) Sustainable Livelihoods Guidance Sheets.

vi https://rural.gov.in/en/press-release/rural-self-employment-training-institutes

vii Co-operative banking follows a 3-tier structure: PACS < District Co-operative Central Banks < State Co-operative Banks

viii Where available, the latest data from RBI for September 2023 has been used in this note.

ix https://www.npci.org.in/PDF/npci/statics/Retail-Payments-Statistics-May24.pdf

x An improved version of BSBDA accounts with additional accompanying financial products such as overdraft facility, and low-priced accident insurance and life insurance was launched in 2014 as Pradhan Mantri Jan Dhan Yojana accounts (PMJDY).

xi Only one account per family is eligible for an overdraft account – https://sbi.co.in/web/faq-s/faq-pradhan-mantri-jan-dhan-yojana-pmjdy

xii RRB figures for March 23; rest are for September 23.

xiii Data on this aspect for all banks including RRBs is collected by RBI on an annual basis only. Last available annual data is for March 2023.

xiv An average annual inflation rate of 6% has been taken to keep the calculations simple.

xv https://www.rbi.org.in/Scripts/NotificationUser.aspx?Id=11959&Mode=0

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xviii Urban branches taken from this source: https://pib.gov.in/PressReleseDetail.aspx?PRID=2010318#:~:text=At%20present%2C%20there%20are%20over,number%20of%20branches%20exceeding%2011%2C000.

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SHG Bank Linkage Programme - The Marathon Continues

Girija Srinivasan

3

3.1. INTRODUCTION

The Self Help Group (SHG) bank linkage movement, started in 1982 as a pilot project to link unregistered groups of the poor with the banking system, has now reached 178 million households. Currently 14.42 million SHGs are savings-linked, of which 7.74 million SHGs are credit linked. As of 31 March 2024, bank loans outstanding for SHGs totalled ₹2596 billion. The National Bank for Agriculture and Rural Development (NABARD) data indicates that 8.30 million SHGs (58%) are part of the National Rural Livelihoods Mission (NRLM).

Andhra Pradesh and Telangana remain among the top five states for the number of SHGs with savings accounts, credit disbursement share, savings share, and outstanding credit. While traditionally dominant in the Southern region, the SHG movement has seen growth in the Eastern region, which now has the highest number of savings-linked SHGs. Bihar has a high share of savings and credit-linked groups, and West Bengal leads in credit disbursed. The geographical skew is getting remedied with the spread of the movement in other states continuing at a vigourous space.

Under the NRLM, SHG mobilisation is nearing completion in most states, and bank linkages for NRLM groups are progressing smoothly. Supported by Reserve Bank of India's (RBI's) policies and a high-quality loan portfolio with low NPAs, bankers have extended full support in most geographical areas. Systems have been established for community institutions to sustain these bank linkages. While SHG bank linkage continues to be the focus, individual enterprise financing took a definitive step with the launch of a special product by SBI. Since SBI is the largest lender to SHGs, holding 35% of loan book, this initiative if implemented well can lead to a successful model of graduating women entrepreneurs to be direct customers of banks. On Independence Day 2023, the Prime Minister formally announced the Lakhpati Didi initiative. The major focus last year has been putting in place the strategy to ensure 30 million women are lakhpati didis by March 2025.

3.2. TRENDS IN SHG GROWTH AND FINANCIAL PERFORMANCE

This section analyses the trend in SHG bank linkage performance using NABARD's annual publication to ensure consistency and continuity with earlier Inclusive Finance India reports. The author acknowledges that there are significant data differences between NABARD publications and the NRLM portal. NABARD collects annual data from banks, whereas NRLM receives raw data from bank's core systems, which is then uploaded to the NRLM system. Given that both sources rely on banks, it would be beneficial for NABARD and the mission to reconcile these data sets.

SHGs with bank savings accounts

In 2023–24, 1.02 million new SHGs were formed, with 0.75 million being all-women groups, indicating the formation of 0.26 million mixed SHGs (**Table 3.1** below). NRLM, leading in SHG mobilisation, contributed to the formation of 0.23 million out of these 1.02 million SHGs. However, it remains unclear under which other project or programmes the remaining SHGs were mobilised. SHG mobilisation is still concentrated in rural areas, with only 0.7 million SHGs mobilised in urban areas out of total of 14.42 million and no new SHGs formed in urban areas in the past year. Some of the state data will need re verification since other than

Table 3.1. SHG Savings Accounts with Banks

Item	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
Total no. of SHGs (million)	7.69	7.9	8.57	8.74	10.01	10.24	11.22	11.893	13.403	14.422
Y-o-Y growth	3.59%	2.68%	8.53%	1.95%	14.52%	2.29%	9.57%	5.97%	12.70%	7.60%
Total no. of exclusively women SHGs (million)	6.65	6.76	7.32	7.39	8.53	8.83	9.72	10.41	11.292	12.04
% of all women SHGs	86.41%	85.58%	85.37%	84.52%	85.19%	86.22%	86.65%	87.45%	84.25%	83.52%
Y-o-Y growth	6.38%	1.68%	8.27%	0.93%	15.44%	3.53%	10.11%	6.99%	8.58%	6.66%
SHGs under DAY-NRLM (million)	3.05	3.45	3.74	4.18	5.58	5.78	6.47	7.184	8.201	8.43
% of SHGs under DAY-NRLM	39.65%	43.74%	43.65%	47.85%	55.72%	56.52%	57.72%	60.40%	61.19%	58.46%
Y-o-Y growth	34.92%	13.27%	8.30%	11.75%	33.37%	3.75%	11.90%	10.89%	61.19%	2.79%
SHGs under DAY-NULM (million)		0.44	0.54	0.42	0.43	0.46	0.52	0.581	0.739	0.739
% of SHGs under DAY-NULM		5.64%	6.37%	4.86%	4.38%	4.58%	4.71%	4.89%	5.51%	5.12%
Y-o-Y growth	155	3.00%	22.42%	(–22.16%)	3.29%	6.83%	12.79%	9.87%	27.11%	0%

Source: Status of Micro Finance in India reports, NABARD (2021) and (2024)

NRLM there are not many large scale mobilisors. Moreover, the mobilisation of mixed/male SHGs warrants validation, as the percentage of women SHGs decreased from 86.65% in 2021 to 83.52% in 2024, and it is well proven that male/mixed SHGs have limited sustainability. NABARD being the apex institution that spearheaded SHG movement in the country is uniquely placed to bring out more incisive analysis on the outreach of SHGs.

A regional comparison of SHG growth over the past year indicates an increase in SHG numbers across all regions, with the Central region experiencing the highest growth (**Figure 3.1** below). Notably, the Eastern region now leads with 4.35 million SHGs, surpassing the Southern region at 4.29 million. The Southern region saw minimal growth, attributed to near saturation in this region. Among individual states, Maharashtra leads with 1.63 million groups, followed by West Bengal (1.58 million SHGs), Bihar (1.26 million SHGs), Tamil Nadu (1.14 million SHGs), and Andhra Pradesh (1.10 million SHGs). Bihar reported the highest increase in new SHGs added during the year at 153,960 SHGs, followed closely by West Bengal at 131,465 SHGs. However, Gujarat, Rajasthan, and Meghalaya experienced a decline in SHG numbers.

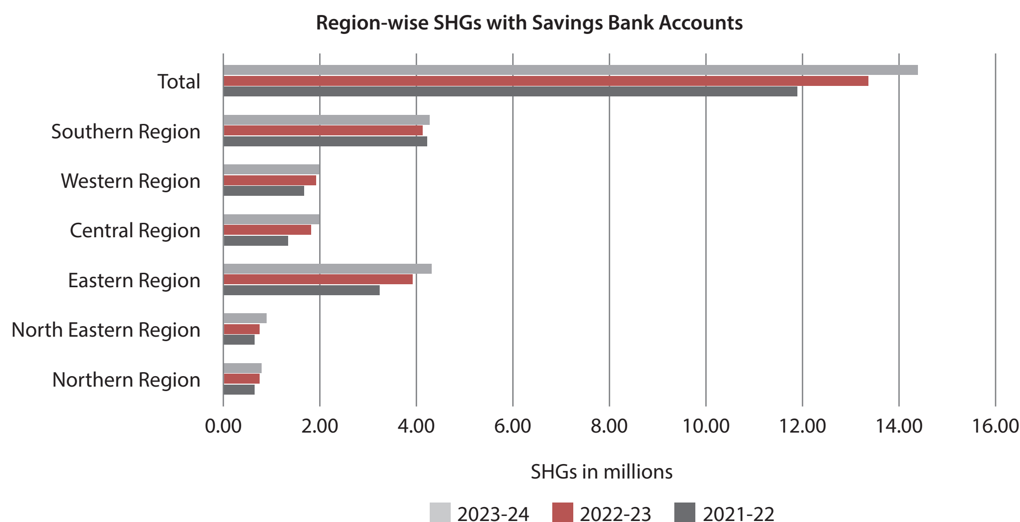

Figure 3.1. Region-wise SHGs

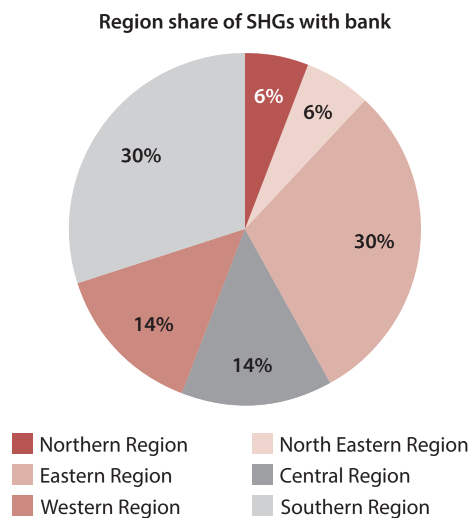

Figure 3.2. Regional Share of SHGs

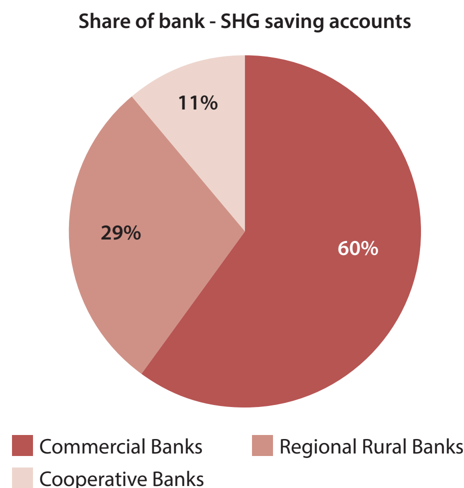

Figure 3.3. Bank Share of SHG Accounts

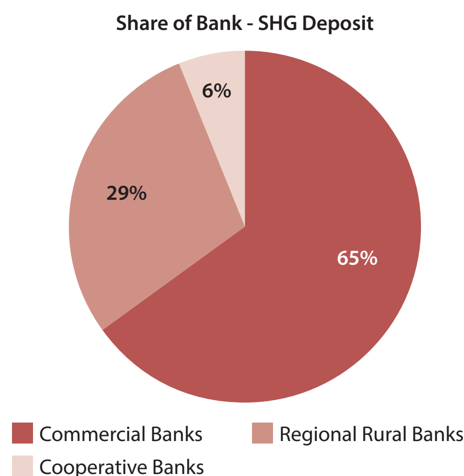

Figure 3.4. Share of SHG savings

Foot print of the SHG movement in relation to the rural population

The *Access Knowledge* Series documenting three decades of the SHG movement has anlaysed the share of SHGs in each state compared to the state's rural population and concludes that states such as Bihar, West Bengal, Tamil Nadu, Karnataka, Andhra Pradesh, and Telangana had a higher concentration of savings groups compared to their rural population share. However, other states like Uttar Pradesh show a significant gap between rural population share and SHG coverage. Other large states with notable gaps include Madhya Pradesh, Rajasthan, and Gujarat. Despite these disparities, geographic coverage has broadened over the past decade, moving beyond the skewed spread seen in the SHG movement's early years. *In the last 10 years the movement has covered large parts of the country and only a few mainstream states have shortfalls in coverage, but even in these states the recent evidence shows that the programme is gathering pace.* Another dimension of the geographical variation is the disparity in savings and credit intensity among SHGs. States like Andhra Pradesh and Telangana stand out with the highest average savings and credit per SHG nationwide. Groups in West Bengal and Odisha have also saved above the national average, while Tamil Nadu and Kerala report high average outstanding credit. Goa, though having fewer SHGs, also has a high average credit outstanding per group.

Savings in SHGs

SHG members save at every meeting (either weekly or monthly), with the amount of savings per member determined by the group, which is considered compulsory savings. Very few groups do additional voluntary savings due to the complications in accounts keeping. The compulsory savings mobilised by some of the older groups especially in south India is very high at Rs.1000 per member per month. The savings mobilised are lent out among the members and idle cash is deposited at the banks. However, the data captured reflects the bank deposits of SHGs, rather than the gross savings the at SHG level.

In the year 2023–24 , the amount of SHG savings at banks increased by 10.52%, rising from ₹588,920 million in 2022–23 to ₹650,890 million. The average per SHG savings (table – 3.2) increased by 14% from INR39,721 in 21-22 to INR45,132 in 23-24; while year on year increase in savings amount in 23-24 is 2.71%. The all women SHG have contributed 5.28% increase in their savings with banks. Under the NRLM while the number of groups have registered a growth of 2.79% in 23-24, the savings with the banks have increased by 21.27%.

Table 3.2. Average Savings of SHGs with Banks

Category of Agency	Average Savings of SHGs with Banks (in ₹)		
	2023–24	2022–23	Change (%)
Commercial Banks	48,282	44,743	7.91%
Regional Rural Banks	46,210	44,969	2.76%
Cooperative Banks	23,992	37,450	–35.94%
Total	**45,132**	**43,940**	**2.71%**

Source: Status of Micro Finance in India reports, NABARD (2021) and (2024)

Region-wise data shows that the average savings for the year 2023-24 increased across all regions except for the Southern and Western regions. However, the Southern region still recorded the highest average savings per SHG at ₹68,636, while the Northern region at the lowest, with ₹17,503 per SHG. Andhra Pradesh and West Bengal have the highest cumulative savings amounts among individual states. The Southern region, holding 29.71% of all SHGs, has 45% of the total savings of SHGs in banks, while the Eastern region holds 30% of SHGs and has 33% of the savings. In comparison, the Western region, which has 13% of the groups, has only 6.73% of the savings, indicating efficient utilisation. The Central region, holding 14% of the groups, has 9.5% of the savings.

While NABARD data captures the savings deposited with the banks, the data does not track the cumulative savings at the SHG level. The increase in savings at the banks is not a good indicator; this is primarily due to the insistence of many banks to keep a portion of the savings as a lien against the increasing loan amount to ensure that the groups repay on time. The other reason is the lack of livelihood opportunities in agricultural off season when members are hesitant to borrow. Traditionally tribal and PVTG SHGs have large deposits at bank.

Member Savings in SHGs;

It is difficult to capture the trend in member savings since there is no reliable data available nation wide. It is a matter of concern that the country which is a powerhouse in IT services has not been able to put in place a system to capture complete data on SHGs even after 32 years.

SHGs were savings led organisations. In early years there was lot of emphasis on savings and with the banks generally reluctant to lend, promoting institutions often advocated for a yearly increase in mandatory savings. SHGs have not evolved into strong savings-based institutions. One reason is pro poor policy makers making available revolving fund grants from Governments and donors with a strong conviction that poor cannot mobilise adequate savings for investments and thus require catalytic external resources. The other reason is the dilution of norms for bank loans, reducing the previous emphasis on savings as a basis for leveraging bank loans.

The other issue is return on savings. There is no fixed interest on savings in the SHGs. Many SHGs regularly distribute savings and profits every 5 to 7 years and it is seen that well functional SHGs, with good rotation of savings as loans and good repayments, are able to get a return of 15%. However, returns can be low or even negative if funds are poorly managed. Lack of liquidity in savings with SHGs, and cornering of loans and other benefits by leaders and elite members in some groups are other reasons. A deeper study into member savings in SHGs would help address these challenges and support stronger financial outcomes for members.

However, the current discourse is not so much on savings mobilisation but on credit utilisation out of different sources. More over, in some of the southern states where large quantum of bank loans are available at heavily subsidised interest, women prefer to borrow from bank rather than taking higher-cost loans from savings. With increasing loan sizes, banks are also insisting on bank deposits as a lien. It is time to revisit policies that disrupt savings mobilisation. A higher level of savings builds members' equity and their ability to repay loans in case of any disruptions in cash flow. There should be a renewed focus on internal savings mobilisation at policy level.

Apart from increasing savings in SHGs, there are other avenues for mobilising individual savings of women. With Jan dhan accounts being opened and digital cash transfer system in place for women SHG members (especially at the time of COVID 19 pandemic) the women under stand the utility of bank accounts and options of other saving instruments. Deploying bank sakhis under the 'one Gram Panchayat one sakhi' scheme of NRLM should involve coordinated efforts from State Rural Livelihoods Missions (SRLMs), banks, and CLFs to mobilise additional member savings with suitable products to help women build assets. Other secure options with better returns than standard savings account of the banks should also be explored. NRLM and other promoting institutions should undertake savings mobilisation on a campaign mode every year and also incorporate savings opportunities as part of financial literacy trainings.

Credit Disbursement by Banks

In 2023–24, banks disbursed a total of ₹2.09 trillion to 5.48 million SHGs, registering a 44% increase in credit dispersed and 28% in the numbers of SHGs. Although NRLM groups represent 58% of all SHGs, they accounted for 82% of the groups receiving loans and 81% of the total loan disbursed, reflecting their vibrancy. This also reflects a greater willingness of the banks to extend credit due to the significant effort undertaken by NRLM and SRLMs in ensuring credit linkages for the self help groups.

The RBI and NABARD issue guidelines for banks on offering financial services to SHGs, including account opening, lending to groups and individuals and reporting. RBI and NABARD have distinct financing guidelines for NRLM groups, with NRLM working closely with the RBI to ensure sufficient financing for SHGs through policies tailored for mission-promoted institutions. RBI has taken a pro active approach to encourage development lending while maintaining safeguards for high-quality loan performance. The policy for banks includes: (a) a focus on repeat and multiple credit disbursements for livelihood enhancement, with flexibility for banks to offer term loans or cash credit limits; (b) increased credit multipliers of 6 to 8 times the group's corpus, comprising revolving funds, SHG savings, and other accumulated income; and (c) collateral-free loans up to ₹2 million with Credit Guarantee Fund Trust for Micro and Small Enterprises (CGTMSE) guarantee coverage. The guidelines also specify the interest subvention available to the groups under NRLM. RBI's guidelines on setting limits for each credit cycle have contributed to the growing size of loans to SHGs.

Banks have also shown a growing interest in SHG loans in different states. SRLMs as well as civil society organisations indicate that banks are actively seeking more business with the self-help groups. The primary reason is the excellent repayment performance that they have experienced in lending to the SHGs.

Regional Performance

Regionally, all areas reported increases in loan disbursements, with the highest growth rate observed in the Northeastern region (68%), followed by the Northern and Central regions (54%; **Figure 3.5**). In terms of number of SHG credit linked eastern region with 44% followed by north eastern and central regions at 43% registered the maximum growth. The southern and Eastern regions are now the fore runners acquiring a substantial share in the program. The Eastern region accounts for 43% of the SHGs credit-linked during the year, followed by the Southern region with 38%. The Southern region has the largest share of total credit disbursement at 63%, followed by the Eastern region at 24.6%. The top-performing states in loans disbursed in 2023–24 are Andhra Pradesh (₹597 billion), Karnataka (₹252 billion), Telangana (₹209 billion), and West Bengal (₹206 billion).

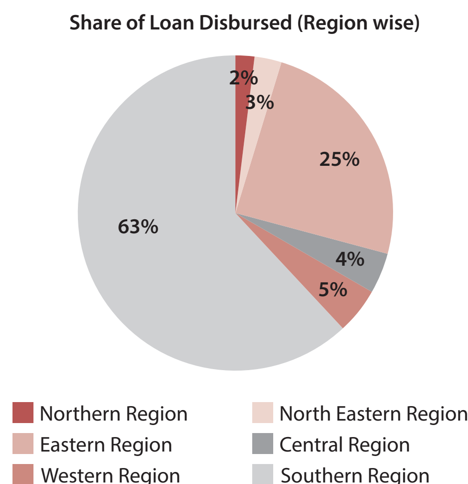

Figure 3.5. Regional share of loans disbursed

Average Loan Disbursed

The average loan disbursed per SHG has increased by 13% from 2022–23, reaching ₹3,81,758 per SHG. The Southern region's average loan size is almost 80% higher than the national average (Table 3.3), while all other regions fall below this average. Among states, Andhra Pradesh tops the list with ₹0.88 million per SHG, followed by Kerala (₹0.77 million) and Tamil Nadu (₹0.67 million). In Uttarakhand (₹ 0.13 million) Uttar Pradesh (₹0.16 million) and Bihar (₹0.16 million) the loans disbursed were much lower than the national average.

Table 3.3. Region-wise Average Loan Disbursed per SHG (2021–22 to 2023–24)

Region	2021–22	2022–23	2023–24
Northern region	1,47,239	2,00,559	2,29,916
Northeastern region	1,94,618	2,53,850	2,97,350
Eastern region	1,97,385	2,04,229	2,17,981
Central region	1,17,720	1,66,574	1,94,970
Western region	1,59,509	2,47,077	3,05,181
Southern region	4,33,894	5,05,779	6,32,909
Total	**2,93,471**	**3,38,027**	**3,81,758**

Source: Status of Micro Finance in India reports, NABARD (2021) and (2024)

There are concerns that the increase in loan size may not match the inflationary trends and despite the larger size of loans, the borrowers may not be getting loan sizes needed for investments. However, loan growth rates have consistently outpaced consumer price index (CPI) changes: for instance, while the CPI rose by 5% last year, loan sizes increased by 13%. However, it is difficult to ascertain whether the loans offered are adequate in size to support livelihood/enterprise activity. Assuming there are 12 members in a group, the loan size of INR 0.38 million translates into Rs.30,000 per member which is not high considering the livelihood investments required. Although NRLM groups have access to additional funds like revolving funds and community investment funds (CIF), the management information system (MIS) does not currently track the average loan size per member from various sources. More over, studies also indicate that as groups mature lesser numbers of members are availing larger amounts of loans. 3ie, in the briefing note on Impacts of the National Rural Livelihoods Project on financial inclusion[1] note that "Older and federated SHGs naturally gave out higher loan amounts. However, older SHGs lent higher amounts to fewer members, while younger SHGs gave lower amounts to more members".

As far as the banks are concerned[2], in the Southern region, cooperative banks provided an average credit of ₹0.70 million per SHG, compared to ₹0.10 million in the Central region. In the southern region all agencies provided on an average credit of ₹0.70 million per SHG. Except in the southern region the average per SHG credit disbursement by RRBs was in the range of ₹0.18 million to ₹0.32 million. The average loan disbursed by all the agencies is the lowest in the central region followed by Eastern and northern regions.

Savings to Credit Multiplier

Banks follow two distinct guidelines for lending: one under the NRLM and the other under the SHG bank linkage programme. The key differences are a) savings to credit ratio and b) interest subvention availability. However in practice the guidelines issued under NRLM for setting loan limits for initial and subsequent loan cycles are largely followed by the banks. Currently banks consider the groups' loan requirements and performance metrics to decide the loan amount without applying a very strict savings to loan ratio. SHGs that have utilised 2 to 3 cycles of loans tend to receive larger size loans from the banks. The groups' lending plans and also threshold established by the RBI are followed largely in determining loan sizes. As of March 2023 the ratio of average loan outstanding to average savings at the bank was 8.45 at the all India level. (This credit multiplier calculation does not include actual savings or group corpus, as these figures are unavailable. It only considers SHG bank savings and the average loan disbursed during the year).

Few of the southern states have very high credit multiplier: Tamil Nadu (26), Kerala (25.6) top the list. While Andhra and Telengana have high loan disbursement and loan outstanding to SHGs, the credit multiplier is only 5.6 and 6.2 since the average savings of the SHGs with the banks is high. Banks reportedly insist on savings deposits since the average loan is high; moreover the states have zero interest bank loan policy with the result that women members prefer to borrow from bank loans rather than from the savings which are lent out at 1 to 2 percent. Central (6.3) and eastern (4.4) regions have low credit multipliers.

Performance of Banks in Loan Disbursement

Bank loan disbursement data indicate that commercial banks were the leading financiers for SHGs in 2023–24. They provided loans to 62% of the SHGs that received financing during the year, disbursing 68% of the total loan amount. Meanwhile, RRBs had a 35% share in the number of SHGs receiving loans, but their share of the total loan amount was notably lower at 27%.

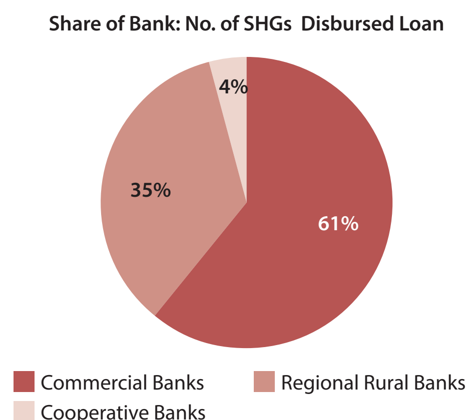

Figure 3.6. Share of Banks in Loan Disbursement to Numbers of SHGs

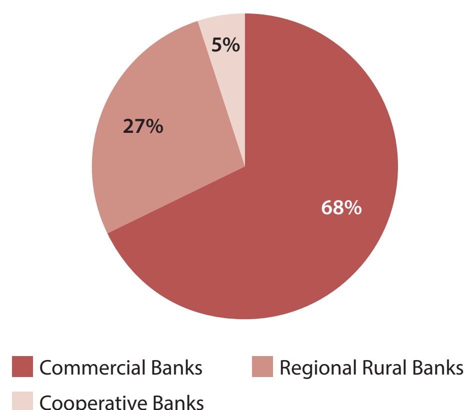

Figure 3.7. Share of Banks in Loan Amount Disbursed

Among all the banks, the State Bank of India linked 1.01 million SHGs and contributed to 35% of the groups that were credit linked during the year followed by Union bank of India at 0.39 million. Among private-sector commercial banks, HDFC Bank topped with 0.21 million SHG linkages. In the RRB sector, Andhra Pradesh Gramya Vikas bank led with 0.13 million SHG linkages. Commercial banks were most active in the Western and Southern regions, with a significant share of credit-linked SHGs at 83% and 76%, respectively. RRBs dominated in the Eastern region, holding a 51% share of credit-linked SHGs. RRBs were also active in Central and Northeastern regions with a 41% share of credit-linked SHGs. Cooperative banks held a 7% share in the Western region but had a less than 5% share in all other regions.

Credit Outstanding

As on 31 March 2024, a total of 7.74 million SHGs had loan outstanding of ₹2596 billions (table 3.4). The overall growth is 11.28% in numbers of SHGs and 38% in amount outstanding. The share of women SHGs is high with 94% of SHGs that have outstanding loan being women SHGs cornering 95% of the loans that are outstanding. 78% of the groups are those of NRLM with 79% of the total credit outstanding. NRLM groups have registered a growth of 10% in numbers and a 37.63% increase in the outstanding loan amount. Among states, West Bengal had the highest number of SHGs with outstanding loans, at 1.06 million, followed by Andhra Pradesh (0.97 million), Bihar (0.96 million), and Karnataka (0.88 million).

Table 3.4. Progress under SHG-Bank Linkage Programme (2021–22 to 2023–24)

Item		2021–22		2022–23		2023–24	
		No. of SHGs (in million)	Amount (₹ in billion)	No. of SHGs (in million)	Amount (₹ in billion)	No. of SHGs (in million)	Amount (₹ in billion)
Loans outstanding against SHGs as on 31st March	Total No. of SHGs linked	6.74	1,510.51	6.96	1,880.79	7.74	2,596.64
	YoY Growth	16.61%	46.24%	3.22%	24.51%	11.28%	38.06%
	No. of all Women SHGs linked	6.27	1,422.89	6.52	1,794.68	7.23	2,468.95
	YoY Growth	17.96%	47.30%	3.99%	26.13%	10.96%	37.57%
	% of Women SHGs	92.95	94.2	93.65	95.42	93.39	95.08
	Of which NRLM/ SGSY	4.45	942.32	5.55	1,505.07	6.10	2,071.38
	YoY Growth	31.87%	64.35%	24.48%	59.72%	10.06%	37.63%
	% of NRLM/ SGSY groups to Total	66.09	62.38	79.7	80.02	78.82	79.77
	Of which NULM/ SJSRY	0.33	76.09	0.34	110.77	0.39	153.14
	YoY Growth	46.52%	87.57%	4.59%	45.59%	15.32%	38.24%
	% of NULM/ SJSRY groups to Total	4.85	5.04	4.91	5.89	5.09	5.9

Source: Status of Micro Finance in India reports, NABARD (2021) and (2024)

The matter of concern is that out of 14.42 million savings linked SHGs, only 53.68% have loans outstanding with the banks. Some states perform better than the national average in credit linkage: Karnataka leads with a 98% credit linkage rate, followed by Telangana (96%), Andhra Pradesh (89%), Bihar (76%), West Bengal (68%), and Jharkhand (58%). About 23 states and union territories report less than 50% credit linkage of SHGs. States like Tamil nadu and Odisha have older SHG programmes and yet report less than 50% credit linkages. One possible reason is large numbers of dormant groups whose accounts are yet to be closed. Some of the large states like Uttar pradesh, Madhya Pradesh and Chhatisgrah report low credit linkages. Hesitation of bankers to lend to SHGs as well as reluctance of SHGs to approach bankers for various reasons are some of the reasons. In many of the Union Territories less than 10% of the savings linked are credit linked. Thus the credit gap is an issue in most states and union territories.

Average Loan Outstanding

At the national level, the average loan outstanding per SHG grew by 24% from ₹0.27 million in 2022–23 to ₹0.34 million in 2023–24. The highest average loan outstanding is in Andhra Pradesh (₹0.845 million), followed by Telangana (₹0.54 million) and Tamil Nadu (₹0.42 million). The All-India average loan outstanding per SHG is ₹0.34 million; however, when the Southern region is excluded, the figure drops to ₹0.19 million.

Agency-wise Performance

Commercial banks hold the largest share of loan outstanding at 68%, followed by RRBs at 25%, and cooperative banks at 7%. In the southern region the commercial banks' share of loan outstanding was 83% of the savings linkages and thus had a credit gap of only 17%; A similar situation was observed with RRBs in the Eastern region, where 82% of the savings-linked SHGs had low outstanding. However, high credit gaps were found in the Northern, Northeastern, Central, and Western regions for all agencies. The highest credit gap was with cooperative banks (65%), followed by commercial banks (46%) and RRBs (41%). State bank of India had the minimum credit gap of just 9%, whereas Bank of India with 83% and UCO bank at 78% were not performing well.

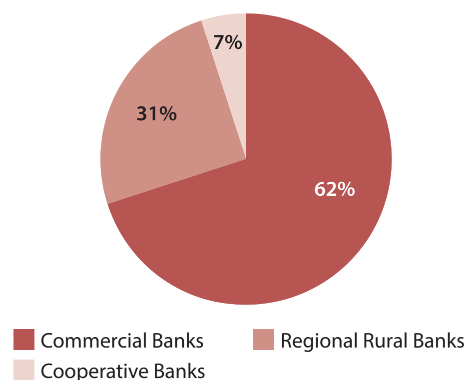

Figure 3.8. Total % Outstanding Bank Loans as on 31.03.2024 (No. of SHGs)

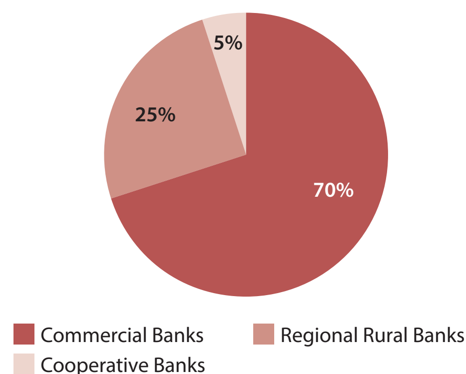

Figure 3.9. Total % Outstanding Bank Loans amount against SHGs as on 31.03.2024

Regionally, the Southern region leads in loan disbursements with a 66% share, followed by the Eastern region at 22%.

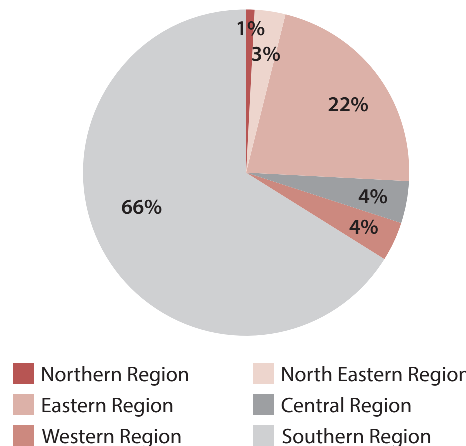

Figure 3.10. % Share of Regions- SHGs having loans outstanding (as on 31 March 2024)

Non-performing Assets

At the national level, as on 31 March 2024 NPAs under bank loans to SHGs declined to 2.05 % from 2.79% as on 31 March 2023. A decrease in NPAs could be seen across all regions in the year. The absolute amount of NPAs also decreased in the Northern, North Eastern and Eastern regions.

The Eastern and Southern regions continue to show strong portfolio quality, with NPAs below the national average. The portfolio quality is excellent in all the states in the eastern region which include the high growth states of Bihar and West Bengal. While the very low NPA in Andhra (0. 34%) and Telengana (1.88%) has boosted the region's performance, Tamil nadu (6.67%) Kerala (3.4%) have high NPAs in the region. Central region is worst performing with NPA of 6% with Uttar Pradesh (17.18%) and Uttarakhand (8.56%) have very high NPAs and this is the major reason for low level of bank linkages in the region and states.

Commercial banks, RRBs, and cooperative banks saw a reduction in NPAs in FY 24, with the most notable improvement among cooperative banks, whose NPA rate dropped from 6.15% in March 2023 to 4.7% in March 2024. This notable decrease in NPA percentage, indicates the efforts of the banks towards improving asset quality and ensuring loan repayments. Commercial banks and RRBs also consistently reduced NPAs relative to their loan portfolios, showing a positive trend in loan performance.

Overall Performance of Banks in SHG-Bank Linkage Programme

The performance of banks in SHG bank linkge programme during 2023-24 is presented in table 3.5. Commercial banks, especially the public sector banks have continued to play a significant role in providing financial services to the self-help groups accounting for 61% of the savings linked SHGs (65% of amount), 62% of SHGs that were disbursed loans during the year (68% of amount) and 62% of SHGs with loan outstanding (70% of amount). RRBs account for 29% of savings-linked SHGs, 35% of SHGs receiving loans during the year, and 32% of SHGs with credit outstanding. Their extensive rural outreach has enabled RRBs to support rural and vulnerable populations effectively. Despite their rural footprint and connection with farmers and other vulnerable groups, cooperative banks have a limited contribution to SHG financing. Their NPA rate, however, is higher than commercial banks and RRBs at 4.7%, while RRBs record the lowest NPA rate at 1.62%, followed by commercial banks at 2.01%. Given the superior portfolio quality and low NPA levels within SHG lending, both commercial banks and RRBs find SHGs an attractive avenue to meet priority sector lending norms, favouring SHG lending over other priority sector opportunities.

Table 3.5. Performance of Banks in SHG–Bank Linkage Programme in 2023–24

SHGs in Million & Amount in Billion

Item	Total Savings of SHGs with Banks		Loans disbursed to SHGs by Banks during 2023–24		Total Outstanding Bank Loans against SHGs		NPAs	
	No. of SHGs	Savings Amount	No. of SHGs	Loans Disbursed	No. of SHGs	Loan Outstanding	Amount of Gross NPA	NPA (%)
Commercial Banks	8.79	424.27	3.35	1426.25	4.78	1828.73	36.71	2.01
% Share	60%	65%	61%	68%	62%	70%	69%	
Regional Rural Banks	4.12	190.18	1.91	568.33	2.43	637.27	10.34	1.62
% Share	29%	29%	35%	27%	31%	25%	19%	
Cooperative Banks	1.52	36.45	0.22	98.28	0.53	130.63	6.13	4.7
% Share	11%	6%	4%	5%	7%	5%	12%	
Total	14.42	650.89	5.48	2092.86	7.74	2596.64	53.18	2.05

3.3. CONTRIBUTION OF NABARD

In 2023–24, NABARD extended a refinance of ₹101 billion for SHG financing, compared to ₹67 billion disbursed in 2022–23. As of 31 March 2024, the cumulative disbursement of refinance by NABARD for SHGs amounted to ₹1179 billion.

NABARD revised its Livelihood and Enterprise Development Programme (LEDP) in 2023–24 to enhance sustainable livelihoods for SHG members and improve the outcomes of skill development initiatives. In 2023-24, 33,965 SHG members received skill and entrepreneurship training through 300 LEDPs, with an expenditure of INR.223 billion. By March 31, 2024, a total of 0.3 million SHG members had been supported through 2,449 LEDPs with a grant of ₹1284 billion.

NABARD's Micro Enterprise Development Programme (MEDP) equips SHG members with the skills necessary to set up microenterprises in both farm and non-farm sectors. The programme guidelines were updated in 2023–24, expanding eligibility to include new entities such as start-ups, corporates, SHG federations, and others as Project Implementing Agencies. During the year, 27,550 SHG members were trained through 648 MEDPs, receiving ₹83 billion in grant assistance. Cumulatively, 0.61 million SHG members have been trained through 20,822 MEDPs with total grant support amounting to ₹607 billion as of March 31, 2024.

NABARD has launched several pioneering initiatives this year. The Graduated Rural Income Generation Programme (GRIP) aims to uplift the ultra-poor through a returnable grant model, promoting asset creation and providing access to formal financial services for rural women. Another initiative, the Money Purse Application pilot, focuses on digitalising SHG transactions and offering real-time banking services at the doorstep of SHG members. The M-Suwidha scheme targets microenterprise development for women by enhancing skills and providing comprehensive support for business setup and growth. NABARD has also made significant progress in supporting the physical and e-marketing of SHG/JLG/PO products, with an increasing number of groups joining the ONDC platform. Additionally, a key MoU was signed with the National Rural Livelihood Mission (NRLM) to collaborate on strengthening capacity building and expanding financial inclusion for SHG members. If this collaboration can resolve the issues of data differences between NABARD and NRLM data sets it will be very useful to understand the correct trends for enabling policies for furthering financial services to SHGs and their members.

3.4. NATIONAL RURAL LIVELIHOOD MISSION

The NRLM, implemented by the Government, is the largest community-based livelihood promotion programme in the world. It integrates grassroots institution building, financial inclusion, livelihood promotion, and social inclusion. The NRLM has been effectively implemented for 12 years. With its extensive reach, scale, and capital support, the NRLM now plays a key role in driving the SHG–Bank Linkage Programme. The instiuttion building measures are the foundation for leveraging financial services from financial institutions.

Institution Building

The progress under institution mobilisation is presented in Table 3.6 below:

Table 3.6. Outreach under DAY-NRLM

Region	As on March 2021	As on March 2022	As on March 2023	As on March 2024
Districts under implementation	743	745	745	745
Blocks under implementation	6,984	7,054	7,132	7,161
Total SHGs formed	6,853,221	7,530,697	8,304,833	8,505,894
Total members	73,083,897	79,914,258	87,239,100	89,095,902
Total VO Formed	403,152	446,660	486,570	491,577
Total CLF Formed	24,172	28,222	31,160	31,407

Source: DAY-NRLM MIS.4 (Accessed on 23 August 2024)

Geographical Coverage: NRLM has a wide geographical penetration, covering 745 districts, 7161 blocks, 271,891 Gram Panchayats, and 730,689 villages where intensive interventions are being implemented as of 31 March 2024. As an implementation strategy, blocks and districts in which all components of NRLM are implemented are categorised as 'intensive' and the remaining as 'non-intensive'. The intention is to work in a block for a period of ten years till community federations take responsibility of implementation. NRLM is nearing the completion in geographical coverage.

Social Inclusion: All rural households with at least one deprivation, as identified by the Socio-Economic Caste Census (SECC–2011), form the target group. Additionally, households identified as poor through the process of Participatory Identification of the Poor (PIP) and duly validated by the Gram Sabha are also included as the target group. Community-based development programmes are often prone to elite capture and the exclusion of disadvantaged households. NRLM, seeks to address this through its mandate for social inclusion, which requires that members from disadvantaged group (including Scheduled Castes (SC) and Scheduled Tribes (ST)) are identified and included in the programme. The current social categorisation-wise outreach of members is 22% SCs, 14% STs, 9% minorities, and 55% others.

Saturation Being Reached: As of 31 March 2024, DAY NRLM has mobilised/supported 8.505 million SHGs. While 23% of the SHGs pre-existed before NRLM was launched, 9% of the groups were dormant and revived, and 67% of the SHGs were newly formed. In the last two years, the growth in the number of SHGs being mobilised has slowed down compared to earlier years, primarily because in several states, almost all eligible women have been mobilised. As cluster-level federations become stronger, the further mobilisation work will be undertaken by these federations. In a few states where the potential for SHG formation has not been fully realised, such as Uttar Pradesh, Madhya Pradesh, and Rajasthan, the states will drive the initiative. Senior management at NRLM confirms that there has been a 5–6% dropout rate among members, which has been the trend.

State-wise performance has been dependent on the interest of state leadership, the posting of capable Mission Directors, and the appointment of competent staff at various levels.

Three-tier Federated Structures: The self help groups are federated into three tier structures of Village organisations at village level and cluster level federation for a group of villages. States such as Odisha and Tamil Nadu have a predominantly two-tier structure, comprising SHGs and Gram Panchayat federations. Each entity—SHG, VO, and CLF—has a distinct purpose and function, a clear set of roles and responsibilities, and works collectively to achieve broader development goals. Federating the SHGs into VOs and CLFs has gained momentum, and as of 31 March 2024, 69% of the SHGs are federated into VOs, and 62% of SHGs are federated into CLFs. In the last two years, building model CLFs has been a focus area, as only sustainable federations can ensure the hygiene factors in SHGs, providing them with need-based services.

Model CLF: While the model CLF initiative was launched in 2018 under the World Bank-funded NRETP project, it took three years to fully establish it in the states. As of March 2024, 4391 model CLFs have been established. COVID-19 related disruptions affected capacity-building initiatives, but since 2022, the capacity development of federations has gained momentum.

CLFs that meet the established performance criteria[3] are selected as model CLFs in selected blocks. The primary goal of the model CLF strategy is to demonstrate best practices, systems, and processes in building CLFs as member-owned, member-managed, and financially sustainable organisations. These model CLFs serve as demonstration sites to facilitate the replication of the concept across other federations in the blocks. It is expected that CLFs will provide four types of services to their members – **social services[4], technical services[5] (including convergence), livelihood services,[6]** and **financial services[7].** From the perspective of SHG bank linkages and the facilitation of other financial services, the role of CLFs in ensuring hygiene factors in SHGs is critical. Currently, to ensure all these services, there is provision for only three staff members, supported by cadres of Community Resource Persons (CRPs), many of whom are paid directly by VOs/SHGs. Block level staff from SRLMs currently provide HR support to the CLFs.

Key Elements of CLF Promotion:

1. **Formation of a Core Committee:** A state-level core committee is created, including key officials such as the CEO and COO, to ensure convergence and monitoring of CLFs.
2. **Dedicated CLF Staff:** Young Professionals (one per CLF) are recruited and trained. CLFs also hire staff with operational grants for HR costs.
3. **Development of Resource Pool:** State Resource Persons (SRPs) are developed (one for every

three CLFs), and a pool of senior national-level resource persons supports the SRPs[8].

4. **Vision and Strategic Plans[9]:** CLFs prepare vision and business development plans, focusing on governance, financial, and social agendas through a participatory approach. This has been a core area of work in 2023–24.
5. **Internal Resource Mobilisation:** Emphasis is placed on mobilising internal resources in VOs and CLFs to boost member stakes and fund availability. Business plans for CLFs are also prepared.
6. **Self-Regulation Mechanism:** A pool of community auditors is being developed to conduct regular audits of SHGs, VOs, and CLFs.
7. **Infrastructure and Viability Gap Funds:** CLFs receive funds for infrastructure and a viability gap to cover operational costs for three years.

Over the last two years, several measures have been undertaken to strengthen the key elements in the model CLFs so that demonstration sites will be ready. In addition to rolling out trainings on various themes, such as vision building, business plan preparation, human resource management and financial management, detailed advisories have been developed. Legal registration of the federations and ensuring compliance have been a focus area. The core value being promoted is community ownership. Since more than 31,000 CLFs are now functional, they also require intensive capacity development initiatives similar to those provided to model CLFs. Since 2023–24, the SRLMs have been advised to adopt the directives and SOPs developed for model CLFs for all federations. The internal audit system has been initiated, and once LokOS, the new MIS, stabilises, the audit function will be easier.

MIS—MCLF web application has been made operational, providing non-financial data on CLFs. The financial data in LokOS, especially the performance of CIF, is yet to be uploaded. However, the CLFs should use this data to improve performance, which is still a work in progress. Grading of 2559 CLFs has been completed with 10% graded as A, 47% as B, 26% as C, and 5% as D.

It is expected that CLFs can become financially sustainable within three years if the CIF, as per eligibility, is fully provided to the CLFs. The interest earned from the loans will be sufficient to cover operational costs. However, for this premise to be realised, the eligible CIF must be fully disbursed to CLF, well-deployed by the CLF, and repayment rates should be very high, which is not always the case. Moreover, it is important that the sources of income for CLFs are well diversified. The CLFs will need to earn a service fee for some of the social, livelihood, and technical services they provide.

Furthermore, bringing synergy between Producer Collectives and CLFs is a priority, as the current strategy of treating CLFs as social organisations and producer collectives as business organisations—nurtured by different pillars of NRLM—can be counterproductive. CLFs need to nurture initial livelihood and enterprise initiatives among members. Once business volumes increase then hiving off of some of these initiatives as FPOs and other forms can be thought of.

While the formation and strengthening of CLFs under NRLM is a work in progress, for the long-term sustainability of the SHGs and the smooth exit of NRLM, it is critical that CLFs become institutionally sustainable. The investments required for their capacity building should be long term, spanning seven to eight years.

Capital support to SHGs – Revolving Fund and Community Investment Fund (CIF)

A key strategy of NRLM to strengthen community institutions is the provision of Revolving Funds (RFs) and Community Investment Funds (CIFs). These dedicated funds help meet the credit needs of SHG members by offering affordable loans, while also generating interest income for the institutions to cover the costs of community cadres such as bookkeepers and auditors, thus contributing to their financial sustainability. This capital support is extended to SHGs and VOs that demonstrate strong performance based on grading.

The RF, currently ranging between ₹15,000 and ₹30,000 per group, adds to the corpus of well-functioning SHGs[10] to strengthen their institutional and financial management capacity, and builds a good credit history within the group before accessing bank credit. The RF is considered the group's resource when calculating their eligibility for bank loans. CIF is routed through the village-level/cluster-level federations, to be maintained in perpetuity by the federations. The CIF is used by the federations to advance loans to the SHGs and/or to undertake collective socio-economic activities. Although the central government sets guidelines for the amount of CIFs to be provided to each state, the states independently determine the funding amounts[11], which vary from ₹30,000 to ₹110,000 per SHG[12]. The SHGs prepare detailed plans for availing of the CIF. With a substantial pool of funds managed by CLFs and VOs, resource personnel are

trained in financial and portfolio management to ensure loan recoveries. The data on SHGs that have received RF and CIF and total amount disbursed per year, is presented in **Table 3.7** below.

As per the NRLM database, 4.74 million SHGs have been provided with ₹75 billion, while 3.78 million eligible SHGs are yet to receive RF[13]. Similarly, 2.46 million SHGs have received CIF totalling ₹245 billion, with 6.0 million eligible SHGs still awaiting CIF[14]. It is expected that CIF distribution will be completed within the next five years. During the current year, the focus is on disbursing the full eligible CIF amounts to model CLFs to showcase effective lending and sustainability. Since RF and CIF are viewed as mandatory support to SHGs and not necessarily based on demand, the optimal utilisation of these funds remains a challenge, especially in federations located in areas with predominantly seasonal livelihoods. Moreover, the smooth flow of CIF has been impacted by the uneven budget allocation year on year affecting the implementation of micro credit plans of SHGs. Lags in administrative capacity relative to the rapid rate of SHG growth is also a contributing factor. However, the capital support extended to SHGs and their federations since inception has been substantial.

While disbursement details are available, the performance of these funds in terms of loans disbursed, repayment performance, and idle funds is not readily available. LokOS software is work in progress and it is anticipated that by next year, data on the financial performance of these funds will be available. Small sample studies that have measured repayment performance have raised some concerns. For example, the World Bank conducted a small sample analysis of NPAs in CLFs as part of the project completion review of the Bihar Transformative Development Project[15]. And observes, *"An analysis of Non-Performing Assets (NPA) and Portfolio at Risk (PAR) NPA and PAR of the CLFs would have provided an accurate picture of the financial health of the CLFs. However, the project is not tracking loans and reruns at the SHG level making it difficult to track NPA and PAR. Hence, a sample of 29 CLFs (covering A, B, C grades) were analysed for their financial performance especially on loan recovery and overall financial status. The loan recovery analysis was conducted for the period January to March 2023. The analysis showed that even for A graded CLFs the on-time recovery was only 37.5 percent with only 5 CLFs having an on-time recovery of greater than 80 percent. The on-time recovery for B graded CLFs was only 17 percent which was even lower than the on-time recovery of C graded CLFs that had an on-time repayment rate of 21.4 percent. However, it does not imply that the capital that has not been returned on time is lost or written off. The SHGs may be returning the money late and hence a longer period analysis is required."*

It is well known that the community revolving funds can be prone to high defaults for a number of reasons. The RF—in this case, CIF—is only one part of the wide range of activities that CLFs are responsible for. Management of the fund requires substantial organisational effort. Unless systems are put in place to monitor and take corrective action delinquencies can set in. Moreover, senior management at SRLMs and district and block-level units should monitor repayment closely. Thus, unless sufficient attention is given to management and recoveries, loan delinquencies could increase, potentially undermining both the sustainability of the fund and the CLFs themselves.

Digitisation of SHG—Federation Record Keeping: The LokOS application is designed to record member profiles and activities at every Community-Based Organisation (CBO) nationwide, marking a significant move towards replacing traditional paper-based bookkeeping.

Table 3.7. Disbursement of RF and CIF to SHGs

Region	March 2021	March 2022	March 2023	March 2024
Number of SHGs provided RF	2,946,261	3,503,369	4,216,905	4,730,188
Amount of RF disbursed to SHG (in million)	41,306	49,793	61,409	71,396
Number of SHGs provided CIF	1,732,052	2,316,728	2,726,697	3,178,339
Amount of CIF disbursed to SHG (in million)	112,150	155,067	190,336	232,482

Source: DAY-NRLM MIS.4 (Accessed on 23 August 2024)

To date, data for 8 million SHG members and their profiles have been entered into the system, with transactions entries expected to accelerate by year's end. Some challenges that have been faced include accounting systems varying from one state to another and the accounting treatment in federations depending on their registration status, such as for-profit, not-for-profit, or mutual organisations.

Capacity building: The mission's focus on capacity building was renewed in 2023–24 after COVID-19 disruptions over the past three years, with numerous trainings, exposure visits, and study tours organised. Basic training modules for SHGs have largely been completed, and more advanced trainings in areas such as leadership and financial management are being rolled out by SRLMs. Strengthening model CLFs has been a core activity for 2023–24, covering topics such as vision building, business planning, and annual action planning. Extending these trainings to all CLFs is a priority for 2024–25. Rotating leaders every three years presents the challenge of orienting new leaders, so NRLM is planning to implement digital and physical trainings through community-managed training centres established in selected blocks.

Since capacity building is a core intervention under the mission, SRLMs prepare month-wise training calendars to be followed at the state, district, block and community levels. Training focuses on (i) SHG members, (ii) SHG and federation leaders, (iii) CRPs, bookkeepers, and trainers, (iv) professionals, and (v) bankers. SRLMs have appointed professionals at the block level to strengthen SHGs, VOs, and CLFs through training, community interactions, and on-the-job support. These efforts are supplemented by both internal and external CRPs. More experts are needed as state resource pool. With multiple interventions being taken up in livelihoods, enterprise promotion, convergence with PRIs, social and gender concerns etc., and NRLM being a community resource persons driven/dependent model, the efforts needed to build resource pools at different levels, developing mentors and capacity building of large numbers of specialist CRPs will be substantial. This will need to be prioritised for 2024–25.

Financial Services

Five key initiatives under NRLM promote financial inclusion for SHG members: (i) the bank linkage programmes, (ii) financial literacy and management training for members, (iii) social security measures like insurance and pensions, (iv) digital financial services through Banking Correspondent (BC) sakhis, and (v) financing for enterprises.

Bank Linkages under NRLM: The banks are guided by the annual Master Circular issued by RBI and NABARD which outlines implementation aspects. Key banking policy directives include: (a) emphasis on repeat and multiple credit disbursements aimed at livelihood enhancement, with banks given flexibility to offer term loans or cash credit limits; (b) credit multipliers of 6 to 8 times the group's corpus, with minimum loan amounts for each cycle starting at ₹0.15 million in the first cycle, ₹0.3 million in the second, and ₹0.6 million in the third, with repayment terms ranging from 24 months in the first cycle to 84 months in the fourth; (c) collateral-free loans up to ₹2.0 million, supported by the Finance Ministry's increased CGTSME Guarantee Fund through the Ministry of MSME; (d) individual credit facilities for members to transition to enterprise loans; and (e) interest subvention for groups. An important inclusion in the guidelines of 2024, is that the banks can consider lending to select well performing Producers Groups/Producers Organisations under DAY-NRLM for their commercial activities as per their lending policy. The progress in NRLM credit linkages is presented in **Table 3.8**.

Overall, banks have shown a strong willingness to lend to SHGs, and interest subvention has further incentivised banks to extend larger loan amounts. In most SRLMs, loan applications are submitted by well-trained community cadres. While a few regions have experienced occasional delays and overdue in repayments, the bank linkage has generally become a smooth, routine operation.

An analysis of data trends is provided in the following section. NRLM collects data directly from core banking systems and converts these into MIS reports for its portal[16]. However, there remain notable differences between databases regarding the numbers and amounts for savings, disbursed loans, and outstanding loans. According to NRLM database, the NPA for NRLM-supported groups decreased from 0.94% in 2022–23 to 0.71% in 2023–24, with a reduction in absolute NPA amounts as well. However, NABARD data shows that the NPA for NRLM groups is 1.55%. Nevertheless, it is highly commendable that the NPA rate for NRLM groups remains well below the national average of 2.05%.

Table 3.8. Progress of SHG–Bank Linkage under DAY-NRLM

Region	2022–2023	2023–2024
No. of SHGs credit linked (₹in Million)	3.24	3.34
% of SHGs getting credit linked	75.96%	81.36%
Credit disbursed during the year (₹in Million)	916,763.11	1,192,754.86
Y-O-Y % Growth		30.11%
Average disbursement per SHG	282,952	357,112
No. of SHGs having loan outstanding (₹in Million)	4.54	4.80
Loan outstanding as at end of FY (₹in Million)	1,179,615.69	1,533,324.23
Y-O-Y % growth		29.99%
Average loan outstanding per SHG (₹in Million)	260,077.41	319,196.23
Gross amount of NPA (₹in Million)	11,133.46	10,896.02
NPA as % of loan outstanding	0.94%	0.71%

Source: NRLM data base - https://daynrlmbl.aajeevika.gov.in/UI/Achievement/ProjectWiseAchievement_new.aspx (Accessed on 23 August 2024)

BOX 3.1. INSPIRING JOURNEY OF BRLP JEEVIKA, BIHAR[17]

When the Bihar Rural Livelihood Programme (BRLP) was established in 2008, it received strong support from the political leadership. The Chief Minister at the time set an ambitious goal to form at least 100,000 SHGs within five years, a target that was surpassed. Over the following 15 years, the SHG movement expanded to cover every village. Bihar ranks among the top five states in terms of number of SHGs linked to savings and credit with banks. Two World Bank projects, in addition to NRLM and state resources, have propelled Bihar from being a low performer to one of the highest-performing states in the country. The movement has often been termed a 'silent revolution' in Bihar.

SHG mobilisation and financing: As of March 2024, 1.05 million SHGs have been mobilised, with a membership of 13 million women. Of these, 1.02 million SHGs have opened savings accounts with the banks, and 1.01 million SHGs have achieved their first bank credit linkage. Bihar initially lagged in SHG bank linkage because of poor quality of SHGs mobilised under SGSY, insufficient banking infrastructure, and the high NPAs. Today 3,600 branches of 16 different banks are lending to the self help groups. The two RRBs play a major role in the credit dispensation since the overall bank penetration is low and the human resources available with the banking system are limited. The programme developed a dedicated Cadre of community facilitators to interface between the self help groups and the banks. The programme also invested in confidence building measures to ensure that bankers are willing to lend to self groups. Initial initiatives included standardising SHG bookkeeping across the state, training the CRPs in bookkeeping, and simplifying bank documents—reducing complex, 80-page English documents to simpler forms in Hindi. State level bankers committee of Bihar took the initiative, to simplify all the documents which were accepted by the banking system. Later on the Indian bankers association also approved this uniform documentation and this has been accepted by all the banks under the SHG bank linkage program. Capacity-building for approximately 90,000 community mobilisers has also been a priority, ensuring SHGs meet quality standards and banking requirements. The BRLP now intends to digitise SHG transactions, including legacy data, essential in establishing the credentials of SHG members . Grameen-CIBIL is being piloted in 32 model CLFs with a budget exceeding ₹20 million[18].

The programme is advocating with the SLBC for an initial linkage amount of at least ₹0.3 million, with a second linkage of ₹0.5 million. In 2023–24, 0.34 million SHGs were sanctioned a total loan amount of INR1198 billion out of which INR1154 billion were disbursed. By 31 March 2024, the outstanding loan amount was ₹4600 billion, with an NPA rate of only 0.98%.

Two current challenges being faced include a) The insistence of bankers that all SHG members have a savings account with them while providing a loan or at least open a customer identification folio, which is time consuming; b) Since MFIs are very aggressive in lending in Bihar, the bankers, before sanctioning the loan, avail the CIBIL report on the credit score of members in about 10% of the SGs. There are delays because some members have low CIBIL scores, and bankers usually ask the programme officials to change the members. The programme has to spend time counselling the bankers.

Individual enterprise loans to SHG members: The direct linkage with the banking system is likely to take about two years, as bankers have to be sensitised and given adequate tools to finance individual loans. Moreover, the community facilitators will need to be well trained in different enterprises so they can prepare the detailed project reports that bankers require for loans above ₹0.1 million. Another issue is that bankers are insisting on directly financing the vendors instead of providing the loan to the borrower directly. Since cattle are a major investment for households, they prefer flexibility in procuring the animals rather than depending on cattle fairs. The programme will pilot individual loan lending and housing loan financing in the current year, especially with the RRBs. It is expected that about ₹320 billion will be disbursed under these two products in the next two to three years.

Social security: During last year a major decision the women took was to propagate the importance of insurance. Under Pradhan Mantri Jeevan Jyoti Bima Yojana (PMJJBY), 6.50 million women are covered, and under Pradhan Mantri Suraksha Bima Yojana (PMSBY), 7.15 million are covered, with the women paying the insurance premium of ₹436 and ₹20, respectively. While the PMO and the district and block officers ensure adequate awareness-raising and necessary product literacy to the women, the CLFs have spearheaded the movement. In order to ensure the required balance of ₹456 is available in the savings account of SHG members for renewal/new enrolment, an interest-free loan (up to ₹500), repayable in ten instalments, is made available from the SHG corpus. However, the key issue is that only women up to 50 years are included under insurance, whereas life expectancy is almost reaching 70 years. There is a need to re-evaluate the social security schemes to widen the coverage.

Bank Sakhi (Banker Didi): In Bihar, 5600 Bank Sakhi have been recruited and well trained. The SHG women have full confidence in the Bank Sakhis, and presently, individual and group savings, as well as group loan repayments, are routed through the banks to the extent of 20% of the total volume of transactions. While private sector banks are coming forward for the deployment of Bank Sakhis, the women's confidence in these banks has been low; they prefer to deal with public sector banks. On an average, after six months of deployment, the Sakhis are able to earn between ₹6500 and ₹7000 per month as commission. Dual authentication is required for withdrawal of cash from the SHG account, which has been an issue.

During 2024–25, the programme has an ambitious target of disbursing ₹1,500 billion to the SHGs. The groups will continue to be sensitised to ensure that the NPA is well contained and remains below 1%. Another major initiative being taken is to ensure that every SHG member prepares a family investment plan, which will ensure that the credit is well utilised and that the CIF fund available with the CLF is also properly utilised.

Capacity building of members in finances: The mission, targeting economically disadvantaged women with varied literacy levels, has recognised the essential need for fundamental financial and product-related literacy. As the Reserve Bank of India, along with other banks, has an extensive financial literacy programme, NRLM has aligned its efforts with the banks' Financial Literacy Centers (FLCs). NRLM has created a network of around 2,600 master trainers who have, in turn, trained 38,000 financial literacy Community Resource Persons (CRPs), making it one of the largest financial literacy frameworks in India. The banks, through FLCs, oversee CRP activities. SRLMs have started village-level camps offering six outcome-oriented training modules. Baseline surveys across 15 parameters are conducted before training to enable progress tracking. NRLM ensures these training efforts drive product uptake; for example, BC Sakhis assist members in enrolling in insurance products following completion of the insurance module. NRLM aims to reach 20 million members annually but is seeking funding from RBI to support this initiative. Recognising SRLMs as facilitators will allow them direct access to funds from sources such as the RBI and NABARD's Financial Inclusion

Fund, rather than relying solely on banks' budgets for financial literacy.

Social security: SRLMs have facilitated insurance coverage for SHG members, including life insurance (PMJJBY) and accident insurance (PMSBY), both subsidised by the government. VOs/federations play an active role in insurance claims submission. To address claim settlement issues, a portal now captures data on PMJJBY and PMSBY insurance, with banks sharing information, including claim settlement details. Moving forward, there should be a greater emphasis on insurance products covering livelihood assets and health, as savings and credit products alone are insufficient to address major or catastrophic risks. SHG members often use loans for health-related expenses. Old-age poverty is an increasing concern, as pension coverage is limited and income sources are not guaranteed. Rather than individual states developing and negotiating insurance and pension products, the mission's national reach should be leveraged, with the central government collaborating with service providers to create affordable, women-centric products. There is also potential for community-owned mutual insurance schemes for high-cost products like livestock insurance.

NRLM is preparing its members to address the challenges of old-age poverty. The average age of SHG members is around 34, and about 20% of members will struggle to earn a living within this decade due to aging. Current old-age entitlements are minimal, and the government faces challenges in providing comprehensive support through social security schemes. A contributory pension scheme is therefore seen as the solution, leading to the introduction of the Atal Pension Yojana for SHG members, with approximately 4.5 million women enrolled to date.

Digital financial services: As bank branches often find it challenging to focus on women, and women prefer nearby service points, NRLM launched an innovative approach in 2015–16, enrolling women as BCs for financial institutions. SRLMs are responsible for identifying, training, and collaborating with banks to deploy SHG members as BC agents, known locally as Bank Sakhis. NRLM has arranged for training and certification by the Indian Institute of Banking and Finance (IIBF). SRLMs offer financial assistance through partial grants and low-cost credit via VOs/federations to cover initial setup expenses, including hardware procurement and working capital for transactions. Although financial institutions pay BC Sakhis on a per-transaction basis, SRLMs provide an honorarium for the first six months until revenue streams become sustainable.

The 'One GP One BC Sakhi' approach is designed to deliver financial services directly to the doorsteps of women SHG groups and their members. It aims to establish transaction histories for SHGs and their members, enable digital transactions within SHG ecosystems, and make social security products accessible to SHG members and their families, and other villagers, thereby reducing transaction times. BC Sakhis are encouraged to extend their services beyond banking hours and to promote awareness of various financial and non-financial products and services. All BC Sakhis are expected to become self-sustaining within six months of deployment. BC Sakhis, as per the mandate, are identified from SHG members in every Gram Panchayat and are trained and certified by the Indian Institute of Banking and Finance (IIBF). Following training, BC Sakhis are deployed and activated within 30 days. As of June 2024, a total of 130,168 BC Sakhis have been deployed[19].

NRLM has commissioned a study[20] in 2023 to evaluate the functioning of BC Sakhis. The key findings are:

- Approximately 10.6% of randomly selected BC Sakhis are no longer active, with the main reason cited being an inadequate commission structure.
- BC Sakhis are expected to perform a minimum of 250 transactions per month, with long-term sustainability projected at 400 transactions per month. However, the current average stands at 190 transactions per month.
- Earnings distribution is skewed towards the lower end, with 68% of BC Sakhis earning less than ₹5,000 per month on an average. Jharkhand shows a more favourable income structure, with 38% of BC Sakhis earning between ₹10,001 and ₹15,000, and an additional 22% earning between ₹15,001 and ₹20,000. On the other hand, states such as Karnataka and West Bengal report alarming 98% and 80%, respectively, of BC Sakhis, earning below ₹5,000, with 64% working part-time (less than five hours on an average).
- BC Sakhis serve as transaction facilitators and financial educators for SHG members, also helping resolve banking-related issues.
- The implementation of the 'Dual Authentication Facility' for SHG accounts varies across the state. In approximately 67% of the surveyed districts, this facility is operational, enhancing the security and functionality of SHG accounts. However, in 33% of the districts, implementation is still pending. In regions where the facility is yet to

be implemented, there is no specific timeline provided by the SRLMs. This uncertainty indicates a need for more focused efforts and possibly a structured implementation plan. This limits the financial services top SHGs and thus scope for higher value transactions.

- Higher-end financial services such as loan disbursements (15%) and repayments (18%) are less common, while digital payments (56%) and account opening or updating services (55%) are more widespread. Expanding the service range could create additional income sources, enhancing the sustainability and appeal of the BC Sakhi role.
- Technical difficulties with devices or applications are a prevalent issue, reported by 77% of BC Sakhis.
- Customer feedback shows a positive impact on banking habits due to BC Sakhi services, with 68% reporting a shift in behaviour and 87% expressing satisfaction or high satisfaction with services. Customer trust in BC Sakhis is extremely high, at 99%, and 72% of customers were introduced to new banking services by BC Sakhis, underscoring their role in financial inclusion.
- Lack of adequate support and cooperation from banks remains a recurring challenge, hindering the seamless integration of BC Sakhis into the banking ecosystem and affecting service delivery efficiency.

The author's recent interactions with members self help groups show that women want a single place that provides access to all the financial services that they need. They should be able to save small amounts, make withdrawals, take loans, make payments, buy insurance, buy a mutual fund, make insurance claims and get compensation. The younger women are interested in investing in mutual funds. Women prefer that all these transactions are from a single outlet as much as possible. BC Sakhi model offers the scope for one point service provision for women. Banks, SRLMs and other stakeholders should measure up to this need and devise means of providing a whole range of financial services from their doorstep.

Ultra-poor Inclusion/Graduation

While self-help group (SHG) methodology is designed to be inclusive of the very poor, and promoting organizations encourage their participation, these households often hesitate to join due to socio-economic challenges that they face. Factors like minimal savings, food insecurity, and low social status prevent many of the poor from becoming members of these groups. For such "hard-to-reach" or ultra-poor populations, specific and focused interventions are necessary to integrate them into the mainstream economy and set them on a path to growth. Programmes like MAVIM have observed that the very poor are often reluctant to take loans, preferring to focus on saving, and group leaders may also be hesitant to encourage them due to concerns about their repayment capacity. BRAC in Bangladesh has developed a proven model for helping ultra poor households graduate out of poverty to become mainstream clients of MFIs, and this model has been implemented at scale by NGOs such as Bandhan Konnagar in India. SHG promoters have worked to include ultra poor women in SHGs and to encourage existing ultra-poor members, who may be wary of borrowing on normal terms, to engage in livelihood activities. Major ultra-poor inclusion initiatives[21] undertaken are:

Satat Jeevikoparjan Yojana (SJY) by Jeevika, Bihar follows the BRAC model of asset transfer and graduation, with clear sequencing and coaching, supported by technical assistance from Bandhan Konnagar and rigorous monitoring. SJY is based on contextualised graduation approach and has a goal to integrate 200,000 households into SHGs by 2024 and by March 2024, 201,000 poorest HHs have been identified. Confidence building and skill trainings have been completed for 0.19 million HHs and livelihood assets have been received by 0.18 million HHs. Village organisations undertake key functions such as targeting and selection of households, routing of livelihood gap assistance funds to the households and also procurement and transfer of livelihood assets. The implementation of the programme is largely in the hands of the community cadres especially the Master resource persons who handle the coaching of the households. The ultra poor who graduated and joined the self Group movement are about 36,000.

There are other initiatives where zero interest loans are made available to very poor households. One such initiative, Unnathi, implemented by the Society for Elimination of Rural Poverty (SERP), focuses on the poorest of the poor, including widowed women, single mothers, illiterate families, primitive tribal groups, bonded labourers, and people with disabilities or chronic illnesses, predominantly from SC/ST communities. To date, 346,618 households have received a cumulative sum of ₹130 billion in zero-interest loans. SERP has implemented stringent validation processes to

ensure that the aid reaches the intended beneficiaries. In Maharashtra, MAVIM has initiated Tejashri, a financing initiative under the Manav Vikas Mission of Government of Maharashtra, which provides zero-interest loans to ultra-poor women. These women are identified through an intensive participatory process conducted by federations. Each ultra-poor member is currently provided zero interest loan of ₹15,000, with a repayment period of 3 years and a suitable moratorium. Successful repayment of these loans allows the women to access bank loans through their SHGs. Since its launch in 2018, ₹10 billion has been disbursed to 90,299 ultra-poor women, with an outstanding 100% repayment rate. In all these ultra-poor initiatives, the SHG-VO-federation involvement has been crucial for identifying beneficiaries and ensuring the effective delivery of services.

NRLM, with technical support from BRAC and the Nudge Foundation, has launched the Ultra Poor Graduation programme in 11 states, excluding Bihar. This programme aims to graduate 100,000 ultra-poor households into SHGs. Innovation funds have been earmarked for this initiative, which will be adapted to local contexts at both the state and district levels. Grant-based interventions will also be carried out to support the program's implementation.

Lakhpati Didi Initiative: The Government of India launched the *Lakhpati Didi* initiative on 15 August 2023. A *Lakhpati Didi* is an SHG member who earns an annual household income of ₹100,000 (one lakh) or more. This income is calculated over at least four agricultural seasons and/or business cycles, with a consistent average monthly income exceeding ₹10,000, ensuring sustainability. According to the MIS report[22], data has been collected for 80,627,803 SHG members with 1,35,47,702 members (16.8%) reporting an income above ₹100,000. Additionally, 26.66 million potential *Lakhpati Didis* (earning between ₹60,000 and ₹100,000) have been identified. The government has set a target to create 25 million *Lakhpati Didis* by 2024–25, with Bihar (3 million), Uttar Pradesh, and West Bengal with (each with 2.8 million) being the states with the highest targets. Surprisingly, states like Tamil Nadu, Karnataka, and Kerala have lower targets, each under than 1 million.

The current strategy focuses on enabling households to take up diversified income-generating activities. Trained CRPs will facilitate the development of livelihood plans and establish linkages for assets, skills, finance, technology, markets, and more. Large-scale convergence with other ministries is also being planned.

The *Lakhpati Didi* initiative is not a separate scheme but rather a focused effort to support individual members in diversifying and improving their livelihoods. While gross income is currently the key metric, the narrative eventually has to shift towards achieving a net income of ₹100,000. The financing for the livelihoods is expected out of the current sources of funds; dedicated funds set up at SHG, VO and Federation levels under different schemes and also bank linkages. With improved livelihood plans, the demand for credit is expected to rise, leading to better utilisation of various funds. However, a potential risk is that the initiative could be reduced to simply counting and reporting numbers, rather than working with each woman in a holistic manner. As implementation progresses, the success of the *Lakhpati Didi* initiative will depend on how the different pillars of NRLM—farm sector, non-farm sectors, and financial inclusion—coordinate at the ground level. The coordination will ultimately determine the emergence of millions of *Lakhpati Didis* with a net income exceeding ₹100,000.

Enterprise financing: NRLM has focused on several measures during 2023-24 to graduate entrepreneurs to individual loans. While after COVID-19 pandemic this initiative was started, during 2022-23 the policies and interventions geared towards individual lending took definite shape. There has been discussions within NRLM for the directed enterprise finance to alleviate risks of easy money being available through SHG eco system. With a clear strategic intent aimed at the next phase of NRLM starting from 2026[23], the mission is testing the graduation model and will scale this up fully in the next phase. With technical support from the World Bank and IFC, detailed standard operating procedures (SOPs) were developed.

Discussions were initiated with SBI to address the challenges in securing individual loans and the need for a specialised product. Based on data collection, it was found that approximately 80 % of the members were predominantly engaged in 30 specific activities. SBIRD, SBI's training institution, developed project reports, including projected cash flows and profitability analysis. SBI introduced a new product *Swayam Sidha,* which allows any NRLM SHG member with a good track record to borrow up to ₹400,000 under the scheme. Loans exceeding this limit would follow MUDRA loan procedures. For loans up to ₹400,000, SBI waived certain conditions, such as the requirement for a project report and quotations for the purchase of equipment, machinery, etc.

Banks have keen to increase size of loans to SHGs rather than giving individual loan. Hence this has been a real breakthrough and based on the product

developed by SBI, all the public sector banks have a separate scheme for graduation of entrepreneurs this year. RRBs are also taking up this product to their boards. RBI's 2024 master circular guidelines to banks have also included details of financing of individual members of SHGs. To streamline application process, NRLM held multiple rounds of discussions with IBA involving banks and IBA has issued notification for a simplified format for individual financing.

An enterprise is defined as any commercial activity requiring an investment exceeding ₹25,000. While SHGs and CLFs are able to finance up to ₹75,000, banks are approached for loans amount above this threshold. Different SRLMs have set varying limits—for example Andhra Pradesh has set a limit of ₹0.15 million and Jharkhand, ₹0.10 million. Women with experience in their trade and a desire to expand are supported through individual bank financing, while those with promising business ideas are guided to borrow from SHG-CLF funds.

Two types of incentives are provided to entrepreneurs—a) for loans up to ₹0.15 million, a 2% interest subvention is available,[24] making loans more affordable. b) Given the higher NPA rates for individual loans, banks prefer a credit guarantee. For loans up to ₹0.5 million, the mission reimburses banks for credit guarantee fees, although this reimbursement is granted to each borrower only once. To sustain these incentives, a dedicated *Women Enterprise Acceleration Fund* has been set up. A dedicated Women enterprise acceleration fund has been set up to provide these incentives on an on-going basis. Reimbursement of credit guarantee fees will be considered for a borrower only once.

In order to provide enterprise development support rural credit counsellors and enterprise CRPs work with the entrepreneurs to formally register the units in udhyam portal, arrange for different skill trainings and also co ordinate with farm and non farm sectoral teams for market linkages; however market linkages need more focused and interventions. The CRPs are also counselling members about credit scores to avoid high rejection rates being experienced in certain pockets. NRLM has partnered with three resource agencies to strengthen SRLMs' capacity: GAME in three states, Sa-Dhan in four, and SIDBI in two. Few states like Kerala have their internal capacity.

Cumulatively 0.24 million individual loans have been disbursed, amounting to ₹400 billion. In a progressive step for 2024–25, specific targets have been agreed upon with banks, aiming to finance 1.25 million entrepreneurs. Banks have set branch-wise targets to achieve this goal. The major challenge is most of the rural branches there are limited staff and the individual loans sanction and disbursement have strict protocols including spot verification which is audited. Exploring whether federations can act as business facilitators to conduct routine spot verifications, with branch staff stepping in as needed, could reduce the load on the branches.

Performance of NRLM: Institution-building efforts within NRLM have been commendable, especially in reaching vulnerable groups and scaling up SHG structures in less developed states. A significant achievement is the geographic expansion of the SHG movement, with numerous success stories showing how SHGs, VOs, and federations are addressing social, economic, and political issues. However, there is still work to be done in ensuring SHGs gain full membership and integrate into higher-level structures.

One challenge is the inconsistent quality of SHGs across states, affecting the strength of their bank linkages. External assessments have highlighted areas for improvement when groups are evaluated against the Panchasutra framework. In some states, bankers are concerned about the quality of the groups and restrict quantum of credit. In more mature regions like Tamil Nadu, Andhra Pradesh, and Telangana, there has been a decline in financial transactions during meetings; members often send savings and loan repayments through family members, only attending meetings when credit is needed. Retaining members' active engagement in the SHG system remains a key challenge.

The timeframe for developing a model CLF is currently set at three years. Financial sustainability is feasible where community investment funds have been adequately provided, allowing interest income to cover operational expenses. However, institutional sustainability requires a longer timeframe. Disbursement of RF and CIF funds needs to be expedited to ensure timely support for community institutions. A significant concern is the reliance on CIF as the primary income source, as recalcitrant borrowers can erode interest income. Diversifying income sources, including membership fees and service fees for both members and non-members, is essential. Early introduction of a user fee for services is necessary, as members accustomed to free services often resist fees when introduced later. In challenging areas, such as tribal belts and hilly regions with limited livelihood options, the support timeframe for CLFs should be extended, as financial sustainability will take longer to achieve.

While Model CLFs are getting built, there is a need to ensure that other already mobilised CLFs, are getting adequate capacity development support. If the right elements of governance and management practices are not put in place in the early stages, institutionalising these practices later will be a challenge. Given the wealth of civil society organisations in the country with extensive experience in federation building, SRLMs should consider engaging them to support CLF development for three to five years. SRLMs can set clear protocols to guide this support.

As far as credit linkages is concerned NRLM had to re-establish SHG-bank linkages in several states, and the progress in previously lagging states like Bihar, West Bengal, Assam, and Odisha has been remarkable. Bankers are now actively working with the SRLMs to meet their targets. Well-established processes and protocols have resolved many challenges, though further improvements are needed in terms of scale and efficiency. Despite these successes, there is a consensus that the credit flow needs to increase significantly. Factors such as low banking penetration Northern and Northeastern states, and attitudes of mainstream commercial bank staff, and less dynamic economies in these regions contribute to the suboptimal provision of financial services. In areas where credit flow is well-established it is time to strengthen savings and social security services for the women SHG members.

3.5. OTHER ENTERPRISE DEVELOPMENT EFFORTS FOR SHG WOMEN

Enterprise promotion under TNRTP: The World Bank-funded Tamil Nadu Rural Transformation Project called the Vazhndu Kattuvom Project (VKP), is a six-year initiative with an outlay of ₹9,100 million aimed at promoting both individual and collective enterprises. In the farm sector, collectives are organised as Farmer Producer Companies, and for the non-form sector, cluster approach is followed. Enterprises are categorised as follows: nano enterprises, which include investments up to ₹0.5 million, including working capital; micro enterprises, which range between ₹0.5 million and ₹1.5 million; and small enterprises which have investments of up to ₹1.5 million.

The project has established 42 One-Stop Facility (OSF) centres to support individual entrepreneurs. Each OFS serves as a single-point business service provider across four keys areas: a) business development services, b) facilitation services c) networking and d) value-added services. These centres offer a comprehensive range of support, including business ideation, business planning, business plan appraisal, facilitation support, access to finance, technology, skill development, regulatory compliances, market intelligence and linkages, mentoring and monitoring. OSF also provides information and access to services of other government departments related to enterprise promotion, such as agriculture, agriculture engineering, horticulture, animal husbandry, marketing, MSME, and food safety. Each OSF is staffed by three professionals: an enterprise supervisor, an enterprise development officer, and an enterprise finance officer, who are all trained in-depth in business plan preparation. At the grassroots level, Community Enterprise Professionals[25] (CEPs), typically graduates, identify potential entrepreneurs within SHGs that are members of Panchayat-level federations. To develop an ecosystem to support these enterprises, VKP has partnered with EDI, IIM Trichy, and IIM Kolkata to build the programme staff's enterprise promotion capacities. Bank loan proposal prototypes have been developed for around 30 common entrepreneurial activities among women.

Potential entrepreneurs are assessed using a scoring tool, and those getting at least 50% are selected. Preference is given to those aged 21–45. Once selected, CEPs upload basic data onto a dedicated portal. OSF staff conduct site visits to ensure that all operational requirements are met, assess repayment capacity, and check CIBIL score to minimise loan rejections. For loans above ₹0.5 million the applications are vetted by a committee set up at VKP central office. A separate portal for the loan applications under the matching grant facility has been set up.

The SHG-bank linkage programme in Tamil Nadu is well established, with both SHGs and banks enjoying a stable relationship and high repeat financing. Banks favour lending to SHGs due to low NPAs but have historically been reluctant to lend directly to individual enterprises. It is in this context that the VKP designed the matching grant mechanism to give comfort to bankers to lend to the enterprises. Under this system, 30% of the loan amount is provided as a back-end subsidy, which acts as a partial loan guarantee. Banks can also access a central government guarantee for enterprise loans, with the project covering the 1% guarantee fee for the first year, after which the borrower covers the fee. For loans up to ₹1 million, banks do not require collateral, given the guarantee coverage. VKP has

also guided the bankers that RBI norms should be followed in enterprise financing.

The matching grant program considers both farm and non-farm sectors, including new enterprises and those in expansion. Eligible entities include women-owned and managed enterprises, as well as family businesses where women are actively engaged. Loans are offered for up to five years at interest rates between 10 and 12% and are covered under the CGTMSE scheme up to ₹1 million. Once the bank loan is sanctioned, the payment is made directly to the supplier of goods/machinery.

In the last two years 6,415 individual enterprises have been financed in about one third of the blocks of Tamilnadu; 3,590 are existing enterprises that are expanding and 2,875 are new. About 72% are women-owned, while the remainder are family businesses. A common issue cited by bankers is lack of business records among entrepreneurs; to address this, women entrepreneurs are supported in maintaining accounts through the Mera Bills app, which also serves as a product catalogue for enterprises, thereby supporting both accounting and marketing within the enterprise community. OSF provides additional, need-based support.

Hand in Hand: Hand in Hand India has been mobilising women into SHGs with a mission to create 10 million jobs by 2025. With 501,766 SHGs formed and 4.69 million women members across 17 states, Hand in Hand has focused on promoting both micro enterprises and family enterprises, particularly in 12 states. A large number of SHG women in rural areas depend on agriculture and are vulnerable to climate change. HiH recognised a strong need to diversify into non farm-income generating activities but SHG women face several issues in initiating and expanding non-farm businesses. Hand-in-hand has conducted studies to strategize enterprise development and self-employment. These studies reveal that SHG women require customised business development services and handholding during start-up or expansion to establish sustainable businesses. Strengthening the business acumen and skills of these women is essential and supported though targeted training and mentoring. Bringing in professionals with backgrounds in business development, as well as private-sector consultants, enhances the sustainability of enterprise promotion for women.

A specific pillar of intervention—the Job Creation and Women Empowerment pillar—comprises an Enterprises team and a Social Mobilisation team that work together to ensure rural women are equipped with confidence, skills and the necessary tools. These teams conduct enterprise assessments, identify skills, provide business development, facilitate credit and market support, and ensure compliance with statutory requirements. They also assist SHG women in accessing digital platforms through digital literacy training, teaching them about the benefits of forming market linkages to grow their customer base. Credit access for women is largely provided through Belstar, an NBFC-MFI a sister organisation, in addition to SHG bank linkages.

Hand in Hand has implemented impactful projects, such as exclusive B2B marketplaces for women entrepreneurs and digital literacy initiatives to improve market access. Technology plays a core role in their marketing strategy, with digital literacy training and education on using digital marketplaces as key interventions. Women entrepreneurs have also been facilitated to use social media, and partnerships with 44 corporate entities, spanning domestic and export markets, have opened significant business opportunities. Hand in Hand has cumulatively supported 5.01 million family-based enterprises and 0.125 million micro-enterprises.

MAVIM: MAVIM has a large SHG bank linkage programme with 99,699 SHGs functional with about 1.3 million women members. MAVIM has facilitated partnerships between the federations and around 16 financial institutions, where federations ensure the efficient operation of SHGs, source loans for SHGs from banks, monitor loan portfolios, and earn a 2% commission on the portfolio for these services. This commission contributes 47% of the federations' cost coverage, creating a mutually beneficial partnership between banks and federations.

MAVIM's microfinance programme has seen a significant increase in the average loan size per SHG over the past few years, reflecting the growing financial needs and aspirations of women entrepreneurs. In 2018–19, the average loan size was ₹0.21 million, steadily increasing to ₹0.40 million by 2023–24. The total outstanding loan amount has grown significantly, rising from ₹51 billion in 2018–19 to ₹99 billion in 2023–24. Banks such as ICICI Bank, Union Bank of India, Saraswat Bank, and various small finance banks are key players in this ecosystem. ICICI Bank has developed a specific product tailored for SHGs, allowing these groups easier access to loans.

As of 31 March 2024, about 84% of SHGs held an outstanding bank loan. MAVIM has successfully kept the delinquency and NPA rates extremely low, with the delinquency rate at just 0.26%, and the NPA rate at 0.08% for 2023–24, demonstrating the high repayment discipline of SHG members.

Since about 60% of the SHGs are more than 5 years old and about 24% SHGs above 10 years, MAVIM observed that many women entrepreneurs had outgrown the small loans provided by their SHGs, as their businesses had expanded significantly. Since 2022, MAVIM has partnered with ICICI Bank to develop a specialised Micro Enterprise Loan (MEL) product, offering loans of up to ₹0.2 million, and Union Bank has introduced a loan product of up to ₹1 million. CMRCs continue to play the business facilitator role. By March 2024, 7699 women entrepreneurs had received loans amounting to ₹7 billion—a modest achievement considering the credit history of groups and the programme's longevity. Many women struggle with poor credit scores (CIBIL) or a lack of formal business records, leading to high rejection rates for loan applications. Additionally, rigid banking procedures under individual loan make women prefer SHG loan.

To address these challenges, MAVIM plans to launch campaigns to educate women on the importance of maintaining good CIBIL scores and proper business documentation. Training sessions will be organised at the CMRC level to improve women's understanding of financial products, savings, and credit management. MAVIM has collaborated with the 'Mera Bill' app to enhance women's financial literacy by providing training in bookkeeping. This initiative aims to equip women with essential skills to maintain accurate financial records, improve business management, and develop formal financial histories to access credit more easily. In collaboration with Micro Save Consulting (MSC), MAVIM is working on a proxy CIBIL model for women entrepreneurs who do not meet traditional credit requirements. This model aims to assess creditworthiness based on alternative metrics, enabling more women to access loans. MAVIM, in collaboration with SIDBI and Women's World Banking, has also launched Prayas, a product that provides individual loans based on a proprietary credit measurement for the CIBIL score of SHG women. Efforts are ongoing to simplify loan application processes and reduce documentation barriers.

BOX 3.2. INTERACTION WITH MEMBERS OF 30 YEAR OLD SELF HELP GROUPS[26]

We Are Not Poor Anymore—We Are Now Middle Class

As part of its exit strategy, MYRADA established Community Managed Resource Centres (CMRCs), which are a hybrid form of federation for SHGs. A study of 20 SHGs which are 30 year old in two CMRCs involved discussions with 37 women from these SHGs and also CMRC managers. Focus group discussions were held to understand the changes in the savings, meetings, loan utilisation, asset creation and also their livelihoods (at the start of self-help groups and the current livelihood patterns).

Initial targeting by MYRADA: The members were identified through participatory wealth ranking; most of the members were poor with very few were in very poor category. Their primary income sources were from labour, and they lived in huts or thatched roof houses lacking sanitation. These groups were formed with funding from IFAD funded Tamil nadu Women Empowerment project and PLAN International.

Mobilisation: Women recalled MYRADA's significant investment in their capacity building. MYRADA staff underwent intensive trainings. Staff in turn trained animators and book keepers. MYRADA ensured that all group members were trained; they under went 45 to 52 days training on different topics. The training was tailored for the illiterate, using stories and pictures to convey key messages. Additional training was provided for emerging needs, such as agricultural and livestock technology, healthcare, and HIV/AIDS awareness. MYRADA institutionalised good systems in terms of book keeping, auditing on payment for services basis. Women are proud that they belong to good quality institutions.

Number of members: The groups studied had memberships ranging 17 to 20 people, with most groups reaching the maximum 20. While six groups had continued with the same 20 members since the beginning, others saw changes due to member deaths, irregular attendance, or lack of interest in loans. Most members are over 55 years now, with some between 60 and 70. If a member dies, another member from the household is included.

Group meetings: Initially, SHGs met weekly. Although women saved at every meeting, loans were generally disbursed monthly. Women recalled that meetings, held late in the evening, could last from 90 minutes to 3 hours. MYRADA used these sessions to raise awareness of social, economic, and political issues. While savings and credit dominated

discussions, time was also set aside for other community issues. Nowadays, meetings focus primarily on savings and credit, lasting about an hour and women mention that they do not have similar spare time that they had earlier when they joined the self-help groups.

Savings: The members narrated the immense difficulties in mobilising small savings when they started with the self-help groups. In weekly meetings women saved between ₹2 to 5 every week. About 45% relied on their husband or father-in-law for this amount. Now, groups typically meet twice in a month, with only 10% meeting weekly. The average amount saved ranged from ₹200 to ₹500 per member per meeting. The women proudly mention that the source of the savings is largely from their own income. Few older women, who are not continuing any major livelihood activity are now supported by the children/grandchildren and they save from these remittances. CMRC staff report a savings regularity rate of over 90% in the last six months for most groups.

Savings and profit distribution: All groups redistribute their savings every five to six years to mitigate the risk of mismanagement and non-recovery associated with large funds. The groups are highly efficient in lending the internal savings and also the external borrowings from financial institutions. The loans are lent out to members at 24% per year on a declining balance. The bank loans which are availed usually between 11 to 13% per year are also lent out at 24% per year; the high-efficiency and also the interest margin generate large profits which are distributed in proportion to the savings mobilised. The records show that every five years the women are able to generate a cumulative return of 150% to 220% on their savings; women who have saved regularly are able to get a substantial sum of ₹75,000 to ₹100,000 rupees as pay out (their savings and profits). Women invest these returns in gold, land, debt repayment, and education of children, viewing their savings as an opportunity for asset creation.

The groups restart with renewed vigour; usually a bulk amount of ₹10 to 15,000 is deposited by each member so that sizable bank loans can be availed.

Loans: About 50% of members have borrowed approximately ₹2 million cumulatively, primarily for children's education, healthcare, asset purchases, and livelihood or minor irrigation investments. Some women invest in their spouses' shops, in distant locations which yield steady profits, enabling regular repayment. Recent loans have financed grandchildren's education, additional livelihood assets, dairy animals, and home improvements. It is striking to see that the major investments are made in education of children and grandchildren, the investments in livelihood assets in comparison has been low as against investments in education and asset creation.

Major source of livelihoods then and now: While about 42% of women mentioned that they were working in their family agricultural land and also MGNREGS, 36% were primarily working as labourers and the rest were housewives. Today, MGNREGS work and livestock rearing remain common. Proximity to Bangalore and Hosur has led some women to dairy farming. About 36% of the women are now economically inactive as their children are financially secure and provide for the family.

Loans from financial institutions: CMRCs are facilitating loans from commercial banks and other financial institutions. While the CMRCs are enrolled as Banking Facilitators with both Sanghamithra and NABFINS, they do not have such a relationship with commercial banks. Bank loans are preferred due to lower interest rates (11% to 13% per annum on a declining balance). Whenever there is a delay in the bank loan, the groups prefer to borrow from Sanghamithra or NABFINS in order not to miss the agricultural season. A recent NABFINS interest rate increase to 24% per year has deterred borrowing. Sanghamithra remains popular for its doorstep banking and quick processes.

Banks generally lend four times the group's savings. The average loan size in the last cycle was ₹1,000,000 with some groups securing ₹2,000,000. Groups treat loans as term loans with 18 to 20-month repayment periods. There is very high repayment rate and even if a few members lag behind on repayment intermittently due to cash flow issues, the groups ensure that they repay the bank loan out of their common fund. The groups proudly mention that there has been hundred percent repayment of bank loan of the groups in both the CMRCs.

Common social action: MYRADA staff facilitated discussions on social issues affecting women and their families. Women proudly narrate several social agenda they had addressed, including improving school functionality, enrolling

girls in school, ensuring basic medical facilities, accessing government entitlements were accessed, arranging bus facilities for the villagers, addressing drinking water and sanitation needs, and fighting alcoholism. Women mentioned that recent community action on social issues is limited. Although alcoholism remains a problem, addressing it is challenging due to government-owned liquor shops. Women feel Gram Panchayats should now address such issues.

Housing and asset changes: Women proudly mention they are no longer poor but are middle class. Through redistributed savings and loans, they have invested in gold, land and housing, owning assets between ₹3 and ₹5 million. The housing change has been impressive with almost 80% of the women who were living in huts or tiled roof houses when they joined SHGs are now living in concrete houses. All the houses have sanitation facilities. However, around 40% still lack piped drinking water at home. The women proudly mention that the greatest assets which they have created are well educated children many of who are now engineers, doctors, government servants etc.

3.6. CONTINUED PERFORMANCE OF SHG BANK LINKAGE PROGRAMME

Ensuring group quality and cohesion: The experience of SHGs with over 30 years of activity reveal that the strength of the movement lies in mobilising homogenous, well-capacitated groups with high discipline, which has earned the trust of financial institutions for last-mile delivery of credit and other financial services. In addition to financial services, SHGs have engaged in development and social activities. Today, however, a key challenge for SHG promoters is maintaining this high group quality. Changes in rural areas have led to a decine in some of the original disciplines, such as regular SHG meetings. In older groups, particularly in southern states, members often skip meetings, sending their savings and loan repayments through family members, and attending meetings only for loan-related matters. With microfinance maturing and loans readily available in the south, the need for frequent meetings has diminished, leading to meetings focused mainly on financial transactions. In contrast, SHGs in developing states continue to engage in development-oriented discussions that cover livelihoods, health, nutrition, and government programmes. To rekindle interest and maintain quality, SHGs should allow flexibility in meeting frequency, focusing agendas on relevant topics like livelihood improvement and quality of life enhancement. Offering information that resonates with members' immediate concerns can encourage greater participation. Digital platforms, including short videos and e-learning modules, offer a modern way to share information, allowing women to access content at their convenience, ensuring that members remain informed and active without the limitations of physical gatherings.

Renewed focus on savings: SHGs initially prioritised savings mobilisation which was a key indicator of group quality. However, this focus has diminished over time, as external funds (e.g., revolving funds, CIF, and bank loans) now far exceed members' own savings contributions. This reduces members' personal investment in the group, weakening peer pressure. To strengthen the SHG system, there should be a renewed focus on internal savings, so that members build equity that benefits them beyond public schemes. Successful long-running groups like MYRADA should be studied for lessons that could be applied nationwide.

Federations as autonomous institutions: Federation ownership, particularly within CLFs, is often not fully understood by SHG members. While SHGs engage with village organisations and resonate with their activities, CLFs often seem distant from the village, and members receive limited information about their functioning. As a result, members do not feel the same sense of ownership towards CLFs as they do for their SHGs or village organisations. To strengthen the bond between SHGs and CLFs, SHGs need to become shareholding members of CLFs, by transforming into Producer Organisations. This financial ownership would empower SHGs with rights to access finance and markets, encouraging more active participation in CLF activities. CLFs need to demonstrate their value by showing how their actions benefit individual households and members directly.

NRLM has already initiated a visioning process that will culminate in a five-year vision document for each CLF. Detailed action plans, business development strategies, and convergence plans with government departments are derived from these plans. For this to be effective, NRLM needs to make the visioning process an ongoing practice,

updating the plans annually. Additionally, the visioning process should not be limited by the federations' current roles. Instead, the focus should be on capturing all member needs and identifying resources and expertise to meet them, ensuring SHGs continue to progress. To evolve into self-actualising entities, federations need enhanced capacity building in governance, business literacy, and financial and business decision-making. Board members should receive fair compensation, aligned with business volumes and outcomes, to attract competent individuals. Only then will these institutions function effectively and independently.

Funders may sometimes see themselves as the movement's primary drivers, but in reality, it is the women and their institutions who are the real agents of change. Governments and civil society organisations must act as catalysts, and a reassessment of the power dynamics between the state, other agencies, and women's institutions is essential for achieving long-term success.

Enabling legal framework: SHG members require customer protection similar to those available to other financial service customers, which can be ensured through appropriate regulation of higher-tier SHG institutions. These institutions must meet two key criteria: they should be able to engage in business for and with their members, and they should be regulated by existing authorities. Many federations are currently registered as Trusts or Societies, which do not allow for member participation in governance or proper accountability. Self-reliant cooperatives are a better legal form but they need to allow SHGs to enroll as primary members. The most suitable legal forms for SHG federations are Company or Cooperative Society, both of which allow for business activities and member accountability.

Policymakers and SHG-promoting institutions should collaborate to establish a legal framework that allows SHG institutional membership and enables them to provide a range of services and conduct business. Farmer Producer Companies (FPCs) offer flexibility, as they allow unregistered groups to hold shares and are well-suited to SHG-based commercial entities. Some states also allow cooperative societies to enrol SHGs as members. A regulatory framework is essential to ensure the long-term functionality and sustainability of SHG federations, particularly those engaged in providing financial services.

Regulation of the SHG movement: The SHG movement has grown significantly, and while bank-related savings and loans are tracked, internal savings and loans within groups remain largely unmonitored. With a large population of vulnerable women involved, regulation is necessary to secure their savings and maintain reliable access to credit. To regulate SHGs effectively, a delegated regulation approach can be adopted. A Self-Regulatory Organisation (SRO) could be established to supervise CLFs and other higher-tier institutions, ensuring discipline and financial health at the lower levels, such as SHGs and VOs. Alternatively, a regulatory body within NABARD or another national institution could assume this role. The regulatory framework should include prudential norms, regular audits with financial disclosures, a grievance redressal system, and an accountability structure.

Business development services for enterprising women: SHG members transitioning to higher-level livelihoods often encounter challenges in securing finance, market access, and meeting statutory requirements. Although women-led enterprises offer significant potential, smaller businesses still face challenges in accessing credit. Measures such as risk funds, guarantees, and market support mechanisms can facilitate credit for these ventures. Additionally, CLFs can assist with compliance such as GST, IT, and invoicing. As SRLMs and other promoters may lack the capacity to provide this support, civil society organisations and specialised entities should be engaged in nurturing emerging enterprises. For example, Bihar's Jeevika initiative has introduced Business Development Service Providers and established OFS centres under the NRETP project to support entrepreneurs, while TNRTP has launched similar centres to support both individual and group enterprises. Expanding these efforts across other states could support the emergence of enterprises. To advance enterprise financing, SHG data should be integrated into credit information bureaus, and banks should work towards digitising savings and credit operations. A digital accounting framework would simplify regulation and enhance transparency.

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2 This data is drawn from NABARD state of micro finance report 2024.

3 Age of CLF—minimum 6 months, CLF should have opened its bank account, At least 50% of SC/ST HHs covered under SHG fold, At least 60%SHGs are in A or B Grade, At least 75% of VOs are in B grade, Disbursement of RF to 70% of eligible SHGs and CIF to 50% SHGs, CIF repayment mechanism (member to SHG, SHG to VO and VO to CLF) in place, CLF should have completed basic CLF management and accounting training, Pool of committed Community Cadres trained and deployed.

4 Access to rights and entitlement of the members, to fight against social injustice and ensuring that basic services in health and sanitation, education and legal counselling are provided to the members.

5 Capacity building of SHGs and VOs through training and exposure visits, audit, gradation and rating of federations, necessary legal compliances of federations and convergence with government departments.

6 Livelihood promotion and diversification and marketing with focus on both off farm and on farm enterprises. The objective is to increase income with through skill enhancement and marketing of produce.

7 Collection of savings by SHGs and make available loans. the CLF also provides insurance and pension facilitation to all its members.

8 Their core activities include trainings and capacity building, visioning, business plan preparation and also grading of the CLFs.

9 Visioning exercise was carried out in these CLFs involving as many SHG members as possible to bring their perspectives on how they would like to see their households and village and to achieve this vision what CLFs should do.

10 SHGs in existence for a minimum period of 3/6 months and follow the norms of good SHGs known as 'Panchasutras', viz., regular meetings, regular savings, regular internal lending, regular recoveries and maintenance of proper books of accounts, and which have not received any RF earlier will be eligible for such support.

11 The State Missions can provide up to ₹6,000/- per member in three forms viz., CIF vulnerability reduction fund at the rate of ₹1,500/- per member, CIF seed capital at the rate of ₹3,000/- per member: and CIF livelihoods fund at the rate of ₹1,500/- per member. In respect of SC/ST members, the total entitlement can be increased by 50% (i.e., ₹.9,000/- per member for 3 components) and in respect of PVTGs to ₹12,000/- for 3 components subject to the overall ceiling of ₹0.3 million per SHG for CIF.

12 Kochar, A, Nagabhushana, C, Sarkar, R, Shah, R and Singh, G, 2021.The policies that empower women: empirical evidence from India's National Rural Livelihoods Project, 3ie Working Paper 40. New Delhi: International Initiative for Impact Evaluation (3ie). Available at: DOI http://doi.org/10.23846/WP0040

13 Data seen on 25 September 2024 on https://nrlm.gov.in/RevolvingFundDisbursementAction.do?methodName=showDisbursementToSHGAndRemainingEligibleSHG

14 Data seen on 25 September 2024 in https://nrlm.gov.inCommunityInvestmentFundDisbursementActiondo?methodName=showDisbursementToSHGAndRemainingEligibleSHG

15 World Bank, 2023, Implementation Completion and Results Report, Bihar Transformative Development Project, pages 75 and 76.

16 A web portal was created to overcome information asymmetry in SHG-Bank Linkage, incorporating data directly from Banks' Core Banking Solution (CBS) database. All the Banks involved in SHG lending share monthly data on disbursements, outstanding loans, NPAs, etc., enabling comprehensive and effective program monitoring at all levels.

17 The data have been provided by Financial Inclusion head in Project Management office of BRLPS.

18 Office order seen in the web https://brlps.in/UplodFiles/Order/2022/Office%20Order%20No%201691%20Dated%2022%2007%202022%20regarding%20Grameen%20CIBIL.pdf on 1 October 2024.

19 MORD, 2024, Implementation of Lakhpati Didi Scheme, Rajya Sabha Starred Question No. 202, answered on 09/08/2024.

20 MORD, 2023, Study to Understand Effectiveness of BC Sakhis under DAY-NRLM, Draft report, Study conducted by Truagrico.

21 Tamil Nadu Empowerment and Poverty Reduction Project funded by World Bank and implemented by the Tamil Nadu Corporation for Development of women was probably the first major initiative to systematically identify the very poor and vulnerable communities to be included in self-help groups. The village poverty reduction committee (VPRC) formed in each village panchayat was designed to address inclusion challenges and the project funds were given to the VPRC. The Participatory Identification of the Poor (PIP) process was adopted and utilising the Village Fund, the very poor in the village especially women and unemployed youth were able to start potential productive investments for self employment and income generation which enabled them to improve their savings ability and participate meaningfully in SHGs.

22 Viewed on 17 September 2024 from the site https://nrlm.gov.in/nrlmdemo/LakhpatiHHAction.do?methodName=showDetail

23 New Finance commission will be set up for 2026- 31 when next phase of NRLM will be approved by the Parliament.

24 All banks extending credit for enterprises fully or partially owned by women SHG members under DAY-NRLM at interest rate equivalent to (1-year MCLR + maximum 3% spread) or maximum of 14% per annum will be eligible to claim interest subvention.

25 These enterprise professionals are paid ₹5000 per month as a fixed salary and apart from this performance linked incentives are also paid to them for different activities.

26 The discussions with the 30 year old groups have been documented in Access Knowledge Series, Spring board for powering women—three decades of SHG movement, Girija Srinivasan and N. Srinivasan, published in 2023.

Exploring the Phenomenon of Debt Distress and Possible Solutions

Dwijaraj Bhattacharya and Indradeep Ghosh

4

4.1. INTRODUCTION

The microfinance sector has been facing several challenges, particularly around debt distress and over-indebtedness, which are raising concerns among regulators and providers alike. Once envisioned as a tool for poverty alleviation and a bridge to formal finance, microfinance has become a permanent and significant fixture in the financial lives of many borrowers, especially those from low-income backgrounds. These concerns are not new. Before the pandemic, signs of overheating were observed in eastern India, and prior to that, there was a crisis in Andhra Pradesh.

This chapter explores the phenomenon of debt distress from two perspectives. Section 4.2 presents the supply-side view or the provider's perspective, which is familiar to most industry stakeholders. Therefore, this discussion has been kept short. Section 4.3 focuses on the demand-side view or the borrower's perspective, which is less well understood. Our primary contribution is to explain this perspective in detail. In section 4.4, we identify solution pathways and make our second key contribution, reframing the problem of debt distress as a cultural phenomenon rather than an economic or technocratic one. Overall, the chapter emphasises the realities of the sector that create a feedback loop, where lenders are incentivised to over-lend and borrowers to over-borrow, until crisis intervenes as a necessary and often tragic correction.

4.2. THE SUPPLY-SIDE PERSPECTIVE

In recent quarters, the microfinance sector has witnessed an increase in delinquencies. Non-performing assets (NPAs) increased by 26 basis points, from a post-COVID low of 0.9% in September 2023 to 1.16% in March 2024.[1] Further, the proactive increase in provisioning by providers[2] indicates they are expecting turbulence in loan repayments, acknowledging a decline in borrowers' ability to repay. The data for first quarter (Q1) of financial year (FY) 2025 paints a grim picture. During this period, both PAR 61–90[3] and PAR 91–179[4] increased by 30 basis points.[5] For some microfinance providers, like Fusion Microfinance Institution (MFI) and Evangelical Social Action Forum (ESAF) Small Finance Bank (SFB), Non Performing Assets (NPAs) increased by over 250 basis points and 185 basis points, respectively.

This rise in delinquency, especially in Q1 of FY 2025, is often explained by three factors — heatwaves, elections and promises of loan waivers. If we go back just five years, the same factors were also present. The summer of 2019 broke many records; it also had an ongoing election along with associated promises like loan waivers. However, Q1 of FY 2020 neither showed a decline in disbursement (rather it grew by 7.28% quarter on quarter [QoQ] in Q1 of FY 2020[6] compared to a decline of 36% in Q1 of FY 2025[7]) nor a dip in portfolio quality (NPAs *declined* from 0.45% to 0.4% QoQ in Q1 of FY 2020[8]). Thus, it is unlikely that heatwaves, elections and loan waivers completely explain the state of the industry. To understand this rise in delinquency, it will help to examine the growth strategy of the microfinance industry.

For MFIs, there are two levers of growth—an increase in the client base and a rise in the amount lent. The number of unique microfinance clients has increased by only 24.3% between July 2019 and March 2024. On the other hand, the industry's assets have doubled over the same period.[10] Over the past five years, the growth has predominantly been

in terms of higher disbursements. Often, industry participants construe higher disbursements as simply more loans per customer, which has made the average number of loans per customer a key indicator. What remains amiss in the narrative, however, is the possibility of larger loan amounts. The state of Tamil Nadu is a good candidate for exploring this phenomenon.

According to Sa-Dhan's *Quarterly Microfinance Report,* as of March 2024, the number of loan accounts in Tamil Nadu stood at 17.02 million compared to 17.2 million as of March 2022. Despite the decline in loan accounts, the average loan outstanding increased from 349.5 billion in March 2022 to 529.1 billion in March 2024. The state ranked second, among all states, in terms of the number of loan accounts, number of unique borrowers, amount of loan outstanding and amount of loan disbursements. Tamil Nadu has also emerged among the top 10 states based on average ticket size, reaching ₹53,555 as of March 2024—an 8% increase from the previous year. This is a significant jump, given that Tamil Nadu was not even among the top 10 states for this metric prior to March 2022. The situation is not so different in other states. Almost everywhere, the growth strategy has resulted in a higher loan burden per borrower, which is the necessary precursor to debt distress. This strategy of focusing on growing loans instead of the borrower base originates in supply-side realities.

It is a common practice for borrowers to borrow from one MFI to repay another, and then borrow from another to repay the second lender, and so on. Though such churning can be inferred from the credit reports, aggregate indicators, like the average number of loans outstanding, do not capture churning.[11] We discuss churning in greater detail in section 4.3. Still, the phenomenon results in a false sense of security for the providers, thus incentivising further growth of their asset book. Further, despite the best efforts of the industry, creditworthiness assessments remain notoriously unreliable. Assessing income, given most MFI borrowers tend to have informal employment, is an arduous task. Moreover, most financial services providers update the credit bureaus monthly, so capturing the true extent of formal-sector indebtedness (let alone the informal sector) is also difficult. Thus, even if a provider decides not to over-lend, they seldom have the tools to execute such a plan reliably.

Most of these supply-side hurdles are well-documented through previous research and industry reports. Some of Dvara Research's past work has focused on bringing these realities of the sector to the forefront. However, attempting to understand debt distress from only one side of the market is like attempting to clap with one hand. In section 4.3, we therefore turn to the borrower's perspective.

4.3. THE DEMAND-SIDE PERSPECTIVE

In a number of papers (2013, 2012, 2011), Jessica Schicks points out that the supply-side perspective offers an incomplete picture of debt distress because it fails to disclose the struggles that borrowers endure even while they continue to repay their loans. That is, borrowers may experience distress, even if high repayment rates would suggest that microfinance is an enviable industry to enter. Indeed, taking high repayment rates as a signal that *all is good* might cause lenders to double down on credit disbursement, even to distressed borrowers, thereby further squeezing and impoverishing them, while driving not-yet distressed borrowers towards the edge of over-indebtedness. When, finally, repayment rates begin to systematically falter, because distressed borrowers are no longer able to bear the suffering that their desperate strategies to repay inflict upon them, then and only then the lender's perspective signals that something is wrong. By then, however, the condition of distressed borrowers might have driven them to take extreme measures, even suicide.

Schicks, therefore argues that the borrower's perspective on debt distress must adopt a customer-protection orientation. In taking this view, she reveals several aspects of how the microfinance industry functions to be much more ambiguous than they may appear at first glance. For instance, the belief that competition on the lending side would be enough to prevent debt distress is shown to be misplaced. Much depends on whether that competition is elevating the standards of credit assessment or worsening them, because both outcomes are possible under different enabling conditions of regulation and supervision.

Similarly, with regard to consumption loans, she writes:

> ***…. loans used for consumption purposes have been identified as a source of over-indebtedness as these loans do not provide debtors with returns for repayment (Vogelgesang, 2003). This argument, however, should be treated with caution: first, as money is fungible and a distinction rarely exists between household and micro-***

enterprise cash flows, many microloans are used for household purposes. Second, distinguishing between consumption and production loan use can be difficult, as in the example of educational expenses (Collins, 2008). Third, theory is gradually moving away from a micro-enterprise approach to a household finance approach. The latter considers the benefits of microfinance to be in short-term consumption smoothing and managing the risks of low and volatile incomes (Collins et al., 2009; Karlan & Zinman, 2009). Therefore, the use of finance for consumption can be both a cause of and protection from over-indebtedness (Schicks, 2013).

Schicks' work makes two other important contributions to our understanding of debt distress from a borrower's perspective.

First, she provides us with a meaningful definition of debt distress as experienced by the borrower. After considering several scholarly definitions that span the space of different binaries (e.g. quantitative-qualitative, objective-subjective, etc.), she settles on the work of scholars such as Guerin et al. (2009 and 2011) and Lusardi and Tufano (2009), which rely on self-reported data as better indicators of debt distress than external data such as arrears or debt-income ratios.[12] Further, she insists that a proper definition of debt distress should clearly specify what the borrower is to be protected from, which she concludes should be 'unduly high sacrifices' where 'unduly high' is taken to mean 'unacceptable to the borrower' and is therefore a judgment that, she suggests, is best left to borrowers themselves. This then suggests a sacrificed-based definition of debt distress that precludes strategic default or the deliberate accumulation of unsustainable amounts of debt. In other words, Schicks believes that her definition is able to tease out the borrower's intentions, insofar as debt distress is defined as a condition that the borrower does not intend for themselves.

Second, Schicks provides a number of reasons, also from a borrower's perspective, for the emergence of debt distress as defined above. All of these reasons share a common characteristic—they are all honest mistakes of some form or another, as when socio-demographic or economic pressures combined with the lack of perfect information as well as some deficiency of rational thinking, leads to borrowing that is later found to be too much, and yet repayment must continue so as to not be excluded from credit markets permanently, and this activates the spiral of ever more severe sacrifices.

There is much to commend in Schicks' pioneering work and much of Dvara Research's work on debt distress, as we shall soon see, is inspired by it. Yet, in operationalising Schicks' definition of debt distress, it becomes impossible to escape the self-referential nature of her definition. For if an unduly high sacrifice is whatever the borrower thinks it to be, then one cannot logically insist that the borrower is not intending their condition of debt distress. Thus, some objective standard is needed as to which self-reported sacrifices should be deemed severe and which ones not.[13] Once that is in place, Schicks' definition provides a truly independent measure of debt distress from those that the lender's side typically focus on.[14]

There is another problem with Schicks' work and this has to do with the reasons she offers for the emergence of debt distress. Since the borrower's intentions are thought to be non-incriminating, it would appear that the policymaker who is concerned about debt distress has no recourse except to insist that the lender carry the burden of ensuring that borrowers are not making unduly high sacrifices to repay their debts. Yet, it may be argued that borrowers have a responsibility as well. We take up this question for brief consideration later in this section, and more fully in section 4.4, where we discuss possible pathways for minimising debt distress.[15]

With the above conceptual discussion in place, we proceed to examine the contemporary evidence for debt distress in India from a borrower's perspective. At the lowest resolution, we have the Centre for Monitoring the Indian Economy (CMIE)'s Consumer Pyramids Household Survey (CPHS) dataset, which collects data on a panel of about 170,000 households thrice a year and goes back to 2014. This data offers a low-resolution picture since it does not burrow down to the level of self-reported sacrifices. Therefore, it does not allow us to measure debt distress according to Schicks' criterion. Nevertheless, we may get a sense of prevailing distress by asking what proportion of households in the dataset admitted to borrowing in order to repay previous borrowings. This action, called churning of loans, is a reasonable indicator that the household is finding it difficult to make regular repayments on its existing loans. Between January 2021 and September 2023,[16] this number increased from 11% to 17%.

Among those who were borrowing to repay in September 2023, about 65% were borrowing from

self help groups (SHGs) while about 15% were borrowing from relatives and friends. In other words, the 6-percentage point increase in the proportion of households churning loans does not appear to implicate the microfinance industry as primary facilitators of the churning. Indeed, September 2023 data shows that only 3% of households borrowing from MFIs were borrowing to repay previous borrowings. Nevertheless, the increase in the proportion of households churning loans may well implicate microcredit as the *reason* for churning since a much higher proportion of households in the higher income quintiles[17] were churning loans (for e.g. 16% in quintile 3 and 28% in quintile 4, as opposed to 4% in quintile 1 and 8% in quintile 2, as of September 2023), and it is the higher quintiles that are more extensively served by microfinance. In fact, the proportion of households that were borrowing to repay increased in every quintile between January 2021 and September 2023, with the largest percentage point increases occurring for quintiles 4 (9 percentage points) and 5 (11 percentage points).[18] It is also the case that higher-income quintiles are more likely to have SHG borrowings.

In recent months, some commentary on the incidence of debt distress has appeared on social media websites such as LinkedIn. Much of this commentary also focuses on low-resolution measures of debt distress that do not capture the borrower's perspective.[19] We therefore refrain from citing these data here. Instead, we turn to two pieces of work that specifically focus on sacrifices that borrowers had to or have to make to repay their debts.

The first of these is Guerin *et al.* (2024) which reports the results of a study conducted under the auspices of the French Institute of Pondicherry (IFP) between 2020 and 2022 among select households across three villages in the three adjacent districts of Villupuram, Kallakurichi and Cuddalore of Tamil Nadu. The study consisted of two parts—a qualitative longitudinal component involving repeated interviews with 55 households and a one-time quantitative survey covering more than 400 households.

For the IFP sample, average debt outstanding per household was ₹217,000 (approximately, ₹43,400 per household member, assuming a household of size 5). This amounted to an average debt-to-income ratio of 179%, reaching as high as 211% for some borrower segments. As the authors describe, Covid-19 exacerbated indebtedness and caused households to undertake various strategies that included sacrifices:

While most households were already heavily indebted before the lockdown, nearly a third (32%) had no choice but to go further into debt and/or pledge assets (41%) to cope with falling incomes and repayment pressures. Other coping mechanisms included using ration shops, which most households used (82%), saving (66%), reducing non-food expenses (32%), asking neighbours for help (25%), eating less (22%), collecting wild vege¬tables (17%), receiving remittances (13%), or sharing food or employment (7%) (Guerin et al., 2024).

At the end of the first lockdown (June 2020), 21.6% of the sample had faced significant food insecurity, in the form of smaller meals (18.8%), fewer meals (15.1%) and lack of variety (22.4%). 11.6% reported going to sleep hungry, while 8% reported a whole day and night without food. The authors argue persuasively that much of the blame for food insecurity can be laid at the doors of debt distress, thereby directly validating the Schicks method of measuring distress; provided we can agree that a coping strategy that creates food insecurity represents, in an objective sense, an unacceptable sacrifice, while the numbers who undertook such strategies represent the scale of such sacrifices. Indeed, the authors of the report describe food insecurity among their sample during Covid-19 as being 'severe'.

The second piece of work is an extensive field study conducted by Dvara Research during the summer of 2024 among more than 1,100 customers of a large non-bank financial company (NBFC) in the states of Tamil Nadu and Odisha. The states were chosen due to the greater presence of the NBFC in these locations. To increase geographical spread, sampling was conducted from three districts in each state (Ariyalur, Pudukottai and Thanjavur in Tamil Nadu, and Jajpur, Dhenkanal and Bhadrak in Odisha). A total of 1,142 interviews were conducted, of which 482 were conducted over the telephone and 642 were conducted in person. Alongside questions about income, assets and outstanding loans, interviewees were also asked about how they perceived their debt burden, what coping strategies they were employing for repayment, what shocks they had experienced and how they viewed their financial wellbeing. Researchers allowed interviewees to choose from 8 different coping strategies—depleting savings, working more than usual, postponing planned expenses, skipping

festival celebrations, pulling children out of school, foregoing medical expenses, selling or pawning assets and borrowing to repay. Of these, the first four were classified as 'mild' coping strategies while the last four were classified as 'severe' coping strategies. Interviewees were also asked to report the frequency at which they adopt these coping strategies.

Before we present the results, it is worth noting that the features of the Dvara Research study allow one to construct a picture of distress that includes the Schicks definition and also goes beyond it. To understand how, consider that the label 'coping strategies' is preferred over 'repayment strategies' since the interviewees were not presented with the most obvious option for debt repayment, which would be to repay out of an income stream. This omission was deliberate so as to include only those repayment strategies that would signal some level of distress. Yet, this level of distress may not satisfy an objective standard of requiring unacceptable sacrifices. For instance, it is possible to regard none of the mild coping strategies as amounting to an unacceptable sacrifice—unless, of course, one asks the borrower, which Schicks would recommend. However, asking the borrower's opinion would land us in a quandary because, as stated earlier, it is no longer possible to then cleanly separate out those situations of debt distress that are truly unintentional. Thus, it is possible that the borrower knew, at the time of taking a loan that repaying it would mean working more hours than usual. Then, the coping strategy of working more hours than usual is really a repayment strategy and there is no distress as such to be coped with.

The above discussion implies that the intentionality or non-intentionality of a particular instance of repayment difficulty can only be arbitrated in one of two ways—either through an objective definition of which coping strategies amount to unacceptable sacrifices, or through the notion or conceptual device of radical uncertainty that intervenes decisively in any intended plans to repay, after the loan is taken.[20] We assume that these are mutually exclusive conceptual pathways, even if in practice they may both be implicated in any particular instance of repayment difficulty. Given this conceptual partitioning, only in the latter case of radical uncertainty can the borrower be absolved, at least conceptually, of their own responsibility for debt distress. In the former case, the borrower may still be reasonably expected to bear a part of the blame, even when the coping strategy amounts to an unacceptable sacrifice. This distinction matters when we are required to imagine solutions for the problem of debt distress. We will return to this point in section 4.4.

For now, we set aside this issue and presume that no objective standard exists as to what an unacceptable sacrifice could be. Nevertheless, it is still possible to categorise and differentiate coping strategies into mild and severe, as if an objective ranking of severity does exist, insofar as pulling one's children out of school can be objectively regarded as more severe than depleting one's savings. The survey results indicate that 72% of the respondents adopted only mild coping strategies, 18% adopted both mild and severe coping strategies, and 10% adopted only severe coping strategies. The debt-service ratios (debt-to-disposable income ratio, henceforth DSR) of these three groups were 66%, 69% and 128%, respectively, indicating that the DSR may well be a good correlate of debt distress. Further, many of those who adopted severe coping strategies did so quite frequently. For instance, 54% of the respondents who reported foregoing medical expenses characterise it as a strategy that they adopted very often or frequently. The same number for those borrowing to repay was 41%.

The DSR also correlated strongly with self-reported perceptions of indebtedness (on a rising numerical scale of 1–5). Yet, the questions related to financial wellbeing revealed that subjective states are not a very reliable indicator of distress, if distress is to mean a condition that extracts an unacceptable sacrifice. Thus, despite the fact that every household used at least one coping strategy during the study period, 53% of in-person respondents and 42% of telephonic respondents answered 'No' to (or disagreed with) the statement 'I am unable to enjoy life because I worry too much about money'. 85% of telephonic respondents answered 'Yes' to (or agreed with) the statement 'I will be able to achieve financial goals in life'. Certainly, very general questions about life satisfaction failed to elicit signals of distress. Out of 103 respondents with a DSR greater than 1, a full 79 reported feeling somewhat (72) or completely (7) satisfied with their lives.

Overall, the Dvara Research study makes it possible to define debt distress in a variety of different ways like self-reported level of indebtedness, low consumption, borrowing to repay, self-perceived burden from loans, self-reported repayment struggles, anticipation of future repayment difficulties, or adoption of coping strategies. It also points to the importance of collecting information on the kinds of shocks that borrowers have endured or are attempting to endure, since that may shed light on the question of whether a particular instance of

repayment difficulty was or is entirely unintentional. While only a few of the results of the study are presented above, we hope that the reader is able to appreciate why such a multi-pronged approach to distress measurement is necessary to obtain a comprehensive, albeit complicated, picture of over-indebtedness from the borrower's perspective.

4.4. POTENTIAL SOLUTION PATHWAYS

We will explore two possible solution pathways for addressing the phenomenon of debt distress. The first one will follow a conventional mode of thinking in so far as this pathway is quite popular in the policy discourse and among regulators and lenders. Even if conventional, this mode of thinking will allow us to showcase two pieces of Dvara Research's work that are quite new and therefore will be of natural interest to the reader. The other pathway requires a paradigm shift in our thinking itself and we will spend the better part of this section focusing on this second pathway.

4.4.1. The Conventional Approach

The problem framing here follows a familiar approach, considering three possible stages of the lending journey at which a solution to debt distress could be implemented. First is the credit-assessment stage, where the solution concept would seek to exclude borrowers who are either already distressed or at risk of becoming distressed if granted another loan. Second is the credit-use stage, after the loan has been disbursed, where the solution would focus on monitoring credit markets at various levels of detail to identify instances of debt distress. And third is the distress-alleviation stage, which involves addressing borrowers who have been identified as distressed, with the solution aiming to devise ways and means to alleviate their distress.

We may note that the first stage is of special (though not unique) interest to lenders. The second phase is of special (though not unique) interest to the regulators and supervisors. The third phase is of special (though not unique) interest to the insolvency authority, if there is one. As such, each of these stages has attracted special attention from the relevant stakeholder and has occasioned the publication of thought pieces, position papers, policy guidelines, etc. which the reader will most likely be quite familiar with already. For instance, it will not be news to the reader to hear that DSR is considered by lenders to be something of a gold standard in assessing credit repayment capacity, except in cases of new-to-credit customers where alternative credit scoring techniques are becoming increasingly popular. Similarly, it is well known that India's Insolvency and Bankruptcy Code has a significant, albeit not yet notified, part dealing with the resolution of personal insolvency. We will, therefore, not dwell on these aspects in this chapter, except to note that none of the existing literature that takes this conventional approach really adopts a borrower's perspective as outlined in the previous section.

Against this background, Dvara Research is attempting to make a unique contribution to the second stage of the lending journey by developing a debt distress detection tool that uses machine learning methods to predict distress on the basis of repayments data. The tool is joint work between Dvara Research and Indian Institute of Technology (IIT) Madras' Robert Bosch Centre for Data Science and Artificial Intelligence (RBCDSAI). This work is yet to be published, but we can report that it promises to be quite effective in identifying debt distress in the sense of borrowers facing repayment difficulties and employing severe coping strategies and it does this by studying administrative data (i.e., data collected in the course of normal business by lenders, or data that sits with credit bureaus), even if this data does not contain explicit information about coping strategies. In other words, the Dvara Research-IIT Madras tool is able to predict something that is not directly observed (i.e., debt distress) using information that is directly observed (i.e., repayments data). It is expected that once this tool is ready, not only lenders but also credit bureaus, self-regulatory organisations and even the regulators can benefit from its use, although it is worth remembering that because this is a machine learning tool it will need to be retrained from time to time so as to maintain a high standard of performance accuracy.

A second piece of work by Dvara Research that also contributes to the monitoring stage of the lending journey is now published and consists of a comprehensive framework for monitoring credit markets at various levels of resolution (Dvara Research, 2021). The framework articulates a long list of indicators classified into three types—market-level indicators, provider- or lender-level indicators and borrower-level indicators. Some of the information required to create these indicators is already being collected by the regulator, but not all of it, and the Dvara Research framework therefore lays out a plan for progressively bringing more and more information on-stream so that the full list of

indicators can be tracked on a regular basis by the regulator. The promise of the framework is that the full list of indicators will provide the regulator with a comprehensive picture of incipient distress across the length and breadth of the country, along with a host of other metrics that speak to the state of credit inclusion in India.

4.4.2. A New Paradigm

Any new paradigm deserves its own full chapter, but given space limitations, here we will try to sketch the broad contours and leave the rest for future writing. Our basic premise is that the search for solutions to the problem of debt distress may benefit from a reframing of debt distress as a cultural phenomenon rather than an economic or technocratic one. In order to make this argument, we first articulate what we mean, in generic terms, by the phrase 'cultural phenomenon'. Then, we show how solutions for policy problems can be imagined within a cultural frame. Finally, we show how the problem of debt distress can be put inside the frame for potential solutioning.

Culture[21] is any symbolic logic of meaning making shared by a group of people. Obvious examples are language, the arts, literature and religious beliefs. Less obvious examples are the mathematical methods of mainstream economics (which bind all who practice such methods in a common understanding of how to represent the world around them), or the tendency among certain sections of society to 'cancel' representatives of other sections from the public sphere (which again binds all who practice 'cancel culture' in a common understanding of what is appropriate behaviour or speech in the public sphere and what is not).

The basic unit of analysis when one is thinking of culture is the cultural trait,[22] which is a belief or behaviour or practice that is observable at either the individual level or the group level. All the examples cited above—a language, an art form, a literary genre, a religious belief, a certain method of academic inquiry—are cultural traits. Cultural traits can range from deeply embedded habits and practices, such as those prescribed by any of the world's ancient religions, to transient and fleeting ones such as fads and fashions. Thus, a cultural trait may have come down the ages from our ancestors, or it may have gained popularity recently because some well-known actor or cricketer publicly adopted and advocated it. In either case, the trait would have been transmitted through social learning, i.e., emulation and imitation of behaviour. The technical term for this kind of transmission is that it is phenotypical, as opposed to genetic.

Another important point to note is that the transmission of cultural traits is adaptive, in the sense that which traits get transmitted versus which ones do not have to do with which traits appear to favour greater survival or reproduction possibilities. Genetic transmission is also adaptive but genetic adaptation occurs very very slowly. Cultural transmission can occur much faster and different cultural traits can appear and disappear in a particular age cohort several times during a single lifetime. In particular, cultural traits that are transmitted via monetary exchange (for example, we see someone rich and famous spending their wealth in a certain way and we wish to emulate it) spread easily, but also disappear easily. This is precisely what advertising thrives on. On the other hand, cultural traits like religious practices or social structures, that have survived centuries of adaptive churn, are extremely difficult to shift. For example, think of the cultural practice of choosing auspicious dates from a lunar calendar for Hindu weddings—this is a centuries-old practice, if not millennia-old, and therefore highly resistant to change. Precisely because cultural transmission is adaptive in an evolutionary sense, understanding the history of a cultural trait is therefore a precondition for understanding the properties of the trait, including whether it can be shifted or not and with how much difficulty.

There are broadly two modes of dealing with culture as far as policymaking and policy research go. The first is to be wilfully culture-blind, which is to treat culture as a given, and not just as a given but also as a black box. That is, this mode does not really bother to understand how culture is influencing economic outcomes. Much of financial inclusion policymaking, we would argue, is of this kind. We can even go further. Much of public policy writ large is culture-blind, which is also why much of public policy writ commits several fundamental errors of judgment—for e.g., mistaking the particular for the universal, or mistaking monetary value for actual value, or mistaking explanatory power of a theory for predictive power of a theory. Adding culture consciously to the analytical toolbox corrects all these errors. Cultural context is what makes the particular 'particular'. Cultural logics of meaning can exceed monetary value. And finally, cultural differences between a specific time and space and another are what introduce conceptual distance between explanation and prediction.

A second approach to incorporating culture into policy and research is to study the cultural origins of the proximate behaviour one is seeking to understand and shift. One can then parse cultural traits into those which one should indeed take as given (say, because they have survived many decades, if not centuries, of adaptive churn) and those which one can hope to shift (say, because they are relatively more recent in historical origin). This last category holds the greatest promise for policy and research (and also for product design) because the shift can be expected to happen at the group level and not only at the individual level. That is, the problem of scale is partly solved by the design of the intervention itself and it is not a problem to be solved *after* a highly localised and individual-centred intervention is found to be successful.

Cultural evolutionary behavioural public policy (CEBPP)[24] is an emerging science of how such shifts in cultural traits may be encouraged to happen. The interventions typically must have three properties—they must be efficient, endogenous and legitimate. Muthukrishna writes:

> ***An intervention can be efficient by targeting only a subset of the population, and endogenous, because the goal is to trigger spillovers where most change happens beyond the campaign. This efficiency and endogeneity create legitimacy. Smaller, targeted campaigns are less like cultural assault from outsiders through persuasion or choice architecture and more like empowering a subset of individuals whose values spread through conformity (Muthukrishna, 2019).***

Thus, the subset for whom the intervention needs to happen, has to be chosen with great care and understanding of both the trait and its transmission dynamics. Once that subset's behaviour shifts, then one relies on endogenous cultural transmission beyond the site of intervention for scaling to occur. Note that this suggests that the logic of cultural intervention is quite a bit different from the logic of behavioural or literacy or any of the kinds of interventions that the method of randomised control trials focus on. From the very start, a cultural intervention is targeted at a very specific group whose change in behaviour can be expected to be copied via imitation and emulation. So the point is *not* to randomise.

With that conceptual background in place, let us now ask how does all of this matter for debt distress? A proper understanding of cultural traits can help us think of a 'credit culture' on both sides of the market. On the lender's side, any single lender cares little about the actual exposure of borrowers that it is lending to, and this spreads among the entire group of lenders through imitation so that it becomes a cultural trait on the supply side. On the borrower's side, any single borrower cares little about how much debt it is churning, and this spreads among the entire group of borrowers through imitation so that it becomes a cultural trait on the demand side. Both of these behaviours may have been adaptively appropriate at a certain stage of maturity of the credit cycle or the credit market, but in time, these behaviours can become maladaptive—insofar as they produce a situation with high levels of debt distress and potential failure of loan books en masse.

We note the following features of the credit cultures on the two sides of the credit market. On the lender's side, the culture is brought on by a tension of forces that lenders experience—the demand from the regulator of a healthy loan book and the demand from investors of growth. But that is not the complete picture. On the borrower's side, the culture is brought on by a tension of forces that borrowers experience—the necessity of repaying lest they become excluded from the market and the social pressures that typically give rise to conspicuous forms of consumption (that we might also call social consumption). But that too is not the complete picture. The reason that the picture is incomplete on each side is that on each side, it misses the reinforcing loop from the other side's culture. Once this is accounted for, then we see that the culture on each side feeds into and amplifies the culture on the other side, because the cultural trait of churning is enabled and accentuated by the cultural trait of inadequate credit assessment and vice versa. Indeed, not only do borrowers and lenders exhibit their respective cultural traits as described, but in some respects, they are compelled to do so because the credit culture on each side can also be given the interpretation of a 'social dilemma', where no one actor on each side has an incentive to deviate from the culture without causing damage to themselves, and yet on each side the group as a whole compromises its longevity in the market. This explains why it is appropriate to term these traits as maladaptive—they reduce group fitness, understood as survival probability of the group (lenders as one group, borrowers as another), over time.

Another way to appreciate our notion of a credit culture is to consider that when a lender takes on a new borrower despite knowing that the

borrower may be churning, then the lender does not internalise the externality that it is imposing on other lenders, since other lenders are also impacted by its decision to take on such a borrower. If it were to internalise the externality, then the lender would be unable to grow. As long as the perverse credit culture persists, the lender is incentivised to continue exhibiting the cultural trait. A similar argument may be made for the borrower's side, where there is an externality imposed by each borrower on other borrowers when the borrowing is for conspicuous consumption, thus necessitating churning at some point for the borrower and imposing a compulsion of churning on other borrowers. In each case, social pressure is the operative principle in action. That the cultural traits have economic implications (as the language of externalities makes clear) should not be surprising, but it is important to understand that the economic framing is incomplete, insofar as economic outcomes are downstream from culture.[26]

These kinds of social dilemmas are very difficult to solve using regulatory approaches which tinker with observable or measurable economic indicators. CEBPP, on the other hand, holds out some promise for solving them, because it goes beyond proximate behaviours to the ultimate or deeper causes of the problem. In accordance with the principles laid out earlier in this section, Dvara Research is working on developing an intervention that will seek to reduce the incidence of the cultural trait of loan churning. This, of course, presupposes that not only the lender but rather the borrower also bears some responsibility for the phenomenon of debt distress. It is our contention that this responsibility goes beyond the gaining of financial literacy or the elimination of cognitive biases—as some scholars, like Schicks, have proposed, and which amount to proximate framings of the problem—and consists instead of wilfully deviating from a cultural trait that may have been brought on by the advent of microfinance, and is therefore historically not too dated to be rigid and immutable. The reason for insisting on a definition of debt distress in the previous section that opens some room for the borrower to bear responsibility now becomes clear. It also opens both conceptual as well as practical space for a suitable solution on the borrower's side of the market.

We end this section on the hopeful note that Dvara Research's work will yield a meaningful pathway for reducing the phenomenon of debt distress, that has hitherto not been imagined and that is therefore fundamentally new, requiring a paradigm shift in one's thinking about the problem.

4.5. CONCLUSION

In this chapter, we have laid out, in some detail, a definition of debt distress from the borrower's perspective. This has allowed us to view the problem through a cultural lens, and opened the space for suggesting a cultural intervention on the borrower's side that might reduce the incidence of debt distress going forward. These are both novel contributions to the policy discourse on debt distress, and we hope that they will stimulate much discussion and debate among our readers.

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i Microfinance Industry Network (Aug, 2024), Micrometer Q1 FY 2024-25.

ii India Ratings and Research (Aug, 2024), Microfinance: MFI Borrowers Hit a Speed Bump; Course Correction Likely in Next One-to-Two Quarter.s

iii PAR 61-90 depicts the portfolio at risk (i.e., amount outstanding) that has not been repaid for over 60 days but less than 90 days.

iv PAR 91-179 depicts the portfolio at risk (i.e., amount outstanding) that has not been repaid for over 90 days but less than 180 days.

v Microfinance Industry Network (Aug, 2024), Micrometer Q1 FY 2024-25.

vi SIDBI (Aug, 2024), Microfinance Pulse Report (Volume XX).

vii Microfinance Industry Network (Aug, 2024), Micrometer Q1 FY 2024-25.

viii SIDBI (Aug, 2024), Microfinance Pulse Report (Volume XX).

ix SIDBI (Aug, 2024), Microfinance Pulse Report (Volume XX).

x SIDBI (Aug, 2024), Microfinance Pulse Report (Volume XX).

xi When a household borrows from one MFI to repay another MFI, it simultaneously creates a new loan and extinguishes another loan. For example, a borrower may borrow ₹50,000 to repay an outstanding of ₹30,000. So, the number of loan for the borrower remains virtually constant, since the credit bureau records are often updated monthly, and as long as the churning happens within the span of a month, the new loan does not lead to an increase in the number of loans for the borrower. However, indebtedness increases.

xii Guerin et al. (2009a, b) study India, while Lusardo and Tufano (2009) study the US. For the utility of self-reported measures in other contexts, see Gathergood and Guttman-Kenney (2016) who study the UK and Cifuentes and Martinez (2020) who study Chile. For how lender-side data fails to accurately predict debt distress in the UK, see Guttman-Kenney and Hunt (2017).

xiii Here, 'objective' does not mean context-independent or time-invariant – it just means a standard or measure that does not require for its validation the borrower's opinion about a particular coping strategy's acceptability.

xiv To be fair, Schicks (for example, in her 2013 paper) does offer an example of what she considers to be an unacceptable sacrifice, but then she reverts (in the same paper) to asserting the autonomy of the borrower in adjudicating this critical issue.

xv Once again, to be fair, Schicks (2013) does refer to literacy training for borrowers as one of many possible fixes, but she fails to elaborate on how such interventions might be scaled, and instead focuses much of her discussion of solutions on the lender's side of the problem. In section 4.4, we provide a slightly different framing of the problem on the borrower's side and this allows us to directly and explicitly address the issue of scaled interventions on the borrower's side.

xvi Complete data is available till September 2023 at the time of writing. Therefore, we stop our analysis at that date for the CMIE dataset.

xvii Households with average monthly income less than ₹12,855 are in quintile-1. The range for quintile-2 is ₹12,855 to ₹17,285. Quintile-3 spans average monthly income of ₹17,285 to ₹22,375. The range for quintile-4 is ₹22,375 to ₹30,103. Finally, households in quintile-5 have average monthly income greater than ₹30,103.

xviii We note that the maximum annual income among quintile-4 households in September 2023 was ₹3.6 lakhs

approximately, not much higher than the RBI's threshold of ₹3 lakhs as the annual income that would qualify a household for microfinance. The median annual income among quintile-5 households was ₹5 lakhs approximately.

xix See Agarwal (August 2024) for a typical example, in which debt distress is construed as any overstepping of the RBI's strictures, past as well as present, that mostly calibrate to quantitative thresholds that lenders can or should mark to.

xx Here, two clarifications are perhaps necessary. First, 'objective' here is used in the same sense as earlier in this ssection, as clarified in an earlier endnote. Second, 'radical uncertainty' here is taken to mean, simply, unanticipated large shocks–although it can also mean a much broader class of uncertainties that cannot be described using probabilistic language.

xxi There is a vast academic literature on culture from across disciplines. Here, we mostly rely on the anthropological definition of culture as articulated, for example, in Clifford Geertz's classic work, The Interpretation of Cultures (1973). For more recent treatments of culture, we rely on the work of scholars such as Joseph Henrich, Michael Muthukrishna, and Tim Waring. A good reference in this regard is Muthukrishna's recently published A Theory of Everyone (2023).

xxii Much of our conceptual discussion of cultural traits is informed by Muthukrishna's book, and many of his papers (2023, 2021a, 2021b, 2019).

xxiii See Efferson et al. (2019) and Waring et al. (2015) for examples.

xxiv Schimmelpfennig and Muthukrishna (2023) and Muthukrishna (2019) are key references.

xxv The classic text on social consumption is Thorstein Veblen's Theory of the Leisure Class (1899). Veblen's ideas were further developed by James Dusenberry as the 'demonstration effect' in Income, Saving and the Theory of Consumer Behaviour (1949). The importance of this phenomenon for microfinance customers is well explored in Guerin and Kumar (2019), Guerin (2014), Schicks (2013) and Guerin et al. (2011). The Guerin et al. (2024) study cited earlier reports that the majority of borrowings by the study's sample households were for 'social reproduction' purposes, such as ceremonies (accounting for 45% of borrowings) and social obligations such as receiving guests and helping others (accounting for another 28.6%).

xxvi Recent work by economists attests to this claim. See, for example, Squires (2024), Ghosh et al. (2023), Schulz (2022), Ashraf and Bandiera (2018) and Ashraf et al. (2014).

MSME Financing in India: Driving Inclusive Growth and Economic Resilience

Ramesh Srivatsava Arunachalam

5

5.1. INTRODUCTION

Micro, Small, and Medium Enterprises (MSMEs) are vital to India's economy, acting as key drivers of entrepreneurship, employment, and economic development. They contribute significantly to both domestic and international markets, forming the backbone of the country's economic structure. This chapter provides an in-depth analysis of MSME financing in India, exploring the current financial environment, challenges, and opportunities for improvement. It also examines the sector's evolution and future outlook, including the effects of policy reforms, technological advancements, and government initiatives that are reshaping MSME financing.

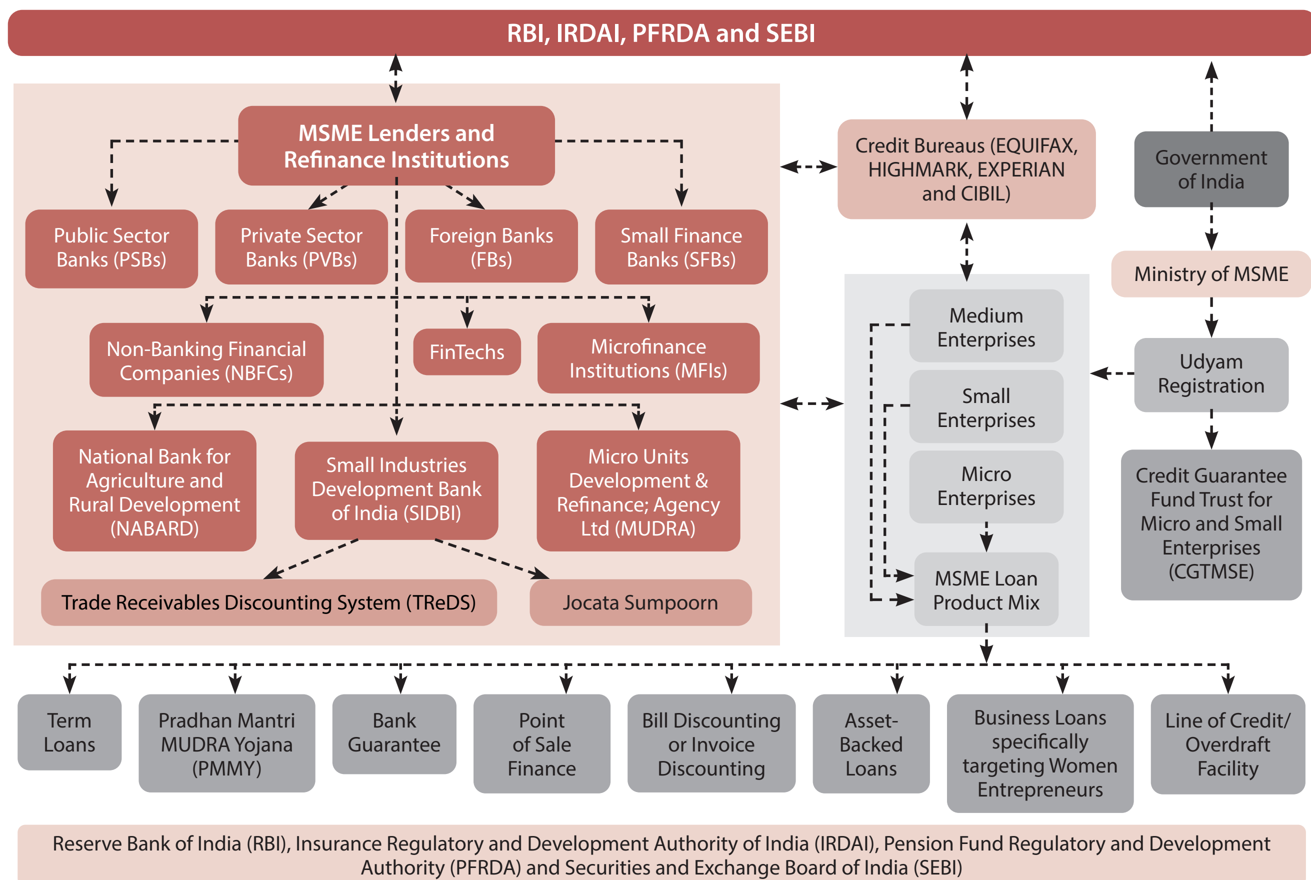


Figure 5.1. Strategic Context of MSMEs Ecosystem SME Financing – Stakeholder Diagram

As of November 9, 2024, MSMEs employ approximately 22.94 million people across India, making them the second-largest employment provider after agriculture. MSMEs help address unemployment, especially through labour-intensive industries, and contribute around 30% to India's GDP and about 45% to nation's exports. By boosting production, consumption, and investment, MSMEs are foundational to India's economic growth.

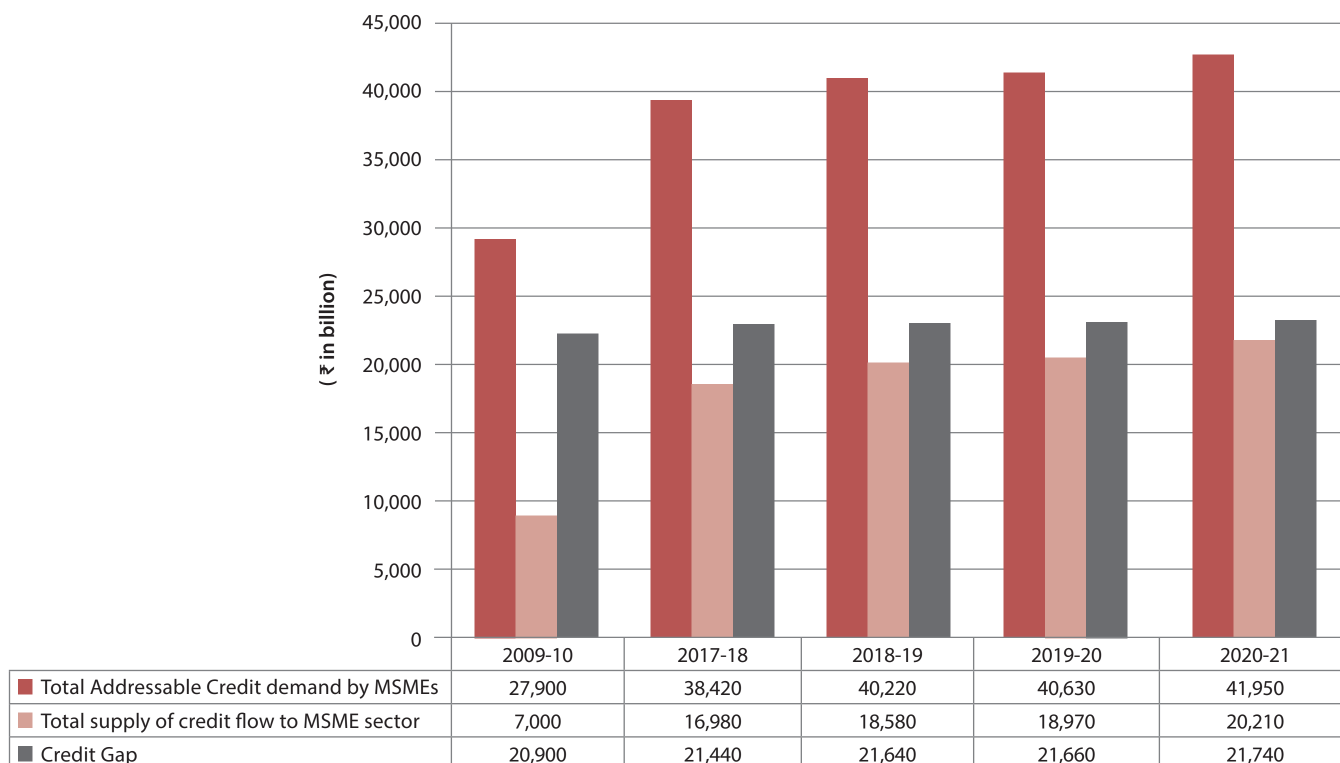
According to data from the Udyam Registration portal and Udyam Assist Platform (UAP), there are 54,464,385 registered MSMEs as of November 9, 2024. Micro-enterprises dominate, with 53,613,075 registrations (98.44%), while small enterprises account for 1.33% (7,26,169), and medium enterprises make up 0.13% (68,576). Together, these registered MSMEs employ over 22.94 million people. Of these, 30,765,201 MSMEs are registered under Udyam, providing employment to over 20.12 million individuals. The UAP, on the other hand, has formalised an additional 23,699,184 micro-enterprises, benefiting 2.81 million individuals and extending the reach of formal MSME registration.

The entire MSME ecosystem in India is diagrammed in Figure 5.1.

5.2. INDIAN MSME SECTOR CREDIT GAP

Figure 5.2. illustrates the substantial credit gap within India's MSME sector, as detailed in NITI Aayog's November 2023 report.[i] This gap underscores the severe shortfall between MSME credit demand and supply, reflecting an ongoing financial constraint that limits the sector's growth potential. The figure highlights the scale of unmet financing needs in billions of rupees, emphasising the urgent need for targeted financial interventions to bridge this gap. Addressing this deficit is crucial in enabling MSMEs to scale their operations, enhance productivity, and contribute more effectively to India's economic growth and job creation goals.

Similar estimates were reported by the Parliamentary Standing Committee on Finance—chaired by Jayant Sinha—in its April 8, 2022 report, Strengthening Credit Flows to the MSME Sector. The Committee estimated the credit gap at ₹20-25 lakh crore (₹20,000-25,000 billion), further underscoring the need for enhanced financial support to unlock the full potential of India's MSME sector.[ii]



	2009-10	2017-18	2018-19	2019-20	2020-21
Total Addressable Credit demand by MSMEs	27,900	38,420	40,220	40,630	41,950
Total supply of credit flow to MSME sector	7,000	16,980	18,580	18,970	20,210
Credit Gap	20,900	21,440	21,640	21,660	21,740

Figure 5.2. Credit Gap in MSME Sector (₹ in billion)

Source: NITI Aayog, (November, 2023), 'Impact Assessment of Pradhan Mantri Mudra Yojana (PMMY)', https://www.niti.gov.in/sites/default/files/2024-08/Assessment%20of%20PMMY_Final%20Report.pdf

Table 5.1. Credit Flow to the MSME Sector by SCBs (number of accounts in millions, the amount outstanding in ₹ billion)

Bank Groups	Items	2018-19	2019-20	2020-21	2021-22	2022-23
Public Sector Banks (PSBs)	No. of accounts	11.30 (1.76)	11.08 (-1.90)	15.08 (36.05)	15.00 (-0.7)	13.90 (-7.4)
	Amount Outstanding	8,800.33 (1.79)	8,933.15 (1.51)	9,086.59 (1.72)	9,558.60 (5.2)	10,849.53 (13.5)
Private Sector Banks (PVBs)	No. of accounts	20.53 (38.42)	27.06 (31.81)	26.68 (-1.41)	11.30 (-57.7)	7.30 (-35.2)
	Amount Outstanding	5,636.78 (37.23)	6,469.88 (14.78)	7,920.42 (22.42)	9,698.44 (22.4)	10,898.33 (12.4)
Foreign Banks (FBs)	No. of accounts	0.24 (9.14)	0.27 (14.17)	0.26 (-5.11)	0.21 (-19.0)	0.20 (-26.3)
	Amount Outstanding	669.39 (36.94)	732.79 (9.47)	832.24 (13.57)	853.52 (2.6)	853.49 (0.0)
All Scheduled Commercial Banks (SCBs)	No. of accounts	32.07 (22.61)	38.42 (19.80)	42.02 (9.37)	26.50 (-37.0)	21.30 (-19.4)
	Amount Outstanding	15,106.51 (14.08)	16,135.82 (6.81)	17,839.25 (10.56)	20,110.57 (12.7)	22,601.35 (12.4)

Note: Figures in the parentheses indicate y-o-y growth rates.
Source: RBI, 'Report on Trend and Progress of Banking in India 2022-23'.

5.3. CREDIT FLOW TO THE MSME SECTOR FROM SCHEDULED COMMERCIAL BANKS (SCBs)

From Table 5.1. it is clear that the Public Sector Banks (PSBs) have shown consistent growth in outstanding MSME loans, rising from ₹8,800.33 billion in 2018–19 to ₹10,849.53 billion in 2022–23. This growth reflects a deliberate approach of supporting financially stable MSMEs while balancing risk, as evidenced by a decrease in the number of accounts but larger loan amounts per account. Private Sector Banks (PVBs) initially experienced rapid expansion, peaking in the number of accounts in 2019–20. However, they later reduced the number of accounts significantly, shifting their focus to higher-value MSME loans. By 2022–23, the outstanding loan amounts grew by 12.4%, aligning with a targeted lending strategy aimed at more stable MSMEs. Foreign Banks (FBs) maintain a smaller but steady MSME credit portfolio, favouring a more selective approach. Although the number of accounts declined over time, outstanding loan amounts continued to grow, indicating a focus on fewer, higher-quality clients with sound creditworthiness and international prospects. Across all Scheduled Commercial Banks (SCBs), there has been substantial growth in MSME credit, characterised by a shift towards fewer accounts but larger loan amounts. This targeted approach led to a nearly 50% increase in outstanding loans over five years, reflecting a sector-wide focus on financial stability and efficient resource allocation.

Furthermore, annual growth rates reveal the SCBs' adaptability to changing economic conditions. PSBs maintained moderate, steady growth, while PVBs exhibited volatility, aligning their lending strategies to focus on quality over quantity. FBs took a steady approach, prioritising client quality and contributed to an inclusive financing environment with an emphasis on stable MSMEs. Each category of SCBs has adapted its MSME lending strategy to meet sector demands: PSBs increased existing loan lines, PVBs focused on high-quality clients, and FBs retained a niche presence. Together, these banks have strengthened MSME financial inclusion, enabling resilience and creating employment opportunities.

Interestingly, the number of MSME accounts with SCBs peaked in 2020–21 but decreased thereafter, with SCBs shifting focus to fewer, higher-value accounts. This approach likely reflects SCBs' response to the impacts of the pandemic, tightening credit terms to mitigate risks in MSME portfolios. PSBs maintained a relatively stable MSME account base, with minor fluctuations. This approach underscores their role in promoting financial inclusion while managing risks conservatively, providing a stable credit flow even as private banks

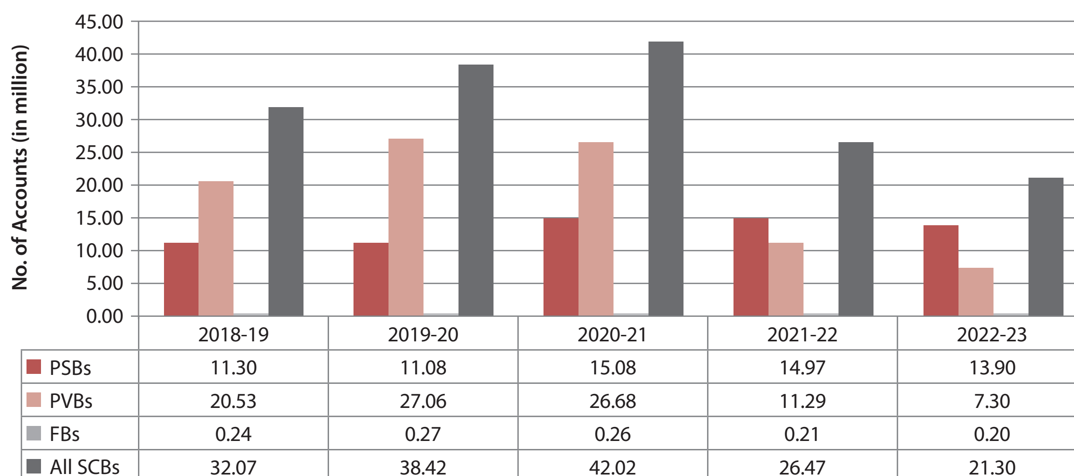
shifted their strategies. PVBs rapidly expanded initially but subsequently reduced the number of accounts sharply, emphasising fewer, higher-value loans. This shift aligns with a strategic focus on minimising risk exposure while optimising returns from established, resilient MSMEs. FBs have kept a limited but consistent presence in MSME lending, reducing the number of accounts while maintaining credit amounts. This strategy reflects a focus on stable, high-quality clients, with FBs playing a specialised role in MSME financing. The decrease in MSME accounts, particularly within private banks, may limit access for newer MSMEs facing stricter credit criteria. However, PSBs, however, maintained stability, balancing the need for inclusive growth while managing financial risks.

Similarly, outstanding MSME credit across SCBs have steadily increased, rising from ₹15,106.51 billion in 2018–19 to ₹22,601.35 billion in 2022–23. This growth underlines SCBs' ongoing commitment to supporting the MSME sector, with credit expansion playing a crucial role in the recovery and resilience of MSMEs post-pandemic. PSBs have consistently increased MSME lending, contributing to economic development even amidst market fluctuations. With a strategic focus on financial inclusion, PSBs have reinforced their role in providing dependable credit to MSMEs. PVBs nearly doubled their MSME credit portfolio over five years, emphasising rapid expansion. This growth reflects the private sector's strategy to capture the MSME market, fuelled by advanced risk assessments and credit-scoring tools. Foreign Banks expanded MSME credit modestly, maintaining consistent exposure to financially stable clients. This cautious growth aligns with FBs' strategic preference for quality over quantity, targeting export-oriented MSMEs with established financial backgrounds. The growth of MSME credit within SCBs showcases various strategies. PSBs focus on inclusion, PVBs on efficient, competitive growth, and FBs on stability. Together, these approaches build a resilient ecosystem supporting diverse MSME needs.

Overall, PSB's share of MSME accounts grew significantly, demonstrating their commitment to financial inclusion and their response to government initiatives. This trend positions PSBs as key supporters of small businesses that may not qualify for lending from private or foreign banks. In contrast, PVBs reduced their share of MSME accounts, focusing on established, high-value clients. This strategic reallocation likely aims to minimise exposure to smaller, riskier MSMEs, aligning PVBs' portfolios with their profitability goals. Foreign Banks maintained minimal presence in MSME lending, concentrating on select, low-risk clients. This approach aligns with FBs' risk management practices, catering to financially stable MSMEs in need of specialised credit solutions. With PSBs capturing a larger share of MSME accounts, their role in supporting financial stability and inclusion is further strengthened. This shift highlights PSBs as a key source of credit for MSMEs, particularly smaller enterprises lacking access to private or foreign bank lending.

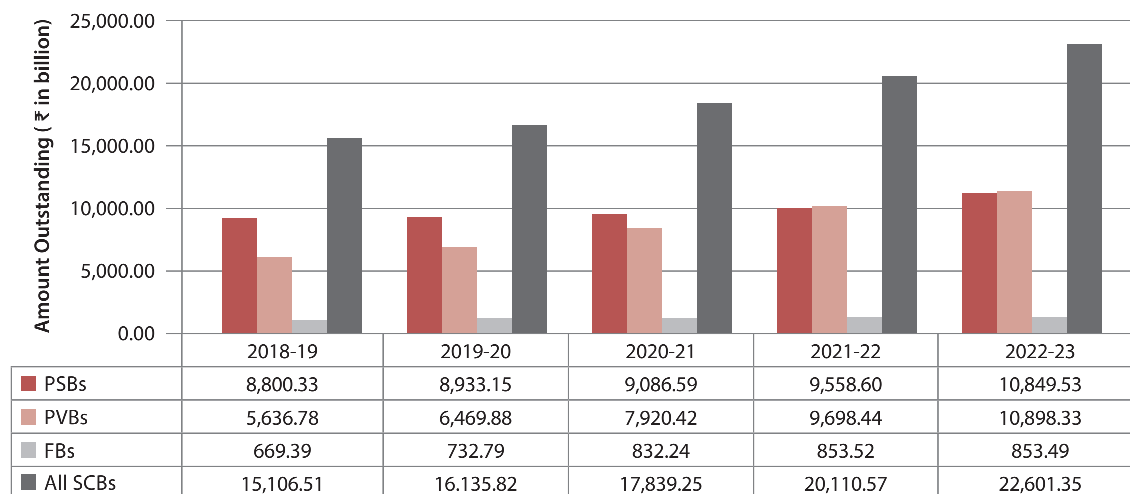
A deeper analysis suggests that India's MSME financial landscape is evolving, shaped by the changing roles of PSBs, PVBs, and FBs. From FY 2018–19 to FY 2022–23, data reveals a clear shift in the distribution of MSME credit among these banking segments. PSBs, which initially held the majority of MSME credit, experienced a gradual reduction in their share, ultimately converging with and being overtaken by PVBs by FY 2022–23. This shift underscores an increasing focus by PVBs on MSME lending, driven by their strategic emphasis on medium-sized enterprises and the use of advanced risk assessment technologies. While PSBs continue to serve as the backbone for MSME credit, offering broader reach and accessible funding, PVBs have moved towards providing larger loans to fewer clients. This trend reflects not only PVBs' competitive drive but also their preference for clients with established credit histories and sizable loan requirements. Meanwhile, FBs have maintained a smaller yet consistent role, catering to specific MSME segments with specialised needs, such as export-oriented businesses or those with international operations.

The financing approaches of PSBs and PVBs highlight the key challenges facing both formal and informal MSMEs. PSBs, with their focus on financial inclusion, support smaller, informal MSMEs that lack documentation or collateral, though this increases their risk and dependence on government support. In contrast, PVBs target well-established MSMEs, leveraging technology for efficiency and profitability but often excluding smaller MSMEs that cannot meet stringent requirements. These informal MSMEs are often forced to turn to costly informal credit sources, with interest rates of 40–60%, restricting their growth. This divide reveals the urgent need for balanced credit solutions that combine inclusivity with effective risk management, addressing the diverse needs of the MSME sector.



	2018-19	2019-20	2020-21	2021-22	2022-23
PSBs	11.30	11.08	15.08	14.97	13.90
PVBs	20.53	27.06	26.68	11.29	7.30
FBs	0.24	0.27	0.26	0.21	0.20
All SCBs	32.07	38.42	42.02	26.47	21.30

Figure 5.3. Credit Flow to the MSME Sector by SCBs-Number of Accounts (in millions)
Source: RBI, 'Report on Trend and Progress of Banking in India 2022-23'.



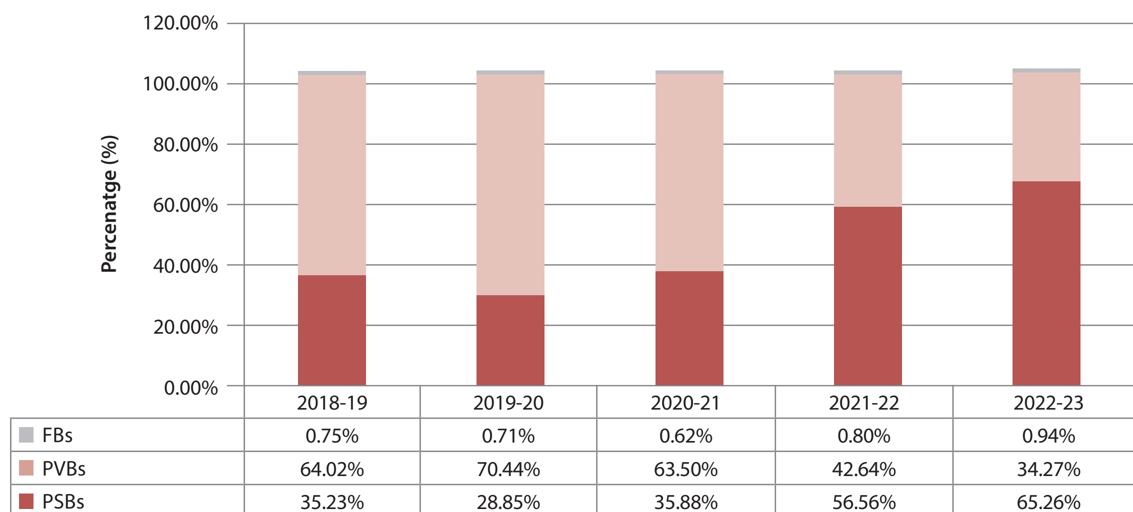
	2018-19	2019-20	2020-21	2021-22	2022-23
PSBs	8,800.33	8,933.15	9,086.59	9,558.60	10,849.53
PVBs	5,636.78	6,469.88	7,920.42	9,698.44	10,898.33
FBs	669.39	732.79	832.24	853.52	853.49
All SCBs	15,106.51	16.135.82	17,839.25	20,110.57	22,601.35

Figure 5.4. Credit Flow to the MSME Sector by SCBs-Amount Outstanding (₹ in billion)
Source: RBI, 'Report on Trend and Progress of Banking in India 2022–23'.

Figures 5.3. and 5.4. from the Reserve Bank of India's (RBI's) *Report on Trend and Progress of Banking in India 2022–23* illustrate distinct patterns in MSME lending across different types of banks. PSBs continue to maintain high account volumes but have seen a decline in their share of MSME lending. In contrast, PVBs are focusing on larger loans, targeting fewer but more financially established MSMEs. FBs maintain a minimal presence in MSME lending, targeting select accounts, with loan volumes gradually increasing over time. This distribution underscores the unique roles played by each banking segment: PSBs provide widespread access to credit, PVBs concentrate on larger, profitable loans, and FBs cater to niche segments, highlighting a balance between inclusivity and profitability. The growing competition between PSBs and PVBs in MSME lending reflects shifting priorities, as PVBs gain market share, reshaping the lending landscape. PSBs promote inclusivity but bear the burden of sustainability, while PVBs pursue risk-managed growth. This credit concentration within PVBs, though efficient, may limit access for smaller MSMEs who rely on PSBs, potentially creating a financing gap that risks sector stability. Digital transformation offers a promising solution to these challenges, as banks adopt technology for streamlined credit assessment and tailored MSME products. PVBs, in particular, are leading the way in digital platforms and data-driven risk management. Digital lending

has the potential to enhance credit access for underserved MSMEs, especially in Tier 3 and Tier 4 cities. However, strong regulatory frameworks are essential to ensure that these technologies provide fair access to credit. Collaboration among banks, regulatory bodies, and MSME associations is key to addressing credit gaps, adapting policies, and building a more inclusive MSME financing ecosystem. Public-private partnerships and policy incentives are critical in promoting flexible lending models, creating an equitable balance between inclusivity and efficiency.

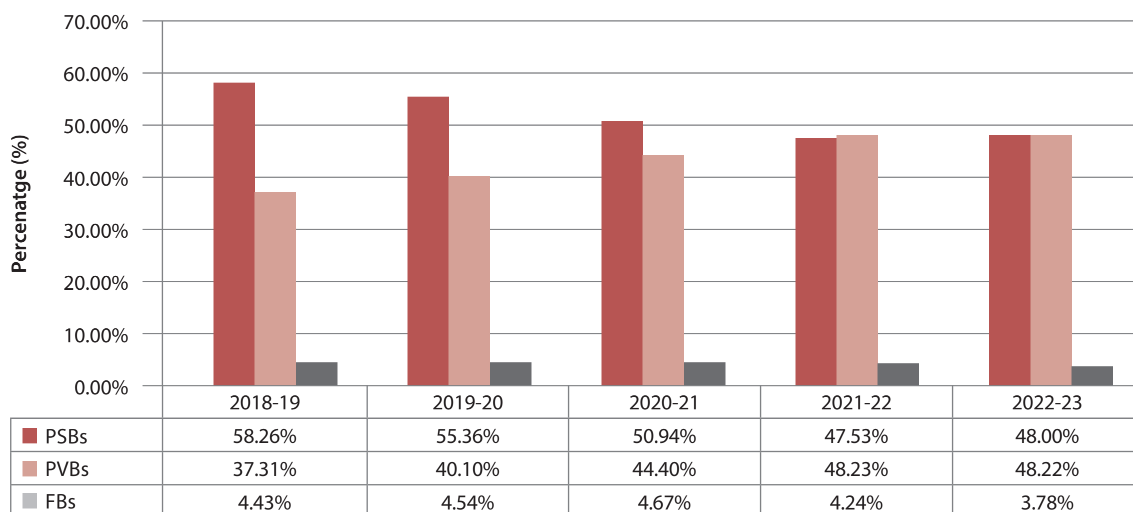
Figures 5.5. and 5.6. reveal the evolving dynamics of MSME financing. Despite a decrease in MSME loan volumes, PSBs still hold a large share of outstanding loans. Meanwhile, PVBs are expanding their share of outstanding loan amounts, increasingly focusing on medium-sized MSMEs with larger credit requirements. This trend indicates a strategic shift within PVBs towards more established MSMEs, raising concerns about equitable credit access for smaller MSMEs that may be overshadowed by larger, more profitable clients.



	2018-19	2019-20	2020-21	2021-22	2022-23
FBs	0.75%	0.71%	0.62%	0.80%	0.94%
PVBs	64.02%	70.44%	63.50%	42.64%	34.27%
PSBs	35.23%	28.85%	35.88%	56.56%	65.26%

Figure 5.5. SCB Lending to MSMEs in India across Years – No. of Accounts (all figures are year-wise percentages)

Source: RBI, 'Report on Trend and Progress of Banking in India 2022-23'.



	2018-19	2019-20	2020-21	2021-22	2022-23
PSBs	58.26%	55.36%	50.94%	47.53%	48.00%
PVBs	37.31%	40.10%	44.40%	48.23%	48.22%
FBs	4.43%	4.54%	4.67%	4.24%	3.78%

Figure 5.6. SCB lending to MSMEs in India across Years – Amount Outstanding (all figures are year-wise percentages)

Source: RBI, 'Report on Trend and Progress of Banking in India 2022-23'.

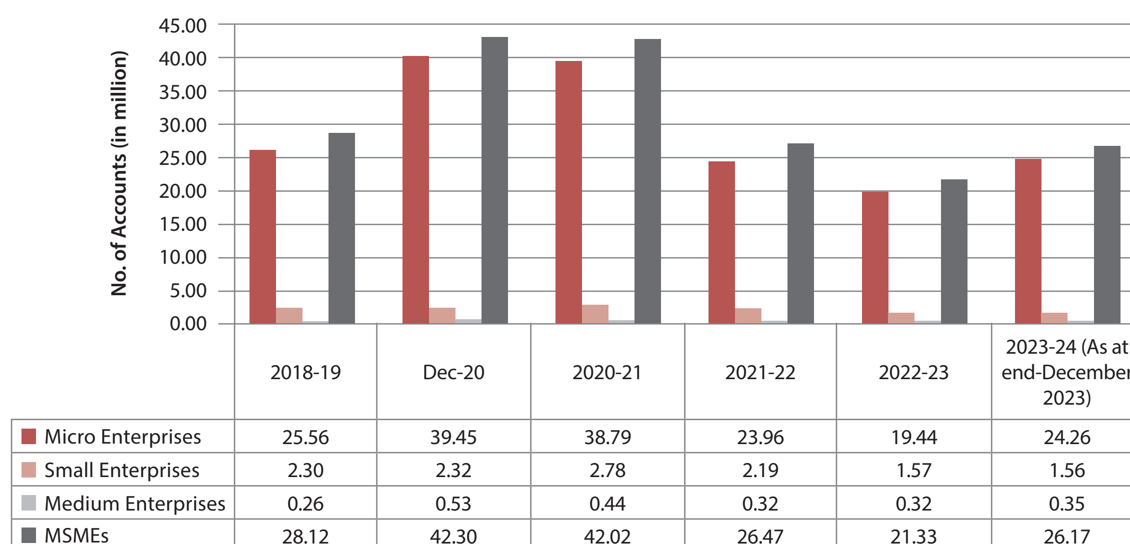
These shifts highlight the need for a balanced MSME financing strategy that bridges the divide between formal and informal MSMEs. PSBs have a broad reach, promoting financial inclusion, while PVBs focus on targeted, risk-managed lending that enhances economic resilience. However, this segmentation risks leaving smaller and informal MSMEs underfunded. A cohesive approach, leveraging digital tools, sustainable lending, and balanced credit allocation, is essential to unlocking the sector's full economic potential.

These lending patterns suggest that smaller MSMEs tend to gravitate towards PSBs for moderate loan sizes, while larger MSMEs increasingly rely on PVBs for substantial funding. A deeper understanding of these trends across MSME categories underscores the need for a well-rounded financing ecosystem that meets the diverse needs of all MSMEs.

5.4. BANK CREDIT TO MSME SEGMENTS

Let us look at the major trends from the graphs (Figures 5.7. and 5.8.) below. From FY 2018–19 to December 2023,[iii] outstanding credit for Micro Enterprises nearly doubled, rising from ₹6,591.02 billion to ₹12,600 billion. Despite fluctuations in the number of accounts, this increase in credit indicates a strategy prioritising substantial support for micro-level businesses, which are essential to local economic growth and job creation. This trend aligns with initiatives like the Pradhan Mantri Mudra Yojana (PMMY), showing a strong focus on grassroots financial inclusion. Likewise, credit outstanding to Small Enterprises grew from ₹6,380.31 billion in FY 2018–19 to ₹8,300 billion by December 2023, despite a decline in account numbers. This consolidation points to a risk-managed approach by banks, providing higher credit per account to more stable small enterprises, a strategy likely aimed at enhancing resilience within this vital MSME segment. Furthermore, Medium Enterprises saw a 153% increase in outstanding credit, rising from ₹1,974.19 billion in FY 2018–19 to ₹5,000 billion by December 2023. With account numbers holding steady, this focus on larger loans suggests that banks view medium enterprises as critical drivers of economic expansion and potential candidates for scalable growth.

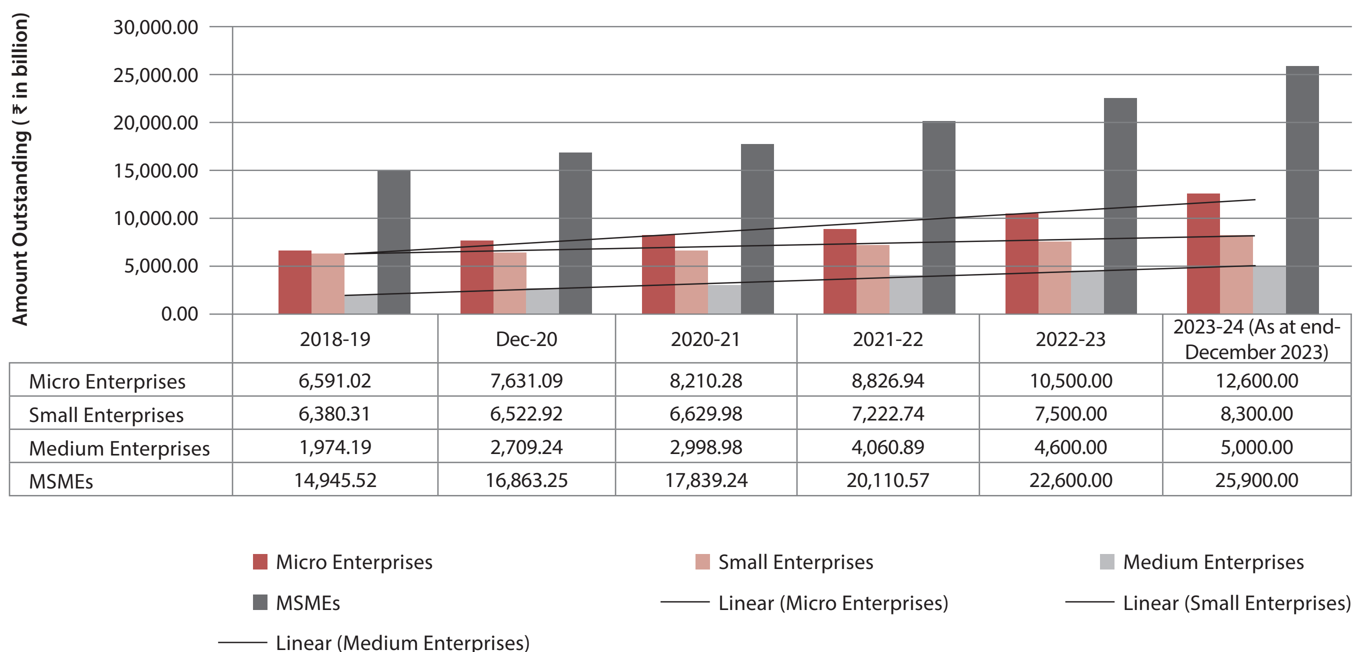
The pandemic undoubtedly led to a surge in emergency credit needs for Micro Enterprises, with accounts peaking at 39.45 million in December 2020 before contracting significantly. This fluctuation not only underscores the MSME sector's vulnerability to economic shocks but also its adaptability, emphasising the need for responsive financial support during crises. Total MSME credit rose from ₹14,945.52 billion[iv] in FY 2018–19 to ₹25,900 billion by December 2023. This steady growth, despite account volatility, signals an increasing focus on high-value MSME support, aligning with financial inclusion goals by emphasising scalable, impactful MSMEs. At the same time, MSME account numbers decreased from 42.30 million in



	2018-19	Dec-20	2020-21	2021-22	2022-23	2023-24 (As at end-December 2023)
Micro Enterprises	25.56	39.45	38.79	23.96	19.44	24.26
Small Enterprises	2.30	2.32	2.78	2.19	1.57	1.56
Medium Enterprises	0.26	0.53	0.44	0.32	0.32	0.35
MSMEs	28.12	42.30	42.02	26.47	21.33	26.17

Figure 5.7. Bank Credit to MSME Segments for Number of Accounts (in millions)

Source: RBI, 'Annual Reports 2019-20, 2020-21, 2021-22, 2022-23 and 2023-24'.



	2018-19	Dec-20	2020-21	2021-22	2022-23	2023-24 (As at end-December 2023)
Micro Enterprises	6,591.02	7,631.09	8,210.28	8,826.94	10,500.00	12,600.00
Small Enterprises	6,380.31	6,522.92	6,629.98	7,222.74	7,500.00	8,300.00
Medium Enterprises	1,974.19	2,709.24	2,998.98	4,060.89	4,600.00	5,000.00
MSMEs	14,945.52	16,863.25	17,839.24	20,110.57	22,600.00	25,900.00

Figure 5.8. Bank Credit to MSME Segments for Amount Outstanding (₹ in billion)
Source: RBI, 'Annual Reports 2019–20, 2020–21, 2021–22, 2022–23 and 2023–24'.

December 2020 to 21.33 million in FY 2022–23, then partially rebounded to 26.17 million. The trend towards fewer but larger loans suggests banks are focusing on creditworthy MSMEs, aiming to balance financial outreach with portfolio stability. The rising credit per MSME account across categories indicates greater access to capital, likely supported by government-backed credit guarantee programmes. This deepened lending reflects banks' commitment to MSME growth, particularly for enterprises investing in technology and productivity improvements. Indeed, the observed lending trends underscore the need for continued policy support to expand MSME credit access, especially for smaller enterprises facing persistent credit gaps. Banks and policymakers could consider tailored financial products to meet diverse MSME needs, ensuring sustained support for micro and small businesses, which are crucial to the economy.

The data on bank credit to MSMEs from 2018 through December 2023 reveals a nuanced story of growth, resilience, and complexity across MSMEs. Outstanding loan amounts across categories have shown an upward trend, indicating growing demand for credit as MSMEs seek capital to fuel expansion. However, this upward trajectory is accompanied by fluctuations in the number of loan accounts, especially in the micro-enterprise category, which saw a significant peak followed by a decline. This pattern suggests an increase in the average loan size per account, reflecting a strategic shift by banks towards fewer but higher-value loans. For micro-enterprises, in particular, this trend signals potential challenges, as credit becomes more concentrated amongst a select group, limiting broader access for newer or smaller players.

The roller-coaster trajectory of micro-enterprises is particularly striking. Account numbers surged to 39.45 million by December 2020, likely in response to increased credit demand during the pandemic. However, by December 2023, the number of accounts had sharply dropped to 19.36 million. Despite this decline in account numbers, the total credit extended to micro-enterprises continued to rise, suggesting that while fewer micro-enterprises received loans, those that did secured larger amounts. This increase in credit, paired with the drop in account numbers, points to a complex landscape where access to credit may be becoming more exclusive. The trend could reflect regulatory hurdles or a shift in banks' risk assessment models, which prioritise stability and financial strength, leaving some smaller enterprises struggling to meet the evolving requirements.

The story for small enterprises is similarly compelling. While account numbers fluctuated, the outstanding credit for this segment grew consistently, underscoring their expanding capital

requirements. This dual trend reflects the ambitions of small enterprises to upscale, invest in technology, and capture larger market shares. However, the decline in account numbers after 2020 also signals the challenges they face in accessing formal credit. Small enterprises may be grappling with heightened regulatory demands and tighter lending criteria, which favour established businesses with stronger credit profiles. This selective approach by banks emphasises stability but also highlights the difficulties smaller players face in navigating a more regulated lending environment.

Medium enterprises, positioned between small-scale firms and larger corporations, show an upward trend in credit with a relatively stable number of accounts. The outstanding credit for medium enterprises more than doubled over this period, reflecting a strategic pivot by banks towards larger loans in this category. The reduction in account numbers, alongside increased credit volumes, suggests that medium enterprises are consolidating, with banks viewing them as critical economic drivers. This approach aligns with banks' focus on risk management and scalable growth, as medium enterprises are often seen as safer investments due to their established operations and growth potential. However, the decline in account numbers could also indicate that only a select group of medium enterprises have successfully navigated recent regulatory changes, benefiting from more significant capital while leaving others behind.

The introduction of the Udyam Registration marked a paradigm shift in MSME classification, aiming to streamline the registration process and establish a standard framework for the sector. While the Udyam framework promises long-term benefits by simplifying the credit process, it also presented short-term challenges, evident in the contraction of registered MSME accounts. The stricter documentation and compliance requirements for the new framework have posed barriers for some enterprises, particularly smaller and informal ones, underscoring the sector's vulnerability during periods of regulatory adjustment. For many MSMEs, especially micro and small enterprises, the transition to Udyam has highlighted the need for adaptability and alignment with formal financial requirements.

The overarching narrative from 2018 to 2023 is one of resilience juxtaposed with challenges. MSMEs have shown an unwavering drive to expand, adapt, and innovate. However, these ambitions are tempered by the realities of a transforming regulatory and lending landscape, which favours stability and risk-managed growth. The rise in average loan sizes per account reflects a focus on capacity building and scalable investments, particularly for small and medium enterprises. Yet, this shift towards fewer but larger loans may limit access to capital for smaller MSMEs, presenting potential barriers to financial inclusion that policymakers and financial institutions must address.

The impact of the pandemic on MSMEs is particularly evident in the micro-enterprise category, which saw a dramatic increase in account numbers in 2020, likely driven by emergency credit needs. This spike highlights the sector's vulnerability to economic disruptions and the importance of flexible financial support during crises. Post-pandemic, however, banks have adopted a more cautious, selective approach to lending, with an emphasis on creditworthy MSMEs to mitigate risks. This transition underscores the importance of financial resilience within the MSME sector, where stable credit access credit is essential for weathering economic uncertainties.

Despite these complexities, the steady rise in total MSME credit—reaching ₹25,900 billion by December 2023—reflects the enduring commitment of banks to support the sector. This growth aligns with national financial inclusion goals, emphasising high-impact MSMEs that contribute significantly to India's economy. The increase in credit per account suggests that banks are prioritising MSMEs with demonstrated growth potential, particularly those willing to invest in technology and productivity enhancements. However, ensuring that this support extends across all MSME categories remains crucial for fostering a balanced and inclusive financial landscape.

The lending trends also highlight the evolving needs of MSMEs, as the sector increasingly requires tailored financial products that align with their growth trajectories. The concentration of credit within a limited number of accounts suggests that larger MSMEs with scalable operations are better positioned to benefit. However, smaller enterprises—especially those at the micro level—may require customised solutions that address their unique challenges. Policymakers and banks alike could explore innovative financial models and guarantee schemes to provide equitable support, ensuring that MSMEs of all sizes have access to the resources necessary to thrive in an evolving economic landscape. Ultimately, these credit patterns underscore the dual narrative of promise and challenge within the MSME sector. While MSMEs continue to demonstrate growth and resilience, their journey is marked by hurdles

in adaptation and the need for structural support. For India's economy, which relies heavily on the contributions of MSMEs, recognising these trends and addressing emerging barriers is essential. As MSMEs continue to expand and innovate, ensuring their access to stable and inclusive financing will be central to sustaining their role as a dynamic pillar of India's economic fabric.

5.5. MSME ASSET QUALITY ANALYSIS

Table 5.2. below presents a detailed compilation of the MSME asset quality profile from March 2021 to September 2023.

Table 5.2. MSME Asset Quality Profile of SCBs (Percentages)

Bank Groups	PSBs + PVBs				
	0 Days Past Due	Special Mention Account (SMA) 0	SMA 1	SMA 2	GNPA
March 2021	74.0	7.3	5.7	2.2	**10.8**
June 2021	72.4	8.6	3.8	3.4	**11.9**
September 2021	76.3	6.6	2.6	3.1	**11.3**
December 2021	75.4	8.8	3.1	2.3	**10.4**
March 2022	79.7	6.4	3.5	1.1	**9.3**
June 2022	79.6	6.4	3.5	2.2	**9.8**
September 2022	81.6	6.7	1.9	2.1	**7.7**
December 2022	82.2	6.3	2.0	2.0	**7.4**
March 2023	84.6	5.1	2.6	0.9	**6.8**
September 2023	–	–	–	1.7	**4.7**

Source: RBI, 'Financial Stability Report (Issue No. 25) June 2022, (Issue No. 27) June 2023 and (Issue No. 28) December 2023'.

The MSME asset quality profile from March 2021 to September 2023 reflects significant improvements in resilience and financial health among MSMEs, as shown in Table 5.2. and Figures 5.9. and 5.10. During this period, performing loans (0 Days Past Due) increased from 74.0% to 84.6% by March 2023, indicating better credit discipline and stronger borrower reliability. This trend underscores the success of banks in targeting financially stable MSMEs, contributing to a stable portfolio and sustainable sector growth. Notable improvements were observed in early warning categories, with SMA 0 (1–30 days overdue) peaking at 8.8% in December 2021 due to pandemic-related pressures but reducing to 5.1% by March 2023. Similarly, SMA 1 (31–60 days overdue) and SMA 2 (61–90 days overdue) levels dropped significantly, showing MSMEs' increased ability to manage short-term financial strains. The reduction in these categories highlights effective risk management practices, allowing banks to proactively mitigate potential defaults. The Gross Non-Performing Assets (GNPA) rate, a key indicator of defaults, decreased sharply from 10.8% in March 2021 to 4.7% by September 2023, reflecting a 6.1% improvement. This sustained decline demonstrates the sector's recovery, resilience, and ability to meet financial obligations. Targeted lending initiatives, data-driven assessments, and regulatory measures like the Emergency Credit Line Guarantee Scheme (ECLGS) have contributed to this positive trajectory.

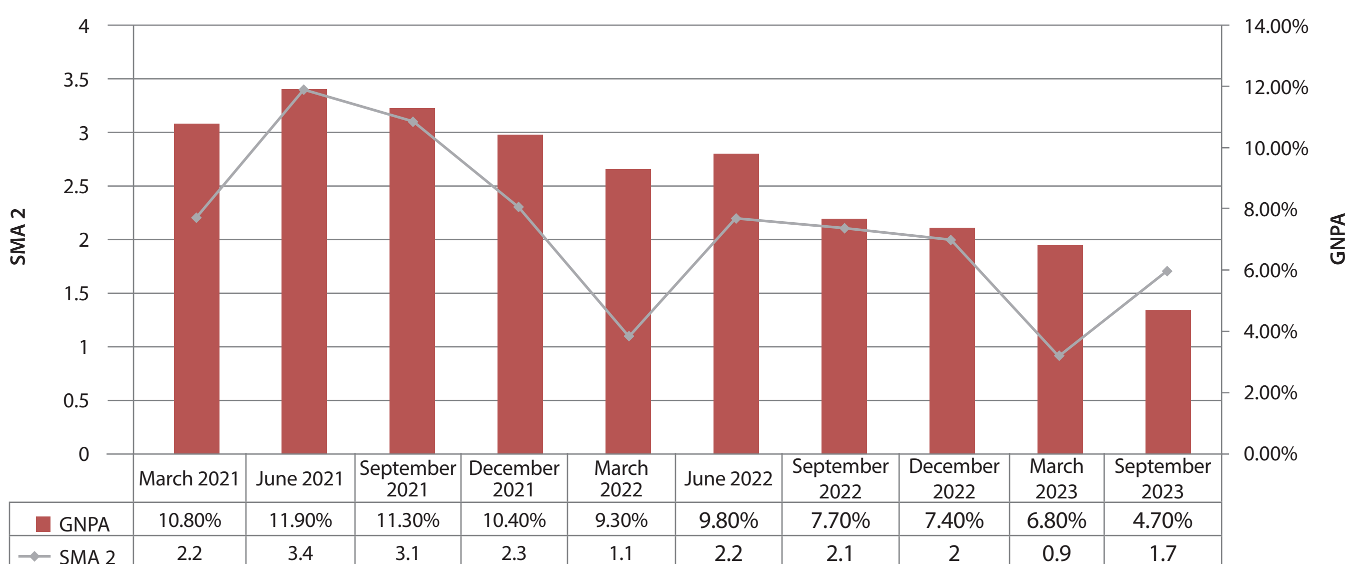
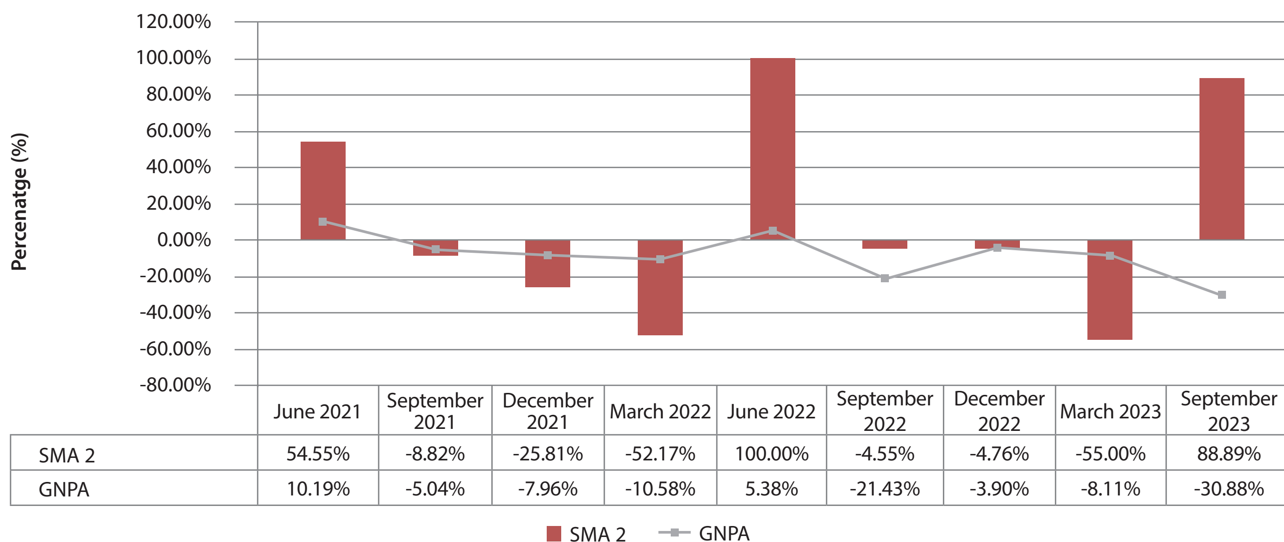


Figure 5.9. MSME Asset Quality Profile, March 2021 to September 2023

Source: RBI, 'Financial Stability Report (Issue No. 25) June 2022, (Issue No. 27) June 2023 and (Issue No. 28) December 2023'.



	June 2021	September 2021	December 2021	March 2022	June 2022	September 2022	December 2022	March 2023	September 2023
SMA 2	54.55%	-8.82%	-25.81%	-52.17%	100.00%	-4.55%	-4.76%	-55.00%	88.89%
GNPA	10.19%	-5.04%	-7.96%	-10.58%	5.38%	-21.43%	-3.90%	-8.11%	-30.88%

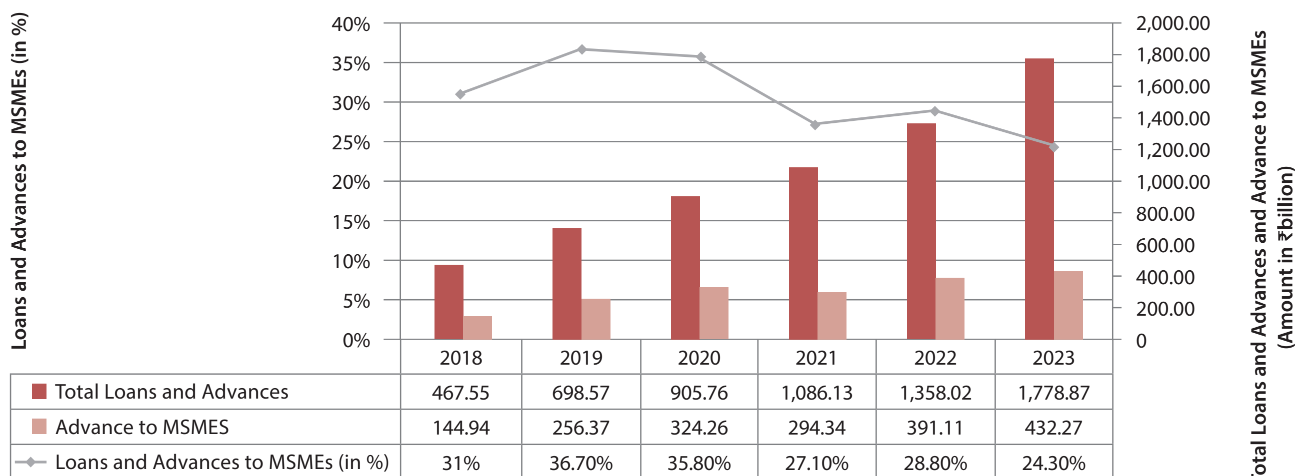
Figure 5.10. MSME Asset Quality Profile, SMA2 and GNPA, % Change Across Quarters

Further support measures, such as the Udyam Registration system, are helping formalise MSME access to structured financial resources, reducing credit risks and stabilising the sector. Improved asset quality allows MSMEs to pursue growth initiatives, invest in technology, and contribute significantly to India's regional development and self-reliance goals. While these trends are promising, ongoing vigilance is essential for both banks and MSMEs. Banks must continue to uphold rigorous risk management to maintain momentum, while MSMEs must focus on strategic financial planning to navigate future economic uncertainties effectively.

In summary, the MSME asset quality profile from March 2021 to September 2023 highlights resilience, adaptation, and recovery within the sector. The improvements in performing loans, reductions in early arrears, and the substantial GNPA decrease showcase a strengthened sector that supports India's broader economic stability and growth goals. This positive trajectory positions MSMEs as pivotal contributors to financial inclusion and long-term economic development.

5.6. MSME FINANCING BY SFBS

The MSME share of SFB advances (Figure 5.11.) declined from 36.7% in 2019 to 24.3% in 2023, despite an increase in absolute lending volumes. This shift suggests that SFBs are diversifying their portfolios to



	2018	2019	2020	2021	2022	2023
Total Loans and Advances	467.55	698.57	905.76	1,086.13	1,358.02	1,778.87
Advance to MSMES	144.94	256.37	324.26	294.34	391.11	432.27
Loans and Advances to MSMEs (in %)	31%	36.70%	35.80%	27.10%	28.80%	24.30%

Figure 5.11. Loans and Advances to MSMEs (all figures are % of total SFB advance) and Total Loans and Advances and Advance to MSMEs by SFBs (in ₹billion)

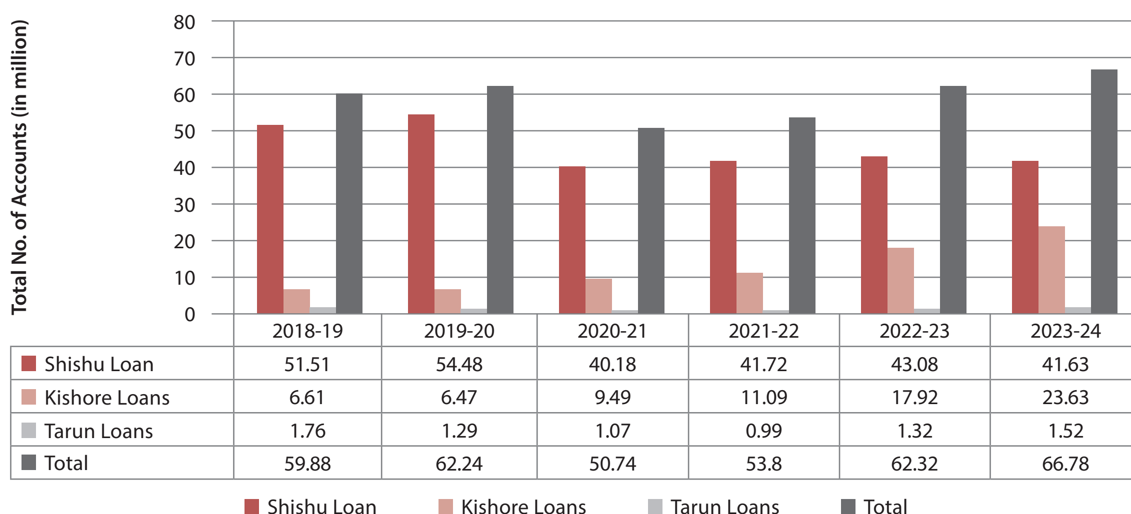
Source: RBI, 'Report on Trend and Progress of Banking in India 2018-19, 2019-20, 2020-21, 2021-22 and 2022-23'.

manage risk while continuing to provide significant lending to MSMEs. Total loans from SFBs grew fourfold, from ₹467.55 billion in 2018 to ₹1,778.87 billion in 2023,[v] underscoring their role in bridging finance gaps, especially in underserved areas, while maintaining a broad lending approach. The volatility in the MSME lending share points to SFBs' adaptive risk management, likely in response to economic disruptions such as the pandemic. SFBs have adjusted their portfolios to mitigate sector-specific challenges while maintaining a stable credit flow to MSMEs. Despite the decline in the percentage allocation, SFBs' absolute MSME lending rose annually, reinforcing their commitment to supporting the sector's financial inclusion goals. This consistent increase reflects SFBs' alignment with national objectives to strengthen the MSME ecosystem. The reduced share of MSME advances suggests that further policy incentives could encourage SFBs to prioritise this sector. Measures such as enhanced credit guarantees or sector-specific support could help SFBs expand MSME lending in a balanced manner.

MSME lending by SFBs grew from ₹144.94 billion in 2018 to ₹432.27 billion in 2023, demonstrating resilience despite the challenges faced by the sector. This growth highlights SFBs' crucial role in supporting MSMEs, even under conditions that typically require rigorous monitoring and management. The diversification of SFB loan portfolios indicates a strategic move towards long-term stability. While MSME support remains a priority, the allocation of more loans to non-MSME segments reflects an effort to mitigate risks associated with the MSME sector. The trend in SFBs' MSME lending reflects a balance between growth and stability, enabling them to support MSMEs without compromising portfolio health. This recalibrated approach signals a mature strategy that promotes inclusive finance while protecting SFBs' financial sustainability. To maintain focus on MSMEs, policymakers could consider introducing targeted incentives that encourage SFBs to prioritise MSME lending without overextending their risk exposure. Such measures would reinforce MSMEs' role in driving economic resilience and growth. The growth in absolute MSME loan values highlights SFBs' ongoing commitment to inclusive finance. MSME support remains a core component of SFBs' long-term strategy, especially in regions where MSMEs play a foundational role in local economies.

5.7. PRADHAN MANTRI MUDRA YOJANA (PMMY) AND MUDRA

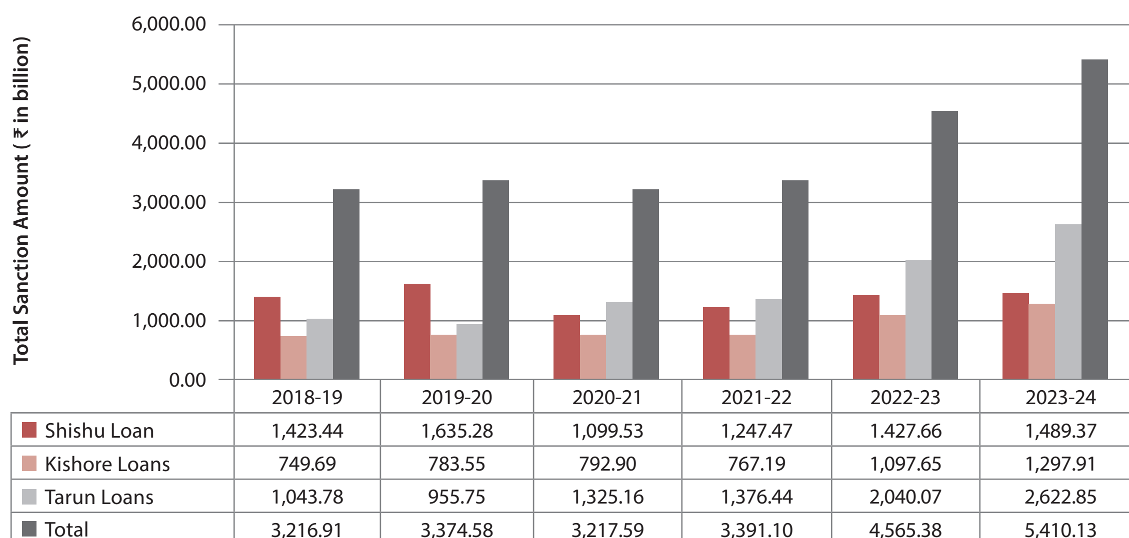
The PMMY serves as a foundational pillar for MSME financing in India, with a specific focus on enhancing access to credit for micro and small enterprises. Implemented under the guidance of the Micro Units Development & Refinance Agency Ltd. (MUDRA), the programme addresses critical financing gaps through a tiered loan structure—Shishu, Kishore, and Tarun—each designed to support enterprises at different stages of growth. This analysis explores the impact of PMMY from 2018 to 2024 (Figures 5.12., 5.13. and 5.14.), evaluating trends across loan categories, borrower demographics, and institutional contributions to understand the programme's effectiveness in promoting financial inclusion and driving economic growth.



	2018-19	2019-20	2020-21	2021-22	2022-23	2023-24
Shishu Loan	51.51	54.48	40.18	41.72	43.08	41.63
Kishore Loans	6.61	6.47	9.49	11.09	17.92	23.63
Tarun Loans	1.76	1.29	1.07	0.99	1.32	1.52
Total	59.88	62.24	50.74	53.8	62.32	66.78

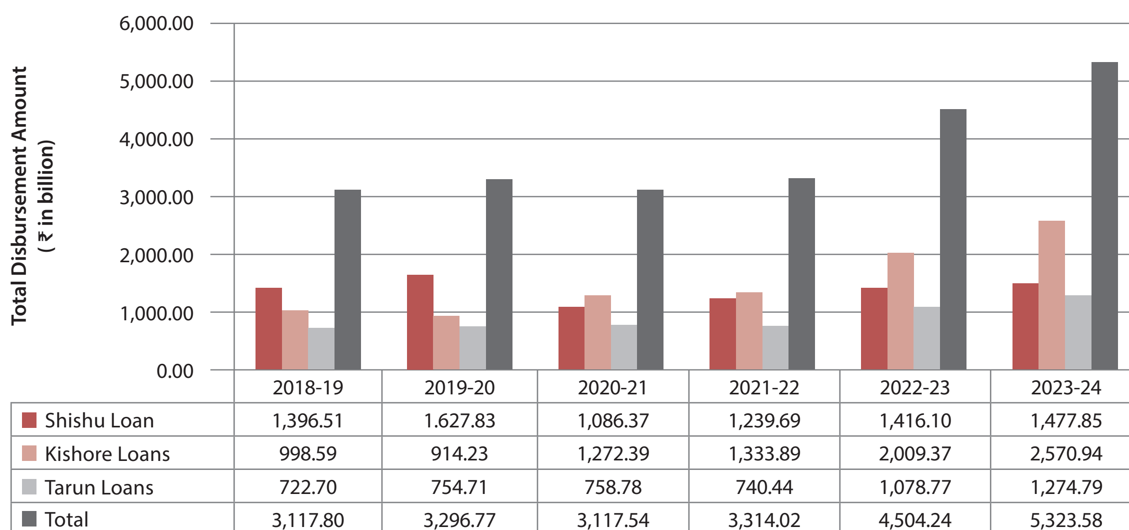
Figure 5.12. PMMY Total Number of Accounts from 2018–19 to 2023–24

Source: 'PMMY Bank Wise Performance 2018-19, 2019-20, 2020-21, 2021-22, 2022-23 and 2023-24'.



	2018-19	2019-20	2020-21	2021-22	2022-23	2023-24
Shishu Loan	1,423.44	1,635.28	1,099.53	1,247.47	1.427.66	1,489.37
Kishore Loans	749.69	783.55	792.90	767.19	1,097.65	1,297.91
Tarun Loans	1,043.78	955.75	1,325.16	1,376.44	2,040.07	2,622.85
Total	3,216.91	3,374.58	3,217.59	3,391.10	4,565.38	5,410.13

Figure 5.13. PMMY Total Sanction Amount (₹ in billion) from 2018-19 to 2023-24
Source: 'PMMY Bank Wise Performance 2018-19, 2019-20, 2020-21, 2021-22, 2022-23 and 2023-24'.



	2018-19	2019-20	2020-21	2021-22	2022-23	2023-24
Shishu Loan	1,396.51	1.627.83	1,086.37	1,239.69	1,416.10	1,477.85
Kishore Loans	998.59	914.23	1,272.39	1,333.89	2,009.37	2,570.94
Tarun Loans	722.70	754.71	758.78	740.44	1,078.77	1,274.79
Total	3,117.80	3,296.77	3,117.54	3,314.02	4,504.24	5,323.58

Figure 5.14. PMMY Total Disbursement Amount (₹ in billion) from 2018–19 to 2023–24
Source: 'PMMY Bank Wise Performance 2018-19, 2019-20, 2020-21, 2021-22, 2022-23 and 2023-24'.

The Shishu loan category, with a loan cap of ₹50,000, is instrumental in fostering entry-level entrepreneurship. Shishu loans predominantly serve early-stage micro-enterprises and self-employed individuals who need small-scale financing to start their ventures. This category commands the highest volume of loans, reflecting its central role in grassroots financial inclusion. Between FY 2018–19 and FY 2023–24,[vi] the number of Shishu loan accounts saw significant growth, with PVBs leading the charge. Private banks increased their reach from 11.23 million Shishu loan accounts with ₹343.31 billion in sanctions in FY 2018–19 to 17.27 million accounts and ₹618.37 billion by FY 2023–24. This aggressive market expansion by private banks underscores their operational efficiency, driven largely by digital lending platforms that streamline access to low-value credit. PSBs, meanwhile, maintain a strong presence, steadily increasing Shishu loans across underserved and semi-urban areas. Regional Rural Banks (RRBs) also play a critical role by focusing on financial access in rural regions where traditional banking infrastructure is limited. The steady growth in Shishu loans reflects PMMY's commitment to extending basic financial support to first-time entrepreneurs and financially excluded populations.

Kishore loans, ranging from ₹50,001 to ₹5 lakh, are designed to meet the needs of mid-tier MSMEs looking to scale up their operations. This category captures the highest sanction amounts, indicating the demand for growth capital as MSMEs move beyond initial setup to more structured business operations. Both PSBs and PVBs are pivotal in supporting Kishore loans. Private banks, in particular, show strong growth in this segment, increasing sanctioned amounts from ₹199.27 billion in FY 2018–19 to ₹928.17 billion in FY 2023–24. Their rapid growth reflects the competitive advantage they offer through streamlined digital processes and customer-oriented service models, which are attractive to MSMEs seeking speed and flexibility in financing options. PSBs, although facing competition from private banks, maintain a solid share of Kishore loans by balancing financial outreach with prudent risk management practices. Non-Banking Financial Companies (NBFCs) and Small Finance Banks (SFBs) have also contributed significantly to this segment by providing credit to semi-urban and rural MSMEs, often underserved by larger banks. RRBs remain an essential support system for rural MSMEs, ensuring consistent loan access for enterprises in geographically isolated areas. The competitiveness in the Kishore loan category indicates a well-functioning market that effectively meets the credit needs of growing MSMEs across urban and rural areas.

Tarun loans, ranging from ₹5 lakh to ₹10 lakh, target more established businesses that require significant capital to expand or modernise operations. This category is vital for MSMEs that are ready to scale up and invest in substantial capital improvements, such as machinery or infrastructure upgrades. PSBs continue to lead in Tarun loans, increasing their sanctioned amounts from ₹284.08 billion in FY 2018–19 to ₹594.20 billion in FY 2023–24, reflecting their mandate to support mid-sized businesses, particularly in urban and semi-urban areas. While PVBs focus less on high-volume outreach, they strategically support segments within the Tarun category, catering to enterprises with strong growth trajectories. RRBs contribute to rural sector's demand for Tarun loans by providing larger loans for rural-based MSMEs. NBFCs and NBFC-Microfinance Institutions (NBFC-MFIs) have a limited role in this category, focusing primarily on micro-loans and niche financing segments. Their constrained engagement in Tarun loans underscores their strategic decision to concentrate on micro-entrepreneurs, particularly those who may not yet qualify for larger loan sizes. Overall, the Tarun loan category reflects PMMY's role in bridging the gap between micro-loans and substantial business financing, supporting medium-sized enterprises that are ready to scale.

The borrower demographic analysis under PMMY reveals a focused approach to inclusion across marginalised groups such as Scheduled Caste (SC), Scheduled Tribe (ST), Other Backward Classes (OBC), women entrepreneurs, and first-time business owners. Women entrepreneurs, notably, held 71.03% of PMMY accounts in FY 2022–23, underscoring the programme's commitment to gender inclusivity. The growth in loan sanctions for women entrepreneurs, from ₹962.53 billion in FY 2018–19 to ₹1,093.55 billion in FY 2023–24,[vii] reflects PMMY's strategic focus on empowering women in business. The programme's consistent support for SC and ST borrowers aligns with national objectives to provide equitable access to financial resources, helping to bridge historical disparities. Loans to SC and ST borrowers have increased steadily, ensuring these groups have the resources needed to pursue entrepreneurial ventures. The inclusion of new entrepreneurs is equally significant, as PMMY supports startup capital for fresh business ventures. This emphasis on inclusion strengthens PMMY's role in fostering an equitable entrepreneurial ecosystem, where financial access is provided across diverse socio-economic backgrounds.

Institutional performance under PMMY illustrates a multi-faceted approach to MSME financing. PSBs, particularly the State Bank of India (SBI) and its associates maintain a dominant position in Shishu loans, leveraging their expansive reach to serve underserved populations. However, PVBs are aggressively expanding across all categories, especially Kishore loans, by leveraging digital innovations to provide accessible financing options for MSMEs seeking more flexible solutions. NBFCs focus on selective lending strategies, supporting niche borrower segments in semi-urban areas. Microfinance Institutions (MFIs) play a critical role in providing financial services to those at the grassroots level, often surpassing lending targets. These institutions prioritise efficient loan disbursement, making financial services accessible for micro-enterprises in regions underserved by traditional banks. SFBs consistently target micro and small entrepreneurs, particularly through Shishu and Kishore loans, ensuring financial inclusion for low-income segments across diverse regions.

The segmented approach within PMMY, represented by Shishu, Kishore, and Tarun loans, effectively addresses the financing needs of MSMEs at different growth stages. Shishu loans, comprising

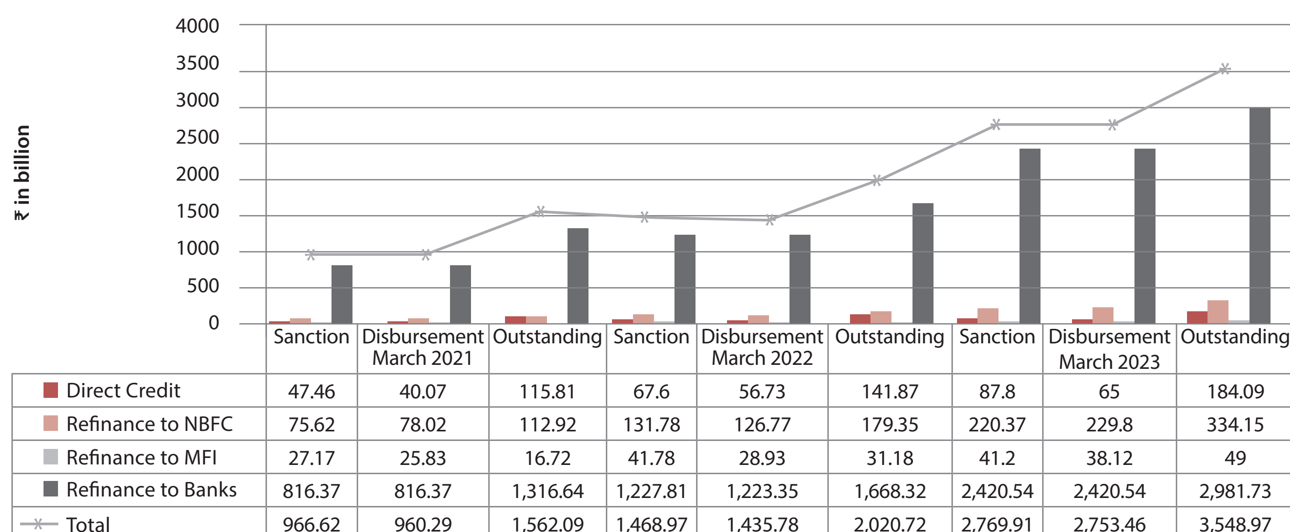
the largest volume, cater to nascent businesses, while Kishore loans capture a significant portion of sanctioned amounts, reflecting a strong demand for growth capital. Tarun loans, although fewer in volume, provide substantial support for enterprises requiring larger-scale capital investments. This segmentation within PMMY shows an evolving understanding of MSME development, as Shishu loans focus on entry-level finance while Kishore and Tarun loans foster the growth and expansion of established businesses.

The institution-wise breakdown of loan types demonstrates a strategic allocation of resources, with PSBs maintaining dominance in Shishu loans but facing increased competition from PVBs and NBFC-MFIs. NBFCs focus on niche markets, while SFBs provide steady support for micro-entrepreneurs. The competitive dynamics in the Kishore loan segment showcase an adaptive landscape, where each institution leverages its strengths to serve mid-tier MSMEs. PSBs maintain a significant presence by balancing reach with responsible lending, while PVBs capture market share by focusing on rapid, flexible loan services. In the Tarun loan category, both public and private banks play key roles in supporting the expansion of medium-sized businesses, a critical aspect of economic growth and job creation in the MSME sector.

Thus, PMMY's structured approach to loan segmentation, its focus on marginalised borrower groups, and the involvement of a diverse range of financial institutions underscore its comprehensive role in MSME financing. By addressing the varied credit needs of MSMEs through Shishu, Kishore, and Tarun loans, PMMY supports enterprises at every stage of growth, fostering both initial entrepreneurial ventures and significant business expansions. The programme's inclusive strategy ensures that traditionally underserved communities, such as SC/ST groups, women, and new entrepreneurs, receive targeted financial support. Institutional diversity within PMMY further enhances the programme's reach and impact, with PSBs, PVBs, NBFCs, and MFIs all contributing uniquely to financial inclusion and economic empowerment. As PMMY continues to evolve, its role in promoting sustainable economic development remains central to India's vision of inclusive growth, bridging financial disparities, and strengthening the MSME ecosystem across the country.

5.8. SMALL INDUSTRIES DEVELOPMENT BANK OF INDIA (SIDBI) AND MSMES

The Small Industries Development Bank of India (SIDBI)[viii] plays a multifaceted role in supporting India's MSME sector through strategic financing, digital innovation, and entrepreneurship promotion. As the principal financial institution for MSMEs, SIDBI has made significant contributions to expanding credit access and fostering sustainable growth among small and medium businesses. This analysis (Figure 5.15.) reviews the recent trends in SIDBI's core operations and highlights the broader implications for the MSME sector, drawing insights from the financial metrics provided.



	Sanction (March 2021)	Disbursement March 2021	Outstanding (March 2021)	Sanction (March 2022)	Disbursement March 2022	Outstanding (March 2022)	Sanction (March 2023)	Disbursement March 2023	Outstanding (March 2023)
Direct Credit	47.46	40.07	115.81	67.6	56.73	141.87	87.8	65	184.09
Refinance to NBFC	75.62	78.02	112.92	131.78	126.77	179.35	220.37	229.8	334.15
Refinance to MFI	27.17	25.83	16.72	41.78	28.93	31.18	41.2	38.12	49
Refinance to Banks	816.37	816.37	1,316.64	1,227.81	1,223.35	1,668.32	2,420.54	2,420.54	2,981.73
Total	966.62	960.29	1,562.09	1,468.97	1,435.78	2,020.72	2,769.91	2,753.46	3,548.97

Figure 5.15. Core Operations at a Glance by SIDBI (in ₹ billion)

Source: 'SIDBI Annual Report 2021-22 and 2022-23'.

SIDBI's role in supporting MSME financing in India has expanded significantly, marked by a 79% increase in bank refinancing, from ₹1,668.32 billion in March 2022 to ₹2,981.73 billion by March 2023. Through partnerships with 49 banks, SIDBI broadens financial access for MSMEs, aligning with government objectives of economic inclusion and resilience. Its support for NBFCs, which focus on underserved sectors, also saw a notable rise, with refinanced loans increasing by 86% to ₹334.15 billion and disbursements also rising significantly. This diversification in partnerships with banks and NBFCs reflects SIDBI's inclusive financing approach for MSMEs that may not qualify for traditional bank loans.

SIDBI's support extends to MFIs, which focus on rural and low-income entrepreneurs. Its MFI portfolio grew by 57% to ₹49 billion in FY 2023, highlighting its commitment to rural development and grassroots economic growth. The introduction of three new financial products under SLF-3 for small MFIs and digital finance entities demonstrates SIDBI's ongoing responsiveness to evolving MSME needs.

Direct credit to MSMEs has also grown, with the portfolio reaching ₹184.09 billion by March 2023. Leveraging real-time data from public databases, SIDBI's lending process has become more data-driven, reducing risks and enhancing credit access for MSMEs. Digital transformation supports SIDBI's initiatives, illustrated by platforms like TReDS, Jocata Sumpoorn (Box 5.1.), and Udyamimitra, which streamline loan access and expedite credit disbursements. Innovations such as 'Quick Bank Loans under an Hour' and blockchain-based security for lending showcase SIDBI's dedication to financial security and transparency, instilling confidence in MSMEs regarding digital services. SIDBI's impact extends to the startup ecosystem through its Fund of Funds for Startups, fuelling venture capital investments and fostering innovation across sectors. This support highlights SIDBI's role in encouraging entrepreneurial growth and innovation beyond traditional MSMEs.

Thus, SIDBI's growing support for the MSME sector spans a range of financial tools, digital innovations, and partnerships. With strong growth in refinancing, direct credit, and digital transformation, SIDBI fosters financial inclusion and aligns with national economic goals. Its diverse strategies, responsive to changing MSME needs, underscore SIDBI's role in advancing MSME resilience and contributing to India's sustained and inclusive economic growth.

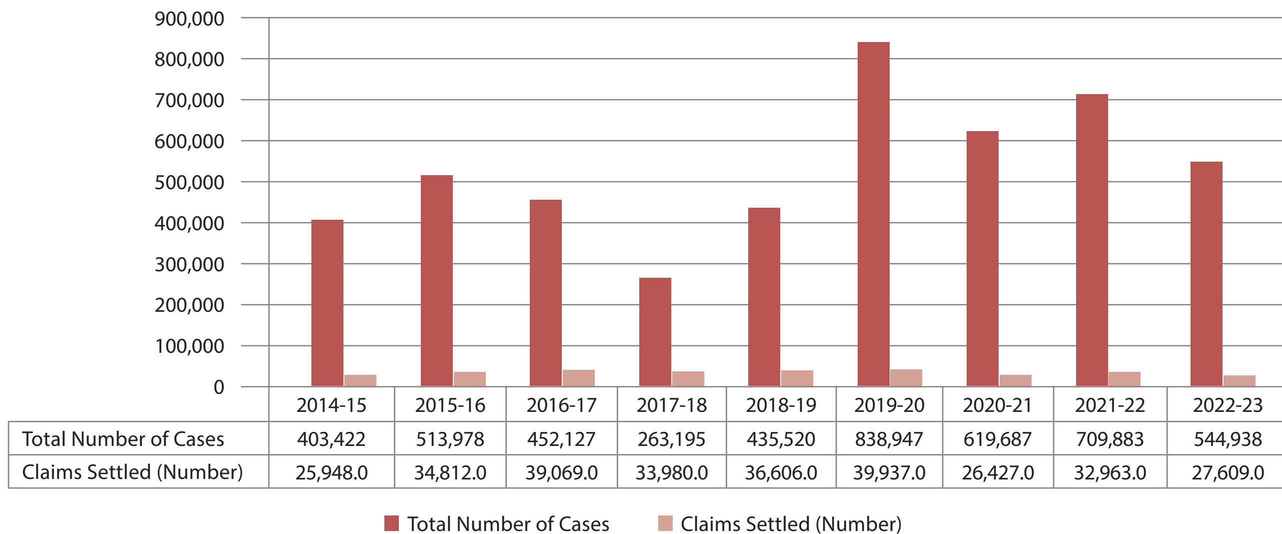
5.9. THE CREDIT GUARANTEE FUND TRUST FOR MICRO AND SMALL ENTERPRISES (CGTMSE) DATA ANALYSIS

The Credit Guarantee Fund Trust for Micro and Small Enterprises (CGTMSE) data from Figures 5.16., 5.17., and 5.18. offers a detailed perspective on the credit trends, reliance on guarantee schemes, and claims settlement dynamics within India's MSME sector across recent fiscal years. This analysis reflects CGTMSE's critical role in stabilising MSME credit, especially during significant economic shifts such as demonetisation and the COVID-19 pandemic.

BOX 5.1. THE JOCATA SUMPOORN INDEX[ix]

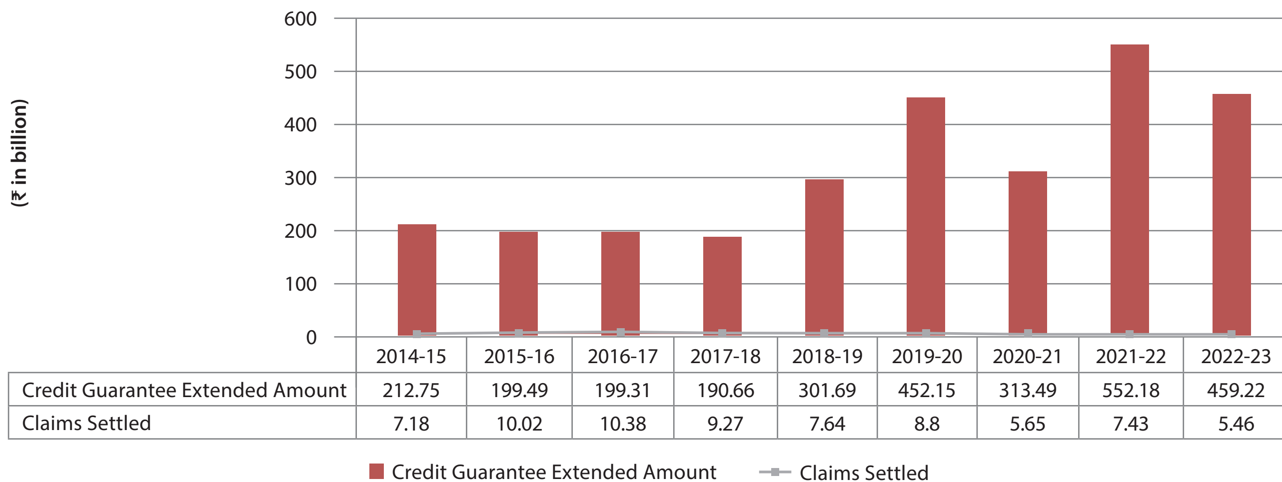
The Jocata Sumpoorn index provides insights into the financial health of MSMEs. The latest reading of 0.56 in August 2024, down from 0.60 in July, signals cautious expansion in MSME activity amidst economic strain, in line with slowdowns in FMCG, core industries, and automobile sales. Geopolitical tensions and variable export markets pose additional challenges, with only a small fraction of MSMEs engaged in exports. Sectors such as engineering and electronics have performed well, while exports in gems and jewellery have declined, underscoring the need for policy support to boost MSME export capabilities.

Agricultural MSMEs are affected by inconsistent monsoon patterns, with variations in rainfall impacting crop-dependent MSMEs. SIDBI's rural support aims to provide financial stability in light of these agricultural challenges, helping MSMEs navigate climate-related impacts. Furthermore, the festive season offers potential demand growth for MSMEs, as evidenced by stronger sales in two-wheelers and tractors. However, the growth trajectory will depend on inventory strategies in larger industries. SIDBI's emphasis on cash-flow-based lending and reduced reliance on traditional collateral models enhances MSME credit accessibility, positioning them to capitalise on emerging market opportunities.



	2014-15	2015-16	2016-17	2017-18	2018-19	2019-20	2020-21	2021-22	2022-23
Total Number of Cases	403,422	513,978	452,127	263,195	435,520	838,947	619,687	709,883	544,938
Claims Settled (Number)	25,948.0	34,812.0	39,069.0	33,980.0	36,606.0	39,937.0	26,427.0	32,963.0	27,609.0

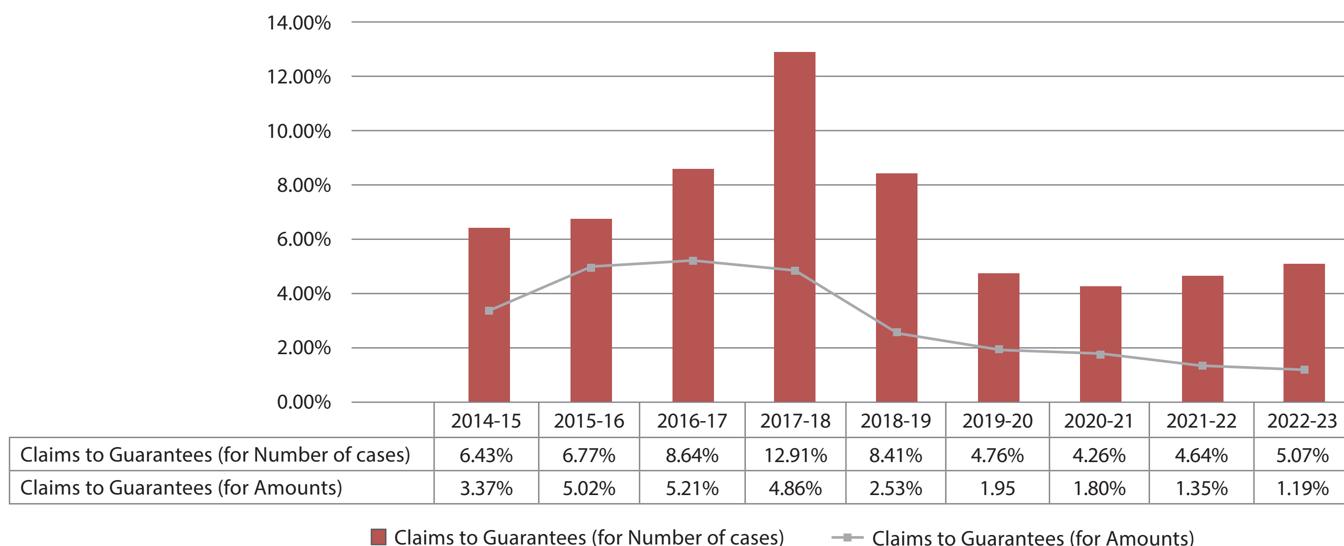
Figure 5.16. CGTMSE Financial Year-Wise Total Number of Cases and Claims Settled (Numbers)
Source: 'https://dashboard.msme.gov.in/cgtmse.aspx'.



	2014-15	2015-16	2016-17	2017-18	2018-19	2019-20	2020-21	2021-22	2022-23
Credit Guarantee Extended Amount	212.75	199.49	199.31	190.66	301.69	452.15	313.49	552.18	459.22
Claims Settled	7.18	10.02	10.38	9.27	7.64	8.8	5.65	7.43	5.46

Figure 5.17. CGTMSE Financial Year-Wise Credit Guarantee Extended Amount and Claims Settled (in ₹ billion)
Source: 'https://dashboard.msme.gov.in/cgtmse.aspx'.

The CGTMSE data encapsulates both the challenges and resilience of India's MSME sector over the years. The increase in claims following demonetisation underscores CGTMSE's role in providing a financial cushion for MSMEs facing abrupt economic disruptions. The record guarantee amounts in 2021–22 and the declining claims ratio in 2022–23 reflect CGTMSE's adaptability as MSMEs transition from crisis management to growth. This analysis highlights CGTMSE's dual role in facilitating credit access and fostering long-term financial stability within the sector. By responding dynamically to economic shifts and supporting small-scale enterprises during turbulent times, CGTMSE solidifies the foundations of India's MSME ecosystem, contributing to the sector's sustained growth and resilience.



	2014-15	2015-16	2016-17	2017-18	2018-19	2019-20	2020-21	2021-22	2022-23
Claims to Guarantees (for Number of cases)	6.43%	6.77%	8.64%	12.91%	8.41%	4.76%	4.26%	4.64%	5.07%
Claims to Guarantees (for Amounts)	3.37%	5.02%	5.21%	4.86%	2.53%	1.95	1.80%	1.35%	1.19%

Figure 5.18. Claims to Guarantees Percentages for Number of Cases and Amounts (in percentages)
Source: 'https://dashboard.msme.gov.in/cgtmse.aspx'.

5.10. TReDS DATA ANALYSIS

The analysis of the Trade Receivables Discounting System (TReDS) data (Table 5.3.) shows the platform's rapid growth and its increasingly critical role in addressing the financing needs of India's MSMEs. Launched by the RBI in 2014 and operationalised through three licensed platforms since 2017, TReDS[x] enables MSMEs to convert receivables from corporates, government entities, and PSUs into ready cash by discounting their invoices. This mechanism directly addresses MSMEs' working capital needs, thereby improving liquidity and financial stability within the sector.

The TReDS platform has shown remarkable growth in facilitating MSME financing in India, with substantial year-over-year increases in the number of invoices processed and the total amount financed. From 2018–19 to 2022–23, the number of invoices uploaded on TReDS surged more than tenfold, from 251,695 to 2,724,872, while the total amount uploaded skyrocketed from ₹67 billion to ₹839.55 billion. The financed amount showed similar growth, increasing from ₹58.54 billion in 2018–19 to ₹766.45 billion in 2022–23, highlighting TReDS' effectiveness in converting uploaded invoices into funded transactions.

The fiscal year 2021–22 marked a significant milestone, with the number of invoices uploaded doubling from the previous year and the uploaded amount escalating from ₹196.70 billion to ₹441.12 billion. The number of financed invoices and the amount financed also more than doubled, reflecting TReDS' ability to meet MSME liquidity needs during the COVID-19 recovery period.

Growth continued in 2022–23, with a 57% increase in uploaded invoices and a 90% rise in the uploaded amount, reaching ₹839.55 billion. The number of

Table 5.3. Progress in MSME Financing Through TReDS

Financial Year	Invoices Uploaded	Amount Uploaded (₹ billion)	Invoices Financed	Amount Financed (₹ billion)
2018–19	251,695	67.00	232,098	58.54
2019–20	530,077	130.88	477,969	111.66
2020–21	861,560	196.70	786,555	170.80
2021–22	1,733,553	441.12	1,640,824	403.09
2022–23	2,724,872	839.55	2,558,531	766.45

Source: RBI, 'Report on Trend and Progress of Banking in India 2022–23'.

financed invoices grew to 2,558,531 with a financed amount of ₹766.45 billion. TReDS maintained a high success rate of 93.89% in converting uploaded invoices into financed transactions, demonstrating strong operational efficiency and trust among MSMEs, corporate buyers, and financiers. This rise in participation underscores the platform's broad acceptance as a reliable, collateral-free financing option, particularly valuable for MSMEs constrained by traditional financing models.

The sustained growth in TReDS utilisation reflects a broader shift in MSME financing in India towards digital solutions that enable efficient, transparent, and scalable liquidity management. TReDS addresses a critical gap by providing MSMEs with prompt payments without collateral requirements, a key capability in a landscape where delayed payments are common. The platform's high conversion rate and growing user base position it as a vital component of India's digital financial ecosystem, supporting MSME financial stability and growth.

In essence, TReDS has emerged as a crucial player in India's MSME financing framework, achieving exponential growth in transactions, total amounts processed, and user trust from 2018–19 to 2022–23. Its scalable model for meeting MSME funding needs and fostering financial inclusion cements its role as a key driver in the digital transformation of India's financial landscape for MSMEs.

5.11. DIGITAL LENDING

India's MSME financing landscape is undergoing a revolutionary transformation, largely driven by digital lending. Historically, traditional financial institutions struggled to meet MSMEs' unique funding needs, leaving a substantial financing gap. Digital lending—characterised by fast, paperless, and data-driven loan processes—has empowered MSMEs. This shift aligns with government goals for financial inclusion and is supported by entrepreneurs who are tech-savvy and have access to smartphones and the internet. This digital shift enables MSMEs to secure funds with unprecedented speed and ease, altering their growth trajectories.

Digital lending platforms (Box 5.2.) streamline the loan process, often disbursing funds within hours by utilising automated data analytics and digital management. This approach allows lenders to reach smaller enterprises traditionally viewed as high-risk, broadening access to capital. These platforms enhance financial transparency by evaluating creditworthiness using alternative data sources, such as business activity and online behaviour, making

BOX 5.2. AI-DRIVEN DIGITAL LENDING: THE NEW KID IN TOWN

AI-driven digital lending has deepened the impact of this shift, as platforms leverage predictive analytics and machine learning for faster, more accurate loan assessments. FinTech companies like Indifi, Capital Float, Clix Capital, and Lendingkart exemplify this trend, using data analytics to assess creditworthiness without traditional paperwork. Companies like NeoGrowth and SME Corner have reduced physical documentation requirements, expediting the lending process and offering collateral-free loans within 24 hours. This shift positions digital lending as a mainstream choice over traditional banks due to its convenience and efficiency.

The ecosystem includes a range of digital lenders, each with unique strengths. For example, Capital Float provides short-term loans for online sellers, while Clix Capital offers a variety of financial solutions. The rapid, data-backed decisions and quick disbursements are particularly beneficial for MSMEs, which often face liquidity constraints, enabling them to access funds more efficiently. The ease of access provided by digital lending and the ability to assess loan eligibility instantly, based on real-time data, enable customised financial products tailored to each MSME's needs, cutting down on time-consuming bank processes.

With growing internet usage across India, digital lending is expected to become the dominant source of unsecured loans for MSMEs. FinTech lenders like Vayana Network and CoinTribe play a key role in offering accessible working capital solutions, often in partnership with banks and NBFCs, broadening their reach and impact. This rise in digital lending, projected to multiply fifteenfold by 2023, showcases the synergy between technology and finance, allowing MSMEs to secure credit without being restricted by geography, collateral, or conventional credit scores.

loans accessible even for MSMEs lacking formal credit histories. Reports project that digital lending will grow at a 22% Compound Annual Growth Rate (CAGR), reaching $1.3 trillion by 2030, highlighting its transformative role in India's financial ecosystem.

As India advances towards a more integrated economy, digital lending promises to further transform MSME financing. AI-powered platforms are expanding access to capital and creating a financially inclusive ecosystem. This evolution in lending signifies more than a shift in finance; it marks a fundamental change in empowering MSMEs, driving national growth, and positioning them as critical players in India's economic landscape.

5.12. DISCUSSION

The current landscape of MSME financing in India is a complex blend of evolving financial practices, strategic banking adjustments, and emerging technological solutions. The data analysis indicates that while the sector demonstrates resilience and recovery, especially post-pandemic, a distinct shift toward high-value lending by PVBs is noticeable. This trend may leave smaller MSMEs at a disadvantage, particularly those struggling to meet increasingly stringent lending requirements. The reduced focus on smaller enterprises threatens the inclusivity of the MSME sector, which plays a vital role in employment and economic diversity. Given these challenges, the discussion emphasises the need for balanced support and targeted policy interventions to ensure that smaller MSMEs are not left behind in the push for financial stability and growth. The rise of alternative financing options, including NBFCs and FinTech companies, signals a transformation within the MSME financial ecosystem. These institutions, with their agility and technological innovations, are filling critical gaps left by traditional banks, offering smaller MSMEs viable pathways to credit. Further, government initiatives like the Udyam Registration and platforms like TReDS are redefining MSME support structures, enabling more robust access to finance and enhancing liquidity management. This discussion identifies key lessons from the current data, highlighting both the opportunities and challenges for ensuring an inclusive and resilient MSME financing environment.

5.12.1. Key Lessons in MSME Financing in India

1. **Differential Impact Across MSME Categories:** Larger MSMEs with established credit histories find it easier to secure credit, whereas smaller, newer businesses face more challenges due to perceived risks and limited collateral. A segmented financing approach tailored to different MSME categories is essential to ensure balanced development.
2. **Shift Toward Larger Loans and High-Value Clients:** PVBs are increasingly focusing on high-value loans for stable clients, risking the exclusion of smaller MSMEs. A diversified strategy is needed to balance profitability with financial inclusivity.
3. **Importance of Diversified Lending Strategies:** MSME financing requires innovative, customised solutions. Advanced risk assessment tools and specialised products can support smaller enterprises without compromising bank asset quality.
4. **Role of NBFCs and FinTech in Expanding Financial Access:** NBFCs and FinTech platforms are filling gaps for smaller MSMEs by offering faster, often collateral-free loans, which are particularly beneficial for those in underserved sectors.
5. **Improvement in Asset Quality Reflects Economic Resilience:** Improved MSME asset quality post-pandemic indicates sector resilience. Continued support for sustainable financial practices will be crucial for lasting recovery.
6. **Need for a Centralised Data Dashboard for MSME Financing:** A centralised RBI-managed dashboard could streamline MSME financing data, enabling precise, data-driven policy and lending decisions.
7. **Policy Focus on Inclusivity and Sustainable Growth:** Policies should focus on ensuring access to credit for smaller MSMEs while supporting sustainable, long-term growth across the sector through entrepreneurship and skill development initiatives.
8. **Opportunity for MSMEs to Enhance Global Competitiveness:** Improved credit access can enable MSMEs to compete internationally, helping them contribute to India's economic growth in global markets.
9. **Leveraging AI and Data Analytics for Effective Risk Management:** AI and data analytics can transform MSME financing by allowing precise credit risk assessments and better resource allocation.
10. **Specialised Regulatory Framework for Digital Lending and FinTech:** A tailored regulatory framework for digital lenders and FinTech firms will promote transparency and ensure market stability, benefiting MSMEs.

11. **Sustaining the Role of PSBs in Financial Inclusion:** PSBs are crucial for smaller MSMEs' access to credit, and supporting their inclusion-focused approach is essential for fostering financial stability across the sector.
12. **High-Cost Credit and Informal Lending as Barriers to MSME Growth:** Smaller MSMEs often rely on costly informal credit. Offering affordable alternatives within the formal sector is necessary to break cycles of debt and enable growth.
13. **Impact of Udyam Registration on MSME Formalisation:** Udyam Registration has increased MSME formalisation, improving credit access. Policymakers should address compliance chal lenges to maximise benefits.
14. **TReDS as a Solution for MSME Liquidity Needs:** TReDS addresses liquidity needs by quickly converting receivables into cash, supporting financial stability, especially for smaller MSMEs.
15. **Importance of Collaboration Among Stakeholders:** Collaboration between banks, regulators, and MSME associations can refine financing policies, close credit gaps, and support sustainable lending practices.

Overall, the complex MSME financing landscape in India faces challenges as banks prioritise larger loans, potentially marginalising smaller enterprises. However, digital lending, FinTech platforms, and initiatives like Udyam Registration and TReDS show a positive shift towards broader access. What is really needed is a balanced, inclusive financing approach that combines digital tools, targeted policies, and regulatory oversight, ensuring MSMEs remain integral to India's economic growth, employment, and innovation. Such an ecosystem is clearly in the making.

ENDNOTES

i See NITI Aayog, (November, 2023), 'Impact Assessment of Pradhan Mantri Mudra Yojana (PMMY)', https://www.niti.gov.in/sites/default/files/2024-08/Assessment%20of%20PMMY_Final%20Report.pdf

ii See 'Strengthening Credit Flows to the MSME Sector', https://prsindia.org/policy/report-summaries/strengthening-credit-flows-to-the-msme-sector

iii 2023-24 (As at end-December 2023). RBI says that the data are provisional.

iv The values in concerned table in the RBI Annual Report 2019-20 do not add up to the totals given there in. The same has been corrected and used here.

v See RBI, 'Report on Trend and Progress of Banking in India, 2021-22, and 2018-19', https://rbi.org.in/Scripts/AnnualPublications.aspx?head=Trend%20and%20Progress%20of%20Banking%20in%20India

vi See 'PMMY Bank Wise Performance 2018-19, 2019-20, 2020-21, 2021-22, 2022-23 and 2023-24', https://www.mudra.org.in/

vii See 'PMMY Bank Wise Performance 2018-19, 2019-20, 2020-21, 2021-22, 2022-23 and 2023-24', https://www.mudra.org.in/

viii The SIDBI and MUDRA Annual Reports for 2023-24 are not yet available as on 14th November 2024.

ix See https://www.sidbi.in/jocata-sumpoorn

x RBI, 'Report on Trend and Progress of Banking in India 2021-22', https://rbi.org.in/Scripts/AnnualPublications.aspx?head=Trend%20and%20Progress%20of%20Banking%20in%20India and RBI, 'Report on Trend and Progress of Banking in India 2022-23', https://rbi.org.in/Scripts/AnnualPublications.aspx?head=Trend%20and%20Progress%20of%20Banking%20in%20India

Small Finance Banks in India: Powering Financial Inclusion

Ramesh Srivatsava Arunachalam

6

6.1. INTRODUCTION

The banking sector in India has undergone a remarkable transformation over the past decade, largely driven by the emergence of Small Finance Banks (SFBs). These institutions were conceived as specialised banks with a core mission to serve unbanked and underbanked populations. Since their inception in 2016, SFBs have rapidly become pivotal players in India's financial ecosystem, making substantial strides in promoting financial inclusion.

This chapter explores the origins of SFBs and charts their growth from their inception to 2024. It highlights key milestones in their development within India's financial ecosystem. The chapter then examines the current landscape of SFBs, focusing on their strengths, weaknesses, challenges and competitive/comparative advantages, especially in serving underserved and financially excluded markets. Finally, it draws lessons from SFB journey so far and looks ahead to their future role in advancing financial inclusion.

6.2. THE ORIGIN AND EVOLUTION OF SFBs

The idea of SFBs originated from early discussions about the need for specialised financial institutions to promote financial inclusion. This concept gained momentum in 2008 when the Committee on Financial Sector Reforms, led by Raghuram Rajan,[1] recommended the establishment of small, well-governed banks to serve underserved segments of the population. The committee emphasised that financial inclusion should be driven by institutions recognising the business potential of these groups rather than through public sector mandates. The focus was on banks rather than financial institutions because offering savings services made sense both from a client and organisational perspective. For low-income individuals, savings acted as the first form of insurance, while for organisations, savings represented the cheapest source of non-subsidised capital.

In 2013, this idea gained further momentum when the Committee on Comprehensive Financial Services for Small Businesses and Low-Income Households, chaired by Nachiket Mor,[ii] proposed a differentiated banking framework aimed at addressing the financial needs of small businesses and low-income households. This led to the Reserve Bank of India (RBI) issuing guidelines in November 2014 for the creation of SFBs. The guidelines outlined goals to provide savings vehicles for unserved populations and to extend credit to small businesses, marginal farmers, and other unorganised sectors using high-technology, low-cost operations. In September 2015, the RBI granted in-principle approval to ten applicants,[iii] primarily non-banking financial companies (NBFCs) and microfinance institutions, with Capital Small Finance Bank becoming the first to launch in April 2016.[iv]

The regulatory framework for SFBs ensured a focus on financial inclusion by mandating minimum capital thresholds, strict lending guidelines, and rural outreach requirements. For example, 75% of Adjusted Net Bank Credit (ANBC) had to be allocated to Priority Sector Lending (PSL), with at least 50% of the loan portfolio consisting of smaller loans up to ₹25 lakh. SFBs were also required to comply with commercial bank norms, such as maintaining the Cash Reserve Ratio (CRR) and Statutory Liquidity Ratio (SLR). This framework enabled SFBs to transition from NBFCs and MFIs into full-service banks, allowing them to accept

deposits and provide a wider range of financial services. As a result, they positioned themselves as key players in advancing financial inclusion for India's most underserved populations.

6.2.1. Growth and Development of SFBs (2017–2024)

Since their inception, SFBs have witnessed rapid growth, evolving from a nascent segment with ten newly licensed players into a significant niche within India's banking landscape. The period from 2017 to 2024 has been characterised by exponential growth in balance sheet size, customer base, product offerings, and geographical reach, solidifying the role of SFBs in the broader financial sector.

6.2.2. Establishing the Banking Platform (2017–2019)

The initial years from 2017 to 2019 were crucial for laying the foundation of SFBs. During this period, SFBs focused on establishing core banking infrastructure, expanding their branch networks, and transitioning from their previous roles as NBFCs and MFIs into full-service banks. Significant investments were made in technology platforms to enable low-cost operations, which was critical given the price sensitivity of their target segments. SFBs also concentrated on deposit mobilisation, establishing liability-focused branches to build a stable deposit base essential for their banking operations. While there was a gradual diversification of loan portfolios beyond microfinance, the high cost-to-income ratio reflected the heavy investments in technology and branch expansion. During this phase, most SFBs concentrated on their traditional geographical areas and customer segments, laying a strong foundation for future growth.

6.2.3. Navigating Economic Headwinds (2019-2021)

The period from 2019 to 2021 presented significant challenges for SFBs. An economic slowdown, compounded by the unprecedented impact of the COVID-19 pandemic, tested the resilience of these institutions. Asset quality pressures began to emerge, particularly in unsecured microfinance portfolios, as the economic environment became increasingly challenging. However, this period also accelerated the adoption of digital banking channels, with SFBs rapidly transitioning to digital platforms to maintain operations and customer engagement during lockdowns and social distancing norms. Focused efforts to optimise cost and improve operational efficiency became paramount, as increased provisioning requirements impacted profitability. Despite these challenges, deposit mobilisation gained momentum as SFBs offered competitive interest rates to attract deposits, reinforcing their market position.

6.2.4. Accelerated Growth and Diversification (2021–2024)

Following the initial challenges of the pandemic, SFBs entered a phase of accelerated growth and diversification from 2021 to 2024. This period saw a strong revival in credit demand, particularly from Micro, Small, and Medium Enterprises (MSMEs) and the retail sector, as the economy began to recover. SFBs capitalised on this resurgence by focusing on secured lending, which helped reduce portfolio vulnerability. The rapid expansion of their branch networks and geographical reach further facilitated this growth, enabling SFBs to access new customer segments across India. Technological advancements played a crucial role, with enhanced adoption enabling better credit underwriting and enhanced customer service. During this period, many SFBs tapped into capital markets through Initial Public Offerings (IPOs), reflecting growing investor confidence in the SFB model. Improved profitability, with returns on assets (ROA) averaging between 1.5 and 2%[v] (with some even exceeding this range), highlighted the success of their strategies during this phase.

Throughout this journey, SFBs remained committed to their core mandate of financial inclusion while continually evolving their business models to meet the changing needs of the market. Their ability to adapt and innovate has been key to their sustained growth and success.

6.2.5. Current Landscape of SFBs (2024)

This analysis explores the performance and strategic evolution of SFBs in India, focusing on key financial metrics such as PSL, geographical service distribution, balance sheet growth, profitability, and financial ratios. It offers insights into how these banks contribute to financial inclusion while maintaining sustainable growth.

6.2.5.1. Priority Sector Lending (PSL)

SFBs play a critical role in financial inclusion, particularly through PSL, which is aimed at reaching underbanked and underserved segments of the economy. The total PSL advances of SFBs grew significantly from ₹455.66 billion in 2020 to ₹949.99 billion in 2023,[vi] reinforcing their expanding

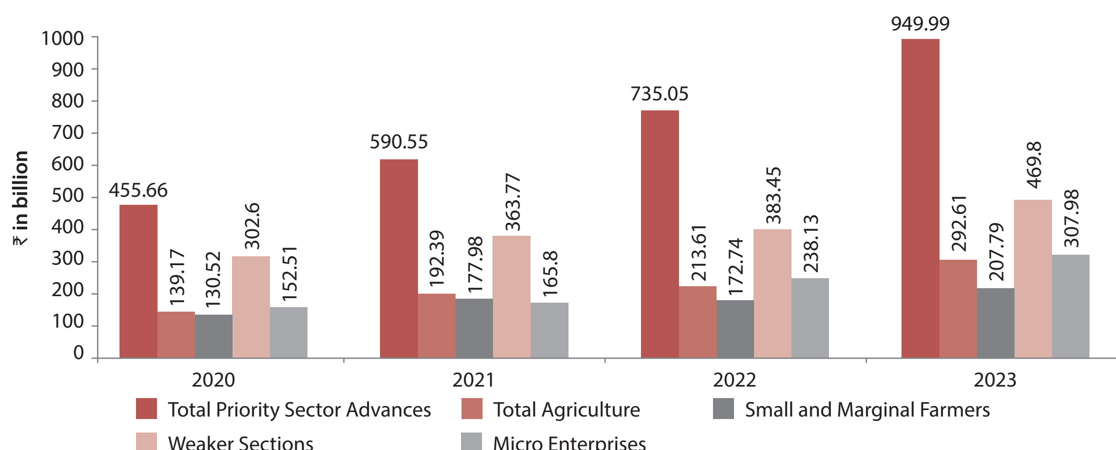


Figure 6.1. Priority Sector Lending by Small Finance Banks 31 March 2020 to 31 March 2023
Source: RBI, 'Report on Trend and Progress of Banking in India'.

role in promoting financial inclusion. Although the absolute amount of PSL advances increased, PSL as a percentage of ANBC or Credit Equivalent of Off-Balance Sheet Exposure (CEOBE) fluctuated slightly, maintaining an average range of 86–88%. This consistency indicates that SFBs have adhered to regulatory standards while expanding their activities in other potentially profitable sectors.

SFBs have shown strong growth across various sectors. Advances to agriculture increased from ₹139.17 billion in 2020 to ₹292.61 billion in 2023.[vii] However, within agriculture, there appears to be a shift in focus, as the share of loans to small and marginal farmers dropped from 25.27% to 19.3%,[viii] suggesting that SFBs may be prioritising larger agricultural enterprises. Lending to weaker sections also grew from ₹302.60 billion in 2020 to ₹469.80 billion in 2023, but it's proportion of ANBC decreased from 58.59% to 43.6%, indicating a growing focus on other segments.[ix] Additionally, advances to micro-enterprises doubled, rising from ₹152.51 billion in 2020 to ₹307.98 billion by 2023.[x] This highlights the continued focus of SFBs on MSMEs, which play a pivotal role in the Indian economy.

6.2.5.2. Geographical Distribution of ATMs

The geographical distribution of ATMs by SFBs reveals a strategic shift from rural to urban and semi-urban markets. Between 2019 and 2023, the number of ATMs in rural areas dropped sharply from 372 (21.6% of the total) to 239 (0.7%), while ATMs in semi-urban and urban areas grew to 875 (1.4%) and 837 (1.5%), respectively.[xi] This shift indicates that SFBs are increasingly focusing on urban and semi-urban markets, where transaction volumes and profitability are generally higher compared to rural areas. While this strategic pivot reflects a drive for financial sustainability, it also signals a departure from the rural-centric approach that initially defined their mission. Two key aspects likely influencing this shift are the growing rural-to-urban migration and the rising levels of urban poverty. As more people relocate to cities and urban poverty level increase, SFBs seem to have adapted by expanding their services to address the financial needs of these changing populations, particularly migrant workers and the urban poor, who are often overlooked by traditional banking systems.

6.2.5.3. Deposits and Capital Structure

Deposits and capital structure are crucial indicators of the financial health and resilience of SFBs. As of March 2023, the ratio of insured deposits to assessable deposits stood at 40.9%,[xii] reflecting SFBs' focus on safeguarding depositor funds. This is particularly important given their predominantly low-income customer base. In terms of capital growth, share capital increased by 8.6% in 2023,[xiii] while reserves and surplus saw a robust growth of 38%,[xiv] indicating a strengthened capital base essential for absorbing potential losses and supporting future growth. However, Tier 2 capital declined by 15.7%,[xv] suggesting a deliberate strategy to reduce reliance on subordinated debt, which carries higher costs and risks compared to Tier 1 capital.

6.2.5.4. Balance Sheet Expansion

SFBs have witnessed rapid expansion in their balance sheets, further solidifying their role in India's banking sector. The total assets of SFBs

grew by 30.8% in 2022 and by 25.1% in 2023, largely driven by a substantial increase in loans and advances, which remain the largest component of their asset base, growing by 28.7% in 2023.[xvi] Investments also saw a significant increase of 30.8% in 2023,[xvii] reflecting a strategic shift toward safer, more liquid assets to balance the aggressive growth in loans. Borrowings, including Tier-II bonds, grew by 10.8% in 2023,[xviii] indicating a cautious approach to leveraging as SFBs focus on sustainable growth without excessively expanding their liabilities. This prudence is a good practice, as it mitigates the risks associated with over-leveraging, ensuring stability and long-term growth, especially in volatile market conditions.

6.2.5.5. Purpose-wise Lending

The distribution of advances by purpose reveals the shifting priorities of SFBs. The share of PSL decreased from 93.4% of total advances in 2017 to 61.3% in 2023,[xix] indicating a diversification into non-priority sectors, likely driven by the pursuit of higher profitability. Within PSL, the focus on agriculture and MSMEs remains strong, but sectors such as housing have seen a reduction, with their share dropping from 5.5% in 2022 to 4.3% in 2023.[xx] This indicates a realignment of priorities toward sectors that offer quicker returns or lower risk profiles. Advances in the education sector are currently minimal and, hence, have been omitted from the trend analysis.

6.2.5.6. Financial Performance

The financial performance of SFBs has improved significantly, as indicated by their income, expenditure, and profitability metrics. Total interest income increased from ₹222.79 billion in 2022 to ₹396.46 billion in 2024 (Table 6.1.), driven by both interest income and other income sources. Despite this diversification, interest income remains the dominant revenue stream, reflecting SFBs' traditional banking model focused on lending. On the expenditure side (interest expended), total costs (excluding provisions and contingencies) rose from ₹91.25 billion in 2021 to ₹174.74 billion in 2024,[xxi] reflecting rising interest expenses and operating costs associated with the rapid growth of SFBs. Operating profit improved steadily, rising from ₹56.39 billion in 2022 to ₹108.66 billion in 2024,[xxii] demonstrating improved operational efficiency and enhanced revenue generation capabilities.

Net profit saw a significant recovery between 2023 and 2024, increasing from ₹8.27 billion in 2022 to ₹41.65 billion in 2023, and further to ₹62.19 billion in 2024. This recovery suggests that SFBs have effectively managed their non-performing assets (NPAs) and other risks, positioning themselves for sustained profitability.

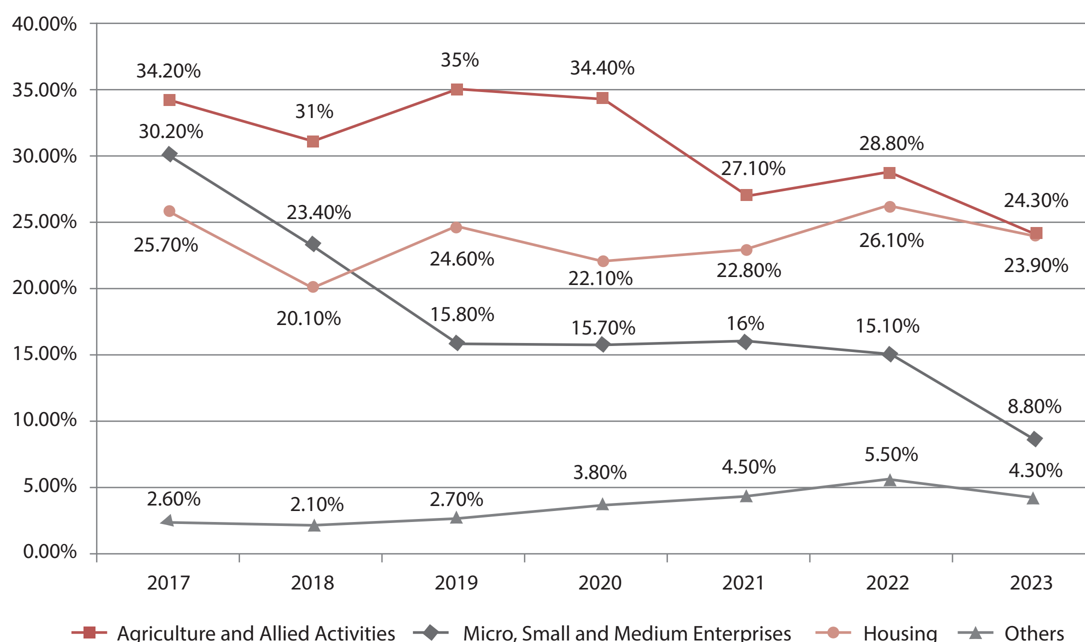


Figure 6.2. Purpose-wise Outstanding to Total Advances by Small Finance Banks (31 March 2017 to 31 March 2023)
Source: RBI, 'Report on Trend and Progress of Banking in India'.

Table 6.1. **Financial Performance of 12 Small Finance Banks As on March 31, Multiple Years (₹ in billion)**

Particulars	2021	2022	2023	2024
Total Interest Income	195.22	222.79	298.07	396.46
Interest Expended	91.25	96.20	121.39	174.74
Total Operating Profit	57.42	56.39	85.18	108.66
Total Net Profit	20.14	8.27	41.65	62.19

Source: Data from Indian Banks' Association, 'Key Business Statistics'

6.2.5.7. Key Ratios

Key financial ratios provide a comprehensive view of SFBs' operational efficiency, risk management, and financial stability. The credit-deposit ratio (CDR) averaged over 90%,[xxiii] indicating high lending activity relative to deposits. While this is profitable, it also entails higher liquidity risks. Operating expenses as a percentage of total expenses increased to 52% in 2023,[xxiv] highlighting the need for tighter cost management as SFBs scale their operations. This is something that the SFBs appear to be doing in FY 2024 (49.47%). The ROA has been somewhat volatile (though it remained within a stabile range over the years), reflecting the challenge of balancing growth with profitability. Nonetheless, SFBs have maintained a strong capital adequacy ratio (CAR), with most banks well above the regulatory minimum of 15%[xxv] and many in the 20–25% range,[xxvi] providing a cushion against potential losses. The net NPA ratio improved significantly, declining from 2.75% in 2021 to 0.78% in 2024,[xxvii] signalling better asset quality and more effective risk management. Both business per employee and profit per employee have shown steady growth, indicating improvements in productivity and operational efficiency.

Table 6.2. **12 Small Finance Banks – Credit Deposit Ratio and Operating Expenses as on March 31 (in %)**

S. No.	Small Finance Banks	Credit Deposit Ratio				Operating Expenses as % to Total Expenses				Return on Assets				Net NPA as % to Net Advances			
		2021	2022	2023	2024	2021	2022	2023	2024	2021	2022	2023	2024	2021	2022	2023	2024
1	Au Small Finance Bank Ltd.	96.19	87.66	84.22	83.92	39.08	47.31	47.64	44.84	2.50	1.87	1.79	1.54	2.18	0.50	0.42	0.55
2	Capital Small Finance Bank Ltd.	71.38	76.65	82.75	81.24	35.60	37.80	38.62	36.56	0.69	0.92	1.22	1.27	1.13	1.36	1.36	1.40
3	Equitas Small Finance Bank Ltd.	102.78	102.23	101.78	85.70	48.75	54.53	55.76	50.96	1.65	1.07	1.82	1.96	1.58	2.47	1.21	1.17
4	ESAF Small Finance Bank Ltd.	90.77	90.81	94.95	92.07	46.75	52.12	54.74	53.23	0.95	0.39	1.63	1.86	3.88	3.92	1.13	2.26
5	Fincare Small Finance Bank Ltd.	99.67	109.01	108.33	117.45	45.71	53.17	57.21	55.65	1.44	0.10	0.95	2.69	2.80	3.55	1.30	0.63
6	Jana Small Finance Bank Ltd.	93.75	96.09	108.73	102.39	45.88	46.00	47.58	45.97	0.52	0.03	1.13	2.37	5.33	3.95	2.64	0.56
7	North East Small Finance Bank Ltd.	129.55	106.44	78.60	52.81	50.51	53.79	55.73	58.42	0.32	(5.50)	(7.68)	(6.28)	6.80	3.56	1.71	8.36
8	Suryoday Small Finance Bank Ltd.	122.33	123.28	116.42	103.87	47.34	53.62	53.68	53.74	0.20	(1.29)	0.87	1.94	4.73	5.97	1.55	0.86
9	Ujjivan Small Finance Bank Ltd.	110.34	89.13	83.37	85.44	53.29	58.99	55.12	50.13	0.04	(2.04)	4.04	3.47	2.93	0.61	0.04	0.28
10	Utkarsh Small Finance Bank Ltd.	109.45	101.53	95.32	93.66	42.36	48.22	50.36	49.92	1.04	0.48	2.45	2.46	1.32	2.31	0.39	0.03
11	Shivalik Small Finance Bank Ltd.	–	69.60	74.30	86.96	–	46.92	49.73	50.26	–	0.05	0.07	0.08	–	1.31	1.16	0.84
12	Unity Small Finance Bank Ltd.	–	63.29	166.44	122.38	–	63.85	73.15	66.50	–	(6.28)	0.43	4.00	–	8.14	0.34	0.63
	Total	**99.22**	**92.42**	**92.97**	**90.14**	**45.27**	**50.97**	**52.00**	**49.47**					**2.75**	**2.11**	**0.89**	**0.78**

Source: Indian Banks' Association, https://www.iba.org.in/excel/Small%20Finance%20Banks%202022-24.xlsx

BOX 6.1. PERFORMANCE ANALYSIS OF SELECT SFBs

The data for select SFBs provided below highlights their performance across various metrics. The related graphs are given in Figures 6.3 and 6.4.

AU Small Finance Bank[xxviii] stands out as the largest SFB by asset size and market capitalisation. By FY2024, AU SFB had a total business (deposits and advances) of ₹1,611.81 billion, comprising ₹871.82 billion in deposits and ₹739.99 billion in gross advances (Figure 6.3.). The bank operates over 629 branches, maintaining a CASA ratio of 33% as of March 31, 2024 (down from 38.4% in the previous year) and a gross NPA of 1.70% (Figure 6.4.). Its strengths lie in its diversified product portfolio, strong presence in vehicle finance and MSME lending, robust risk management, and substantial investments in digital technology and analytics. These factors have enabled AU SFB's successful transition from its NBFC roots to a full-service commercial bank, with an ROA of 1.54% in FY2024.

Equitas Small Finance Bank[xxix] has focused on building a diversified retail franchise. By FY2024, its total business stood at ₹670.93 billion, split equally between ₹361.29 billion in deposits and ₹309.64 billion in advances. Operating over 960 branches, Equitas has a CASA ratio of 32% and a gross NPA of 2.52%, an improvement from 2.60% in the previous year. The bank's strengths lie in its diversified loan book across microfinance, vehicle finance, MSE, and housing sectors, as well as its strong liability franchise supported by a high CASA ratio. Equitas has also placed significant emphasis on technology and digital banking, contributing to its consistent growth in both customer base and financial performance.

Ujjivan Small Finance Bank[xxx] has leveraged its microfinance expertise to build a pan-India presence. As of FY2024, Ujjivan had a total business of ₹612.42 billion, with ₹314.62 billion in deposits and ₹297.80 million in gross advances. Despite a gross NPA of 2.1%, Ujjivan's large customer base of around 8.9 plus million and its strong brand in the microfinance segment have contributed to its success. Investments in digital channels and analytics have further strengthened the bank's market position.

Jana Small Finance Bank[xxxii] has focused on serving urban and semi-urban low-income segments. As of FY2024, Jana had a total business of ₹456.82 billion, with ₹225.71 billion in deposits and ₹231.11 billion in gross advances. Although it recorded a gross NPA of 2.0%, Jana's strengths include its focus on urban financial inclusion, a strong presence in South and West India, and partnerships with FinTech players. These factors have positioned Jana SFB as a key player in the urban low-income segment.

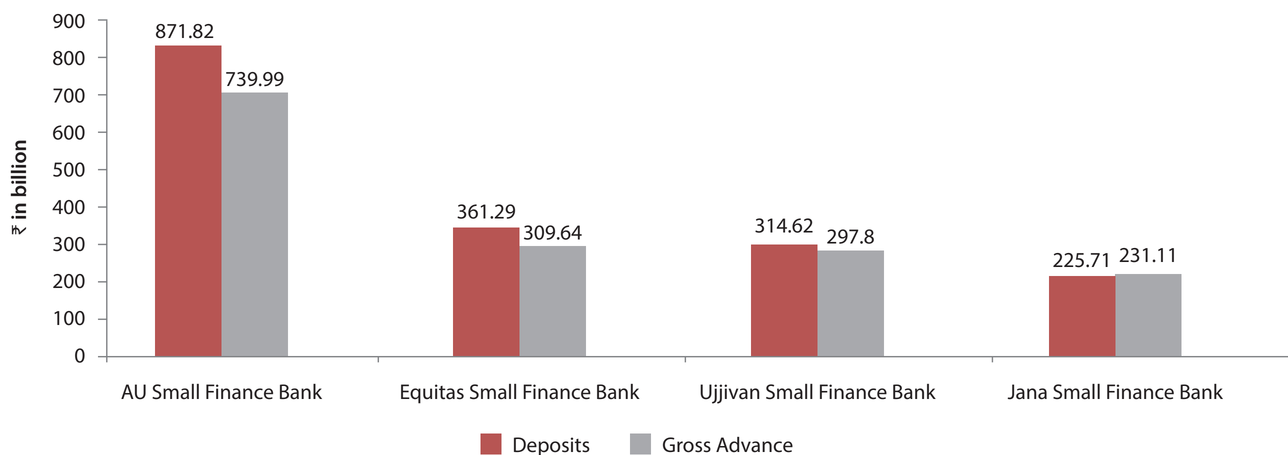


Figure 6.3. Performance Analysis of Select SFBs, Deposits, and Gross Advance as on March 31, 2024

Source: Data Compiled from AU Small Finance Bank, Equitas Small Finance Bank, Ujjivan Small Finance Bank and Jana Small Finance Bank Annual Reports (2023–24) and Indian Banks' Association.

[1] The CASA ratio, or Current Account Savings Account ratio, is a financial metric that reflects the proportion of a bank's total deposits that are held in low-cost current and savings accounts. This ratio is a key indicator of a bank's efficiency in raising funds, as current and savings accounts typically carry lower interest rates compared to other types of deposits, making them a cheaper source of non-subsidized funds (capital) for the bank.

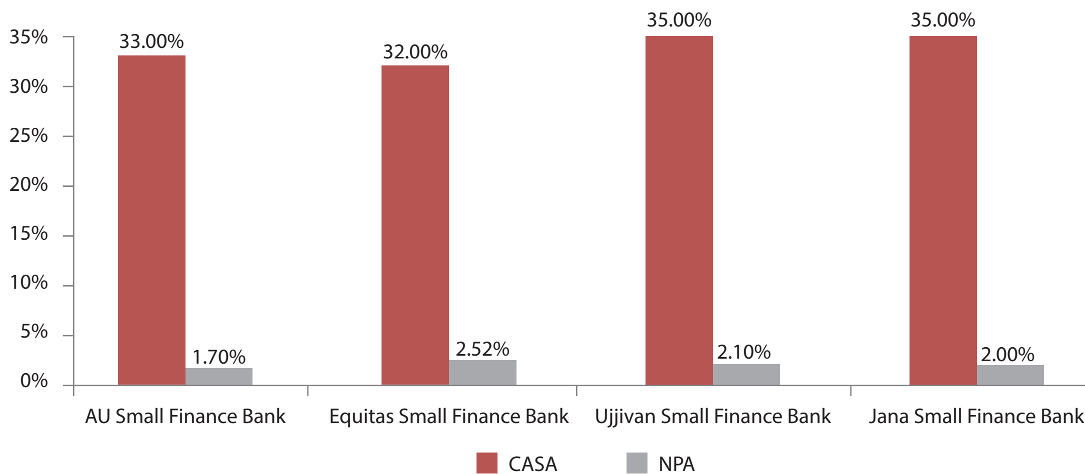


Figure 6.4. Performance Analysis of Select SFBs, CASA, and NPA Ratio as on March 31, 2024

Source: Data Compiled from AU Small Finance Bank, Equitas Small Finance Bank, Ujjivan Small Finance Bank and Jana Small Finance Bank Annual Reports 2023–24 and Indian Banks' Association.

Thus, SFBs in India have shown remarkable growth and resilience, contributing significantly to financial inclusion while expanding into more profitable sectors. They have managed to strengthen their balance sheets and improve profitability, but they face challenges in controlling operating costs and maintaining their mission of serving underserved populations. The strategic shift toward urban markets and diversification of lending portfolios suggests that SFBs are evolving beyond their original mandate, balancing financial inclusion with sustainable profitability. As they continue to grow, their ability to manage risks, control costs, and maintain a solid capital base will be crucial for their long-term success and their role in India's financial ecosystem.

6.3. STRENGTHS AND DISTINCTIVE COMPETENCIES OF SFBs

SFBs possess several unique strengths and competencies that have driven their rapid growth and success in furthering financial inclusion in India.

One of the key strengths of SFBs is their deep understanding of the target segments they serve. Most SFBs have roots in microfinance or specialised lending to underserved segments, giving them profound insight into the financial needs and behaviours of low-income households and micro-entrepreneurs. This understanding has enabled SFBs to design products and credit assessment models tailored to these segments, ensuring that their offerings are aligned with the needs of their customers. This is especially true for NBFC-turned-SFBs.

Another significant strength of SFBs is their extensive last-mile reach and distribution network. They have built robust networks of branches, banking correspondents, and micro-ATMs, allowing them to reach underserved areas effectively. Their low-cost operating models enable viable operations even in remote locations, giving them a distinct advantage in accessing untapped markets and reaching customers who have traditionally been excluded from formal financial services. This, again, is typical of NBFC-turned-SFBs.

SFBs also follow a relationship-based banking model, characterised by frequent interactions between field officers and customers. This high-touch approach builds trust, ensures timely repayments, and facilitates cross-selling. The model is particularly effective for first-time borrowers with limited credit history, as it helps build a strong bond between the bank and its customers. This, too, owes its origins to the hardcore microfinance lending that many of these SFBs had initially been involved with.

Innovative product design is another hallmark of SFBs. They have created products specifically tailored to the needs of their target segments, such as daily collection micro-loans, flexible savings accounts, and micro-insurance. This product suite addresses the specific financial needs and use cases of underbanked customers, ensuring that SFBs effectively meet the demands of their clientele. This aspect also has its roots in microfinance, where institutions, since the 1990s, have constantly innovated products and processes to serve their target clients.

That said, in Mike Porter's terminology (1980), SFBs have been quick to adapt and embrace technology-driven operations to ensure cost leadership and differentiation at the grassroots level. Technology has also become a significant driver of SFBs' success. Specifically, SFBs have invested in cutting-edge technology platforms to enable paperless onboarding, real-time credit decisions, and low-cost servicing. Mobile and tablet-based solutions allow SFBs to bring banking services directly to customers' doorsteps, making financial services more accessible and convenient for underserved populations.

Data-driven credit underwriting is another strength of SFBs. In the absence of formal credit histories for many customers, SFBs have developed alternative credit assessment models using a combination of demographic, financial, behavioural and other data. Advanced analytics and machine learning algorithms enable these banks to make sound lending decisions, even for thin-file or no-file customers with limited or no formal credit history.

The workforce of SFBs is another critical strength. Many SFBs have invested significantly in training their staff, who often come from socio-economic backgrounds similar to those of their customers. This creates a workforce with phenomenal social acceptability and a deep motivation aligned with the mission of financial inclusion, ensuring that SFBs effectively serve their target segments.

Like prospectors in the Miles and Snow (1978) typology, SFBs are also characterised by their agility and innovation. Being smaller and more focused organisations, SFBs can innovate and launch new products and services much faster than larger banks. This agility has kept SFBs at the forefront of innovations in micro-banking, allowing them to continuously adapt to the evolving needs of their customers. In fact, SFBs are drivers of change in their core markets, often working under the dictum that the world of tomorrow is going to be very different from that of today.

The regulatory framework for SFBs provides another strategic advantage. The differentiated regulatory framework, including lower initial capital requirements and relaxed branch expansion norms, has enabled SFBs to scale up their operations rapidly. The PSL target of 75% aligns well with their core focus areas, further supporting their mission of financial inclusion.

Finally, partnerships and collaborations have played a significant role in the success of SFBs. These banks have actively partnered with FinTech companies, payment banks, and other stakeholders in the financial ecosystem, allowing them to offer a broader range of services and reach new customer segments cost-effectively.

6.4. COMPARATIVE AND COMPETITIVE ADVANTAGES OF SFBs

SFBs enjoy several comparative and competitive advantages over other players in the financial services landscape, positioning them uniquely to serve underserved segments effectively.

One of the key sources of comparative advantage for SFBs is cost. Their cost leadership in serving low-income segments is deeply rooted in their core mission. In fact, SFBs have developed low-cost operating models that make it viable to serve customers with small ticket sizes. While their cost-to-income ratios are higher than those of universal banks, they are significantly lower than traditional microfinance institutions, enabling SFBs to operate profitably in low-income segments.

SFBs also have a better understanding of the informal sector compared to large commercial banks. Their superior ability to assess the creditworthiness of customers in the informal sector, who often have limited documentation and credit histories, allow SFBs to tap into a large, underserved market effectively.

The focus on micro and small enterprise lending also allows SFBs to earn higher yields on their loan portfolios compared to universal banks. This higher yield on advances is a significant competitive advantage, contributing to the profitability and growth of SFBs.

Furthermore, given their smaller base and focus on underserved segments, SFBs have the potential to grow at a much faster pace than established banks. By and large, individually and collectively, SFBs[xxxvi] have consistently delivered 20–30% annual growth in assets and deposits, highlighting their ability to capitalise on the unmet demand for formal financial services in underserved markets.

Strong customer loyalty is another competitive advantage of SFBs. By focusing on segments neglected by mainstream banks, SFBs have built strong customer relationships and brand loyalty. As noted earlier, this aspect is also amplified by the fact that SFB staff often belong to the same socio-economic milieu as their clients. This not only gives them social acceptability but also enhances the presence of mutually reinforcing relationships. Indeed, all these factors give SFBs a massive advantage in cross-selling products and retaining customers over the long term.

An interest observation is in order here. SFBs also appear to benefit from regulatory arbitrage and suppleness in some areas. While they face higher priority sector targets, they also enjoy certain regulatory benefits, such as relaxed branch licensing norms and lower statutory pre-emptions during the initial years of operation. This regulatory flexibility has allowed SFBs to expand rapidly and establish a strong presence in their target markets.

In niche segments like microfinance, micro-enterprise lending, and rural banking, SFBs have drawn upon their institutional memory to develop highly specialised skills and processes that are difficult for universal banks to copy and replicate quickly. This niche expertise gives SFBs a significant advantage in serving these segments effectively.

Finally, the high growth and profitability metrics of SFBs have made them attractive to equity investors. Many SFBs have successfully raised capital from public markets at high valuations, reflecting the confidence of investors in the SFBs as an institutional class, their governance, and, most importantly, their overall potential for sustained growth.

6.5. LESSONS FROM OPERATIONS OF SFBs

The operations of SFBs in India offer several vital lessons, particularly in the context of financial inclusion, business strategy, governance, and operational resilience. Here's a detailed summary of these lessons.

6.5.1. Deep Understanding of Target Segments Is Critical for Success

- **Lesson:** SFBs have demonstrated that a deep understanding of the financial needs, preferences, and behaviours of underserved segments—such as low-income households, small businesses, and micro-entrepreneurs—is critical to their success. This nuanced understanding allows them to offer tailored products, such as micro-loans, savings accounts with low minimum balances, and flexible repayment options, which resonate strongly with these customers. By aligning their offerings with the specific needs of these segments, SFBs ensure greater relevance, driving both adoption and customer loyalty.
- **Strategic implication:** Financial institutions targeting niche or underserved markets must invest time and resources in thoroughly understanding the specific needs and financial habits of these segments. This granular knowledge enables the creation of highly relevant products and delivery mechanisms/processes, contributing to higher adoption rates and greater customer satisfaction.

6.5.2. Last-Mile Reach and Distribution are Crucial for Financial Inclusion

- **Lesson:** SFBs have focused on creating a far and wide-reaching distribution network that penetrates underserved semi-urban and rural areas—markets often overlooked by larger (universal) banks. By setting up low-cost, high-impact distribution models, such as mobile branches, agent networks, and digital outreach via mobile banking, they have succeeded in providing access to financial services in regions with limited or no traditional banking infrastructure. This model has been crucial for driving financial inclusion.
- **Implication:** Financial institutions aiming to expand into underserved or remote areas should explore innovative, cost-effective distribution channels to enhance their last-mile reach. Leveraging mobile technologies, agent banking models, and partnerships with local organisations can help overcome the limitations of traditional branch-based models.

6.5.3. Technology is an Enabler of Cost Leadership and Differentiation

- **Lesson:** Technology has been a game-changer for SFBs, enabling them to serve large customer bases efficiently despite the relatively small transaction sizes typical of low-income customers. Through digital onboarding, mobile banking, AI-driven credit scoring models, and automated loan disbursements, SFBs have reduced operational costs, streamlined processes, and offered real-time services. These technological innovations also allow them to engage with customers who may not have easy access to physical branches, enhancing financial inclusion.
- **Implication:** Continuous investment in technology is crucial for financial institutions to remain competitive, especially when serving low-income or remote customer segments. Technologies like AI, machine learning, and digital platforms help optimise operational efficiency, reduce costs, and enhance customer engagement by making financial services accessible anywhere, anytime.

6.5.4. A Relationship-based Model Helps Build Trust

- **Lesson:** One of the most notable strategies employed by SFBs is their reliance on a relationship-based banking model. Field officers, who act as the main point of contact with customers, build trust through frequent interactions. This approach is especially effective with first-time borrowers and those new to formal banking. These officers not only facilitate loan disbursement and repayment but also offer financial advice, contributing to customer retention and cross-selling opportunities.
- **Implication:** Building trust through personal relationships is particularly important in markets where formal financial institutions lack a strong foothold or where customers are unfamiliar with banking processes. Financial institutions can benefit from investing in relationship-based models, especially when entering markets where trust is a key barrier to adoption and where digital and process literacy with regard to banking/finance are low.

6.5.5. Differentiated Product Design Promotes Sustained Financial Inclusion

- **Lesson:** SFBs have been pioneers in designing products that cater to the unique challenges faced by their target customers. For instance, they offer micro-loans with flexible repayment schedules, savings products designed for goal-based savings, and tailored insurance products. These products address the financial irregularities often experienced by low-income individuals and micro-entrepreneurs, ensuring high usability and adoption. Such customised product design plays a critical role in enhancing financial inclusion of low-income people.
- **Implication:** Customised product innovation is critical for serving underserved markets. Financial institutions should not rely solely on traditional product offerings but instead create solutions that address the specific financial needs of their customers. This may involve developing flexible loan products, tailored savings plans, and accessible insurance products that consider the cash flow realities of low-income customers. This approach can and will help sustain financial inclusion at the grassroots level.

6.5.6. Operational Model Must Be Resilient to Counter Economic Shocks

- **Lesson:** The COVID-19 pandemic and other economic disruptions have tested the resilience of SFBs. Those that had diversified their loan portfolios, invested in risk management, and quickly transitioned to digital channels were better equipped to weather the storm. By optimising costs, adopting digital payment solutions, and maintaining contact with customers remotely, SFBs showcased their ability to continue operations even in challenging circumstances.
- **Implication:** Building a resilient operational model that can adapt to economic changes and crises is crucial for the long-term sustainability of financial institutions. This includes diversifying revenue streams, having contingency plans for unforeseen disruptions, investing in technologies that allow for operational flexibility, and, most importantly, implementing a 360-degree risk management strategy to tackle low-frequency, high-impact risks like COVID-19.

6.5.7. Enabling Regulatory Support is Very Crucial

- **Lesson:** Regulatory frameworks have played a crucial role in shaping the success of SFBs. The RBI created a supportive environment by implementing relaxed branch norms and offering lower capital requirements during their initial years of operation. This allowed SFBs to focus on expanding financial inclusion while adhering to core regulatory guidelines. Such regulatory support has been essential in fostering the growth and stability of SFBs.
- **Implication:** A supportive, flexible and enabling regulatory framework is vital for fostering innovation and growth, especially in institutions focused on niche markets like financial inclusion. Governments and regulators can spur financial inclusion by creating policies that balance regulatory oversight with the flexibility needed for institutions to grow, scale, and reach large numbers of marginalised people.

6.5.8. Strategic Diversification is Critical to Meet the Challenges of Scaling

- **Lesson:** As SFBs scale their operations, they face new challenges such as maintaining asset quality, managing operational risks, and diversifying their product offerings. Some SFBs have successfully addressed these challenges by expanding into secured lending, developing new products like housing loans, and entering new geographic markets. This diversification not only reduces risks but also enhances profitability.
- **Implication:** For financial institutions to sustain long-term growth, strategic diversification is

essential. This could involve broadening the product range, entering new markets, and developing robust risk management frameworks to handle the complexities that arise with scaling.

6.5.9. Creating a Skilled Workforce Pool Attuned to the Financial Inclusion Mission is Critical

- **Lesson:** SFBs have recognised that attracting, training, and retaining a motivated workforce aligned with the mission of financial inclusion is crucial to their success. Staff members who understand the socio-economic context of their customers are better equipped to serve them effectively, fostering stronger connections with the customer base.
- **Implication:** Investing in talent development is critical for institutions operating in underserved markets. Ensuring that the workforce is aligned with the organisation's mission and trained in customer-centric approaches helps create a motivated and capable team that drives both business growth and customer satisfaction.

6.5.10. Customer Education and Financial Literacy Are Crucial for Long-Term Success

- **Lesson:** SFBs have integrated financial literacy programs into their operations, recognising that educating customers about products and responsible financial behaviour is critical to long-term success. These initiatives have helped customers understand how to use financial products effectively, reduced credit risk, and increased overall engagement.
- **Implication:** Financial literacy should be an integral part of any institution's strategy, particularly when serving low-income or first-time borrowers. Educating customers not only reduces risks for the institution but also empowers them to make informed financial decisions, leading to more responsible borrowing and greater product usage.

These lessons collectively underscore the importance of a customer-centric approach, operational resilience, strategic innovation, and regulatory support in the successful operation and growth of SFBs, particularly in advancing financial inclusion.

6.6. LEARNINGS ON CHALLENGES FACED BY SFBs

Despite their strengths and rapid growth, SFBs face several challenges (given in Table 6.3) that must be addressed to ensure their long-term sustainability.

Table 6.3. Learnings on Challenges Faced by Small Finance Banks (SFBs)

Challenge	Description	Impact	Solutions	Expected Outcomes
Asset Quality Vulnerability	SFBs have a high exposure to unsecured and micro-lending, making them particularly vulnerable to economic shocks, such as those experienced during the COVID-19 pandemic.	This vulnerability can lead to significant asset quality deterioration, increased NPAs, and financial instability.	Diversify loan portfolios by increasing secured lending options, such as affordable housing loans, gold loans, and asset-backed business loans.	Improved portfolio stability, reduced NPAs, and enhanced resilience to economic fluctuations.
Competition in Deposit Mobilisation	SFBs face intense competition from established banks, especially in urban areas, for low-cost deposits.	Difficulty building a stable liability franchise, leading to reliance on higher-cost deposits and a lower CASA ratio.	Develop innovative deposit products and digital savings tools and enhance customer engagement. Partner with FinTech companies to expand reach.	Increased CASA ratios, more stable deposit base, and enhanced competitiveness in urban markets.
Operational Risks	High volumes of small-ticket transactions increase operational complexity risks of errors and fraud.	Operational inefficiencies, higher risk of errors or fraud, and increased operational costs.	Invest in robust systems, controls and comprehensive staff training to improve efficiency and minimise operational risks.	Enhanced operational efficiency, reduced fraud risks, and lower costs.

Challenge	Description	Impact	Solutions	Expected Outcomes
Technology Investment Costs	Continuous technology investments are necessary for competitiveness but can strain short-term profitability for smaller SFBs.	Short-term strain on profitability, especially for smaller SFBs, potentially delaying growth initiatives.	Prioritise technology investments that offer long-term efficiency gains and customer satisfaction. Partner with tech providers to share costs.	Sustained competitiveness through tech advancements and improved long-term profitability.
Talent Attraction and Retention	SFBs face challenges in attracting and retaining skilled professionals, especially in tech and risk management, due to competition from larger banks and fintechs.	Difficulty maintaining a skilled workforce, slowing innovation and increasing operational risks.	Build a strong employer brand through competitive compensation packages and career development opportunities. Offer specialised training for retention.	Improved talent acquisition and retention, fostering innovation and operational excellence.
Geographical Concentration	Many SFBs have high exposure to specific regions, increasing their vulnerability to localised economic downturns.	Increased risk from regional economic fluctuations, leading to financial instability and limited growth opportunities.	Gradually expand into new geographies using a hub-and-spoke model to diversify risk. Invest in market research to target underserved regions.	Reduced concentration risk and diversified revenue streams from new markets.
Product Diversification	Balancing secured and unsecured lending remains a challenge, with potential over-reliance on unsecured loans.	Increased risk exposure from an imbalanced loan portfolio, leading to financial instability.	Promote secured lending (e.g., vehicle finance and SME loans) and innovate new products tailored to evolving customer needs.	Balanced loan portfolio, reduced risk, and increased customer satisfaction through innovative products.
Regulatory Compliance Costs	Stringent regulatory requirements add complexity and operational costs, placing additional burdens on SFBs.	Higher operational costs, potential compliance risks, and strained resources, particularly for smaller SFBs.	Streamline compliance processes using automation and technology (RegTech). Engage regularly with regulators to stay ahead of requirements.	Lower compliance costs, improved regulatory adherence, and more efficient operations.
Brand Building	Creating brand awareness and trust, particularly in urban areas, requires sustained investment in marketing and customer experience.	Difficulty competing with established banks, leading to slower customer acquisition and retention in new markets.	Invest in targeted marketing and customer experience programs. Leverage digital channels and social media to build brand presence.	Stronger brand recognition, increased customer acquisition, and retention in competitive markets.
Cybersecurity Risks	Increased use of digital channels exposes SFBs to data breaches and cyber threats such as direct denial of service (DDOS), ransomware, malware, Man-in-the-middle and Zero-day attacks.	Potential data breaches, loss of customer trust, financial losses, and regulatory penalties.	Implement robust cybersecurity measures, conduct regular audits, and train staff. Use encryption and multi-factor authentication to protect customer data. Specific strategies to cope with Direct denial of service (DDOS), Ransomware, Malware, Man-in-the-middle and Zero-day attacks must be undertaken.	Enhanced cybersecurity, reduced data breach risks, and maintained customer trust and regulatory compliance.

The above table provides a comprehensive list of learnings with regard to the strategic and operational challenges faced by SFBs, along with detailed descriptions, impacts, solutions, and expected outcomes from implementing these solutions.

6.7. STRATEGIC CHOICES FOR SFBs IN INDIA

As SFBs grow and evolve, they must navigate several strategic choices to ensure long-term success:

1. **Balancing financial inclusion with profitability:** SFBs must balance their mission of financial inclusion with the pursuit of profitability. As they expand into urban markets, they risk drifting from their core purpose of serving underserved rural populations. Maintaining this balance is critical to preserving their unique value proposition.
2. **Managing asset quality:** With growing loan portfolios, particularly in higher-risk segments like MSMEs, SFBs must focus on robust credit risk management to avoid rising NPAs. Lessons from the pandemic highlight the importance of strengthening loan monitoring and preparing for future economic disruptions.
3. **Cost management and operational efficiency:** As SFBs scale operations, they face rising costs from investments in technology and infrastructure. Enhancing operational efficiency while controlling expenses is vital, especially as they compete in urban markets.
4. **Regulatory compliance and capital requirements:** Meeting regulatory standards, particularly capital adequacy ratios, is essential for growth. Smaller SFBs may find it challenging to raise sufficient capital, making strong governance and compliance systems a strategic necessity as they expand.
5. **Competition from traditional banks and FinTechs:** SFBs face increasing competition from both traditional banks and FinTechs offering low-cost digital services. To stay competitive, they must capitalise on their local market expertise, exceptional customer service, and differentiated products.
6. **Technological integration and cybersecurity:** Embracing digital transformation is key to future growth. SFBs must prioritise secure, user-friendly technology platforms while simultaneously investing in cybersecurity to protect against rising digital threats.
7. **Economic and market volatility:** The vulnerability of SFBs to economic downturns, especially due to their focus on small borrowers, requires robust risk management strategies. Managing the impact of market volatility, inflation, and fluctuating interest rates is essential to safeguard profitability.
8. **Customer trust and retention:** Building and maintaining trust among rural and low-income customers, many of whom are new to formal banking, is critical. Transparent pricing, superior customer service, and effective grievance redressal mechanisms will ensure long-term customer loyalty.

By making these strategic choices, SFBs can continue their growth trajectory, stay aligned with their mission of financial inclusion and thrive in an increasingly competitive and digital financial landscape.

6.8. SUMMARY DISCUSSION: SFBs IN INDIA (FY 2021–2024)

To summarise, the period from FY 2021 to 2024 saw substantial growth and development in the SFB sector in India (Table 6.4.). This positioned these banks as key drivers of financial inclusion and growth in underserved regions. Several key trends emerged during this period, reflecting their growing importance in India's financial landscape.

As evident from Table 6.4, robust business growth was a standout feature, as SFBs experienced a significant increase in deposits, advances, and investments. Deposits more than doubled, growing from ₹1,094.72 billion in 2021 to ₹2,508.97 billion by 2024—a growth of 129%.[xxxvii] Advances also saw a sharp increase of 108%, while investments grew by 142%. This growth reflects the banks' success in capturing market share, especially among underserved populations, and highlights the increasing trust customers place in them for their financial needs. Another key development was the improvement in asset quality. Gross NPAs, which peaked at ₹106.83 billion in 2022, were significantly reduced to ₹55.90 billion by 2024,[xxxviii] indicating improved credit risk management and recovery processes. The reduction in the Net NPA ratio, from 2.75% to 0.78%, further underscores the sector's ability to manage credit risk effectively. These improvements are critical for the sustainability of SFBs, ensuring that they can grow without compromising the quality of their loan portfolios.

Profitability in the SFB sector also surged during this period. Net profits rose by 209%, from ₹20.14 billion in 2021 to ₹62.19 billion in 2024.[xxxix] This impressive increase in profitability is a testament

Table 6.4. 12 Small Finance Banks – Deposits/Investments/Advances As on March 31(₹ in billion)

S. No.	Small Finance Banks	Deposits				Investments				Advances				Gross NPA				Net Profit			
		2021	2022	2023	2024	2021	2022	2023	2024	2021	2022	2023	2024	2021	2022	2023	2024	2021	2022	2023	2024
1	Au Small Finance Bank Ltd.	359.79	525.85	693.65	871.82	108.15	153.07	200.72	271.33	346.09	460.95	584.22	731.63	15.03	9.24	9.81	12.37	11.71	11.31	15.35	15.35
2	Capital Small Finance Bank Ltd.	52.21	60.46	65.61	74.78	12.12	13.57	14.89	17.06	37.27	46.35	54.29	60.75	0.78	1.17	1.53	1.70	0.40	0.62	1.12	1.12
3	Equitas Small Finance Bank Ltd.	163.92	189.51	253.81	361.29	37.05	44.50	66.65	90.65	168.48	193.74	257.99	309.64	6.43	8.37	7.24	8.21	3.84	2.81	7.99	7.99
4	ESAF Small Finance Bank Ltd.	89.99	128.15	146.66	198.68	19.32	40.70	48.89	55.41	81.68	116.37	139.24	182.93	5.64	9.50	3.52	8.93	1.04	0.55	4.25	4.25
5	Fincare Small Finance Bank Ltd.	53.19	64.56	80.33	105.22	12.79	21.52	25.23	31.85	53.01	70.37	87.02	123.58	3.54	5.73	2.88	2.00	1.13	0.09	3.96	3.96
6	Jana Small Finance Bank Ltd.	123.86	135.36	163.34	225.71	46.98	50.65	52.21	67.38	116.12	130.07	177.60	231.11	8.58	7.57	7.09	4.94	0.84	0.06	6.69	6.69
7	North East Small Finance Bank Ltd.	12.77	15.29	20.40	15.20	3.14	2.77	3.48	5.50	16.55	16.27	16.03	8.02	1.92	1.90	3.47	0.99	0.07	–1.23	-1.53	–1.53
8	Suryoday Small Finance Bank Ltd.	32.56	38.54	51.67	77.77	18.74	20.58	25.70	25.99	39.83	47.51	60.15	80.78	3.94	5.97	1.91	2.42	0.12	–0.92	2.16	2.16
9	Ujjivan Small Finance Bank Ltd.	131.36	182.92	255.38	314.62	25.16	41.53	85.10	97.66	144.94	163.03	212.90	268.83	10.71	12.84	6.31	6.13	0.08	–4.15	12.81	12.81
10	Utkarsh Small Finance Bank Ltd.	75.08	100.74	137.10	174.73	23.14	23.48	28.59	36.79	82.17	102.28	130.69	163.65	3.15	6.48	4.32	4.18	0.93	0.62	4.98	4.98
11	Shivalik Small Finance Bank Ltd. *	–	15.93	18.94	24.10	–	4.25	5.33	4.96	–	11.09	14.07	20.95	–	0.33	0.33	0.43	–	0.01	0.02	0.02
12	Unity Small Finance Bank Ltd. #	–	38.22	26.85	65.05	–	27.71	24.36	38.25	–	24.19	44.68	79.61	–	37.73	37.67	3.60	–	–1.50	4.39	4.39
	Total	**1,094.72**	**1,495.53**	**1,913.72**	**2,508.97**	**306.59**	**444.33**	**581.15**	**742.83**	**1,086.14**	**1,382.22**	**1,778.87**	**2,261.48**	**59.71**	**106.83**	**86.08**	**55.90**	**20.14**	**8.27**	**41.65**	**62.19**

* Shivalik Small Finance Bank commenced its business operations on 26.04.2021 post the completion of its transition to Small Finance Bank in 2020 on receiving in-principle approval from RBI.
# Unity SFB is the 12th Small Finance Bank and opened its first branch in Mumbai on 01.11.2021 after its amalgamation with Punjab & Maharashtra Co-operative Bank Ltd.

Source: Indian Banks' Association, https://www.iba.org.in/excel/Small%20Finance%20Banks%202022-24.xlsx

to improved operational efficiency, better asset management, and the successful diversification of income streams. By and large, ROA also showed improvements across the sector, suggesting that SFBs have optimised their business models for better financial performance. Furthermore, as noted from the table above, stable credit-deposit and investment-deposit ratios during the period reflected a balanced approach to asset management. The CDR remained steady at just over 90% in 2024 (see Table 6.5.),[xl] while the investment-deposit ratio saw a slight increase, indicating prudent lending and investment strategies. This balance between lending and investment activities ensured that SFBs maintained financial stability while expanding their services.

Operationally, SFBs saw mixed results in terms of efficiency. Operating expenses as a percentage of total expenses increased to 49.47% in 2024,[xli] reflecting investments in technology, infrastructure, and workforce expansion. Despite this rise compared to FY 2021, business per employee showed an upward trend, indicating that these investments are leading to increased productivity and long-term benefits in terms of operational efficiency. Finally, income diversification emerged as a significant trend, with other income growing by 101% between 2021 and 2024. This shift highlights SFBs' efforts to move beyond traditional lending operations and generate revenue from non-interest sources such as fees and commissions, positioning them as more broad-based financial institutions.

Thus, from 2021 to 2024, SFBs in India demonstrated strong growth in their core business areas, improving asset quality and enhancing profitability. They expanded their reach, diversifying income streams, and fulfilled their role in promoting financial inclusion. By leveraging technology, innovative product design, and a deep understanding of underserved customer segments, SFBs have been bridging critical gaps in India's financial ecosystem and showcasing the viability of specialised banking models. Looking ahead, SFBs appear well-positioned to play a pivotal role in India's financial sector, aligning with the government's financial inclusion goals. Despite initiallyfacing challenges such as managing asset quality and building a stable deposit base, their resilience and innovation have gained investor confidence. The success of SFBs offers valuable lessons for other emerging markets, proving that specialised institutions can effectively serve niche segments. As they evolve, SFBs are set to shape the future of inclusive banking in India in more ways than one.

In conclusion, the future of SFBs in India appears promising, with several key trends set to shape their growth. As the sector matures, consolidation through mergers and acquisitions is expected, with some well-performing SFBs transitioning into universal banks. Technology adoption, particularly in areas like artificial intelligence, blockchain, and cloud computing, will drive operational efficiency and enhance customer experiences. SFBs are likely to expand their focus on urban financial inclusion while deepening partnerships with FinTech companies to innovate and grow. Additionally, expanding product offerings into areas like wealth management and insurance, along with the use of data analytics, will enhance customer relationships and risk management. As sustainability becomes a key focus, many SFBs will likely increase their emphasis on green finance. With increased regulatory oversight and the need for continued capital raising, SFBs are poised to play an even greater role in India's financial landscape in the coming years.

Table 6.5. 12 Small Finance Banks – Total Assets, Net NPA, Interest Income, Other Income, and Total Income As on March 31 (₹ in billion)

S. No.	Small Finance Banks	Total Assets				Net NPA				Interest Income				Other Income				Total Income			
		2021	2022	2023	2024	2021	2022	2023	2024	2021	2022	2023	2024	2021	2022	2023	2024	2021	2022	2023	2024
1	Au Small Finance Bank Ltd.	515.91	690.78	902.16	1,094.26	7.55	2.72	2.86	4.01	49.50	59.22	82.05	105.55	14.21	9.94	10.34	17.46	63.71	69.16	92.39	123.01
2	Capital Small Finance Bank Ltd.	63.71	71.54	79.91	92.95	0.42	0.63	0.74	0.85	5.11	5.78	6.76	7.94	0.46	0.54	0.49	0.68	5.57	6.32	7.25	8.62
3	Equitas Small Finance Bank Ltd.	247.08	269.48	349.58	453.04	2.66	4.79	3.12	3.61	31.94	34.60	41.62	54.86	4.18	5.38	6.70	7.99	36.12	39.98	48.32	62.85
4	ESAF Small Finance Bank Ltd.	123.39	177.08	202.24	260.87	3.17	4.56	1.58	4.14	16.41	19.40	28.54	38.18	1.26	2.08	2.88	4.42	17.67	21.48	31.42	42.60
5	Fincare Small Finance Bank Ltd.	79.68	109.02	124.68	172.67	1.48	2.50	1.13	0.78	12.51	14.49	17.44	26.71	1.26	1.96	2.27	3.43	13.77	16.45	19.71	30.14
6	Jana Small Finance Bank Ltd.	190.91	201.89	256.44	327.10	6.19	5.13	4.68	1.30	24.98	27.27	30.75	40.13	2.35	3.24	6.25	6.71	27.33	30.51	37.00	46.84
7	North East Small Finance Bank Ltd.	22.58	23.52	27.10	16.87	1.12	0.57	0.27	0.67	3.14	3.14	2.98	1.96	0.18	0.14	0.38	0.55	3.32	3.28	3.36	2.51
8	Suryoday Small Finance Bank Ltd.	67.12	81.80	98.61	123.78	1.88	2.83	0.93	0.70	7.76	9.42	11.84	15.89	0.76	0.94	0.97	2.19	8.52	10.36	12.81	18.08
9	Ujjivan Small Finance Bank Ltd.	203.80	236.12	333.17	404.22	4.25	1.00	0.09	0.76	28.06	28.13	41.65	56.77	3.02	3.60	5.89	7.87	31.08	31.73	47.54	64.64
10	Utkarsh Small Finance Bank Ltd.	121.38	150.64	191.18	239.03	1.09	2.36	0.51	0.04	15.81	18.49	25.05	31.78	1.25	1.85	2.99	4.00	17.06	20.34	28.04	35.78
11	Shivalik Small Finance Bank Ltd. *	–	18.90	22.50	30.32	–	0.15	0.16	0.18	–	1.31	2.04	2.81	–	0.15	0.15	0.29	–	1.46	2.19	3.09
12	Unity Small Finance Bank Ltd. #	–	108.11	87.61	137.74	–	1.97	0.15	0.50	–	1.54	7.35	13.88	–	0.00	0.69	2.44	–	1.54	8.03	16.32
	Total	**1,635.57**	**2,138.86**	**2,675.17**	**3,352.85**	**29.82**	**29.22**	**16.22**	**17.54**	**195.22**	**222.79**	**298.07**	**396.46**	**28.93**	**29.82**	**40.00**	**58.03**	**224.15**	**252.61**	**338.07**	**454.49**

* Shivalik Small Finance Bank commenced its business operations on 26.04.2021 post the completion of its transition to Small Finance Bank in 2020 on receiving in-principle approval from RBI.
# Unity SFB is the 12th Small Finance Bank and opened its first branch in Mumbai on 01.11.2021 after its amalgamation with Punjab & Maharashtra Co-operative Bank Ltd.

Source: Indian Banks' Association, https://www.iba.org.in/excel/Small%20Finance%20Banks%202022-24.xlsx

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Climate Adaptation and Mitigation Finance for Low-Income Populations in India: A Comprehensive Analysis (2014-2024)

Ramesh Srivatsava Arunachalam

7

7.1. INTRODUCTION

Climate change is undeniably one of the most pressing challenges of the 21st century, with widespread and profound implications for ecosystems, economies, and societies across the globe. In India, a country characterised by its vast geographical diversity, rapidly growing population, and burgeoning economy, the impacts of climate change are particularly complex and multifaceted. India's vulnerability is heightened by its socio-economic landscape, where a significant portion of the population continues to grapple with poverty and limited access to essential resources. These challenges are further compounded by the country's dependency on climate-sensitive sectors, such as agriculture and fisheries, which form the backbone of livelihoods for millions of low-income families.

In this context, climate finance has become an essential tool in India's efforts to mitigate and adapt to the effects of climate change, particularly for its most vulnerable communities. These communities, often residing in areas highly susceptible to climate risks and relying heavily on natural resources for survival, are on the frontlines of climate-related hazards but possess the least capacity to adapt. As a result, they bear the brunt of climate-induced disasters such as floods, droughts, and cyclones, which not only threaten their livelihoods but also undermine their prospects for sustainable development.

The importance of this analysis is underscored by recent statistics. As of 2024, approximately 22.9% of India's population, or about 332 million people, are either in severe multidimensional poverty (4.2%) or are vulnerable to it (18.7%). These low-income communities are disproportionately affected by climate change for several interrelated factors. Firstly, they rely heavily on natural resources and climate-sensitive sectors for livelihoods. Secondly, they have limited access to financial and technological resources needed to cope with climate shocks. Thirdly, many reside in high-risk areas prone to flooding, droughts, and extreme heat, further exacerbating their vulnerability. Finally, inadequate infrastructure and basic services in these areas make it even more difficult for these communities to withstand and recover from climate-related events.

The vulnerability of India's poor to climate change is further intensified by rapid urbanisation, with many low-income individuals migrating to cities in search of better opportunities. However, these urban migrants often end up settling in informal settlements that are highly vulnerable to climate impacts, such as flooding and heatwaves, thereby compounding their exposure to climate risks. In this scenario, directing climate finance towards these low-income communities is crucial for several reasons, as outlined in Box 7.1.

Accordingly, this chapter embarks on an in-depth exploration of the landscape of climate finance for low-income populations in India during the decade spanning from 2014 to 2024. The analysis examines the diverse approaches, innovative mechanisms, and evolving policies that have shaped the accessibility

BOX 7.1. WHY CLIMATE FINANCE IS NECESSARY FOR LOW-INCOME COMMUNITIES

1. **Equity and Climate Justice:** Those who are least responsible for climate change often suffer its most severe consequences. Targeted climate finance helps address this inequity by channelling resources to the most vulnerable, thereby empowering these communities to participate actively in climate action and improve their resilience.
2. **Effectiveness and Efficiency:** Investing in climate resilience for the most vulnerable communities can yield substantial returns in terms of avoided losses and damages. Studies have consistently shown that every dollar invested in adaptation can generate $2 to $10 in net economic benefits, making it a highly cost-effective strategy for enhancing resilience.[3]
3. **Economic Development and Poverty Reduction:** Well-designed climate finance initiatives can significantly enhance economic opportunities for vulnerable communities by creating new, climate-resilient livelihoods and improving resource efficiency. These initiatives not only help lift communities out of poverty but also promote sustainable development.
4. **Scalability and Replication:** The scalability and replication of successful climate finance models are crucial. India's diverse socio-economic and environmental contexts provide a unique laboratory for developing climate finance approaches that can be scaled up and replicated in other developing countries, thereby maximising their global impact.
5. **Meeting National and Global Goals:** Targeted climate finance plays a vital role in supporting India's commitments under the Paris Agreement and aligns with the country's National Action Plan on Climate Change (NAPCC).[4] Additionally, it contributes to the achievement of multiple Sustainable Development Goals (SDGs), including SDG 1 (No Poverty),[5] SDG 13 (Climate Action),[6] and SDG 10 (Reduced Inequalities).[7]
6. **Social Cohesion and Stability:** Addressing the climate-related needs of the most vulnerable can help prevent potential conflicts over resources and promote social harmony. By reducing the adverse impacts of climate change on low-income communities, such initiatives foster greater stability and strengthen social cohesion.

and effectiveness of climate finance for India's poor. By focusing on both adaptation and mitigation finance, it offers a holistic perspective on how India has addressed the dual challenges of building resilience to climate impacts and transitioning towards a low-carbon development pathway, all while prioritising the needs of its most vulnerable citizens. The chapter also delves into major government initiatives, international funding mechanisms, innovative financing models, and the roles of key institutions in mobilising and deploying climate finance. Finally, the analysis reflects on the successes, challenges, and lessons learnt over the past decade.

7.2. UNDERSTANDING CLIMATE FINANCE IN THE INDIAN CONTEXT

Before delving into the specifics of adaptation and mitigation finance, it is essential to establish a clear understanding of what climate finance entails within the Indian context. This section defines key terms, outlines the unique aspects of India's climate vulnerability, and provides an overview of the country's climate finance landscape.

7.2.1. Defining Climate Finance

Climate finance refers to the financial resources, whether sourced locally, nationally, or transnationally, that support actions aimed at mitigating and adapting to climate change. These resources may come from public, private, or alternative avenues. In the context of this chapter, climate finance is categorised into two main types: Climate Adaptation Finance and Climate Mitigation Finance.

1. **Climate Adaptation Finance** refers to the financial resources directed towards activities

that reduce the vulnerability of human and natural systems to the impacts of climate change. For low-income communities in India, this could include funding for initiatives such as flood-resistant housing, drought-resistant agriculture, or the development of early warning systems for extreme weather events.

2. **Climate Mitigation Finance** is the funding allocated for activities aimed at reducing or preventing greenhouse gas emissions. In the context of low-income populations in India, this often involves financing clean energy solutions, energy-efficient technologies, and sustainable practices that also offer economic benefits to disadvantaged communities. By addressing both adaptation and mitigation, climate finance helps build resilience against the adverse effects of climate change while also contributing to global efforts to limit warming.

7.2.2. India's Unique Climate Vulnerability

India's vulnerability to climate change is multifaceted, shaped by its diverse geography, large population, and economic structure. The country's geographical diversity, which spans from the Himalayan mountains to expansive coastal areas, from arid zones to flood-prone river basins, presents a complex array of climate risks. Each region faces distinct challenges, necessitating tailored approaches to climate finance that can effectively address these varied vulnerabilities.

The size of India's population, which exceeds 1.45 billion as of 2024,[8] is another significant factor contributing to the country's climate vulnerability. Rapid urbanisation, with more than 35% of the population now living in urban areas,[9] has heightened the potential impacts of climate change. High population density in many regions amplifies the risks associated with extreme weather events, making disaster preparedness and response even more critical.

India's economic structure further complicates it's climate vulnerability. A significant portion of the workforce is engaged in climate-sensitive sectors, particularly agriculture, which employs about 40% of the workforce and is highly susceptible to climate variability.[10] The informal sector, which accounts for over 80% of employment,[11] offers limited social protection against climate shocks, leaving workers particularly vulnerable. Additionally, Micro, Small, and Medium Enterprises (MSMEs), which form the backbone of the Indian economy,[12] often lack the resources to invest in climate adaptation and resilience-building measures.[13] Water stress is another critical issue,[14] with many parts of India already facing significant water scarcity. This situation is exacerbated by climate change, which alters monsoon patterns and accelerates glacial melt in the Himalayas, posing severe risks to water security. Coastal areas are also at high risk, with over 7,500 kilometres of coastline[15] exposed to the threats of sea-level rise, increased cyclone

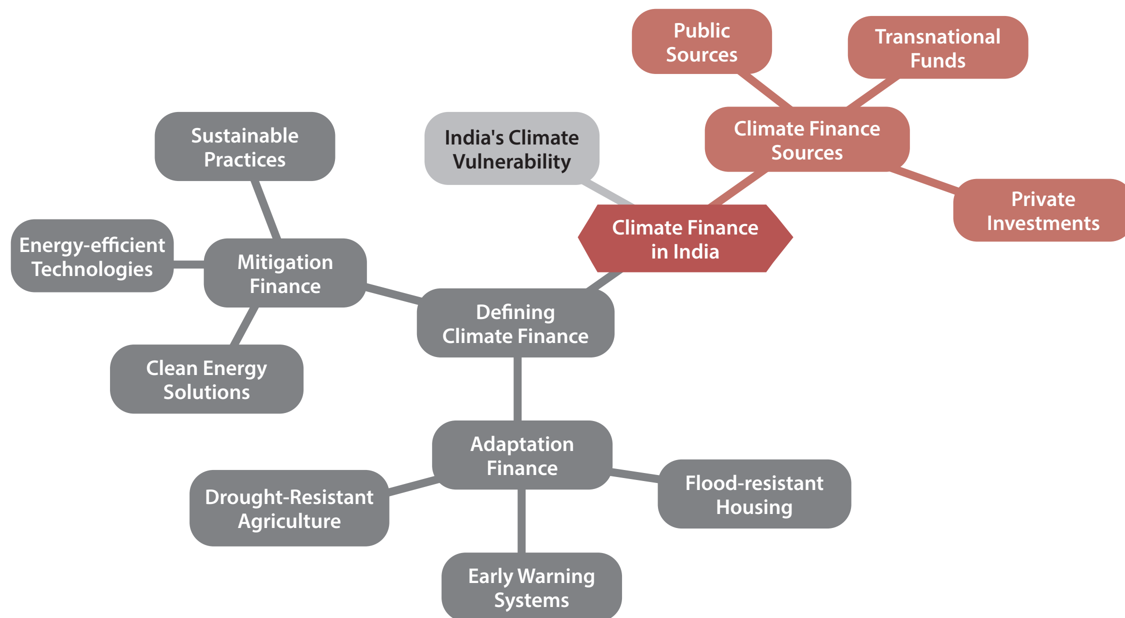

Figure 7.1. Climate Finance in India

intensity, and coastal erosion. Major cities and critical infrastructure located along the coast are particularly vulnerable.

Heat stress[16] is an additional concern, as rising temperatures pose risks to human health, labour productivity, and urban infrastructure. The urban poor, who often live in heat-trapping informal settlements, are especially vulnerable to the increasing frequency and severity of heatwaves.

7.2.3. Defining the Target Group: Low-Income Populations in India

For the purposes of this chapter, 'low-income populations in India' refers to individuals and households who are economically vulnerable, often lacking the financial resources needed to cope with climate-related shocks (see Box 7.2.). As of 2024, approximately 22% of India's population falls into these categories.

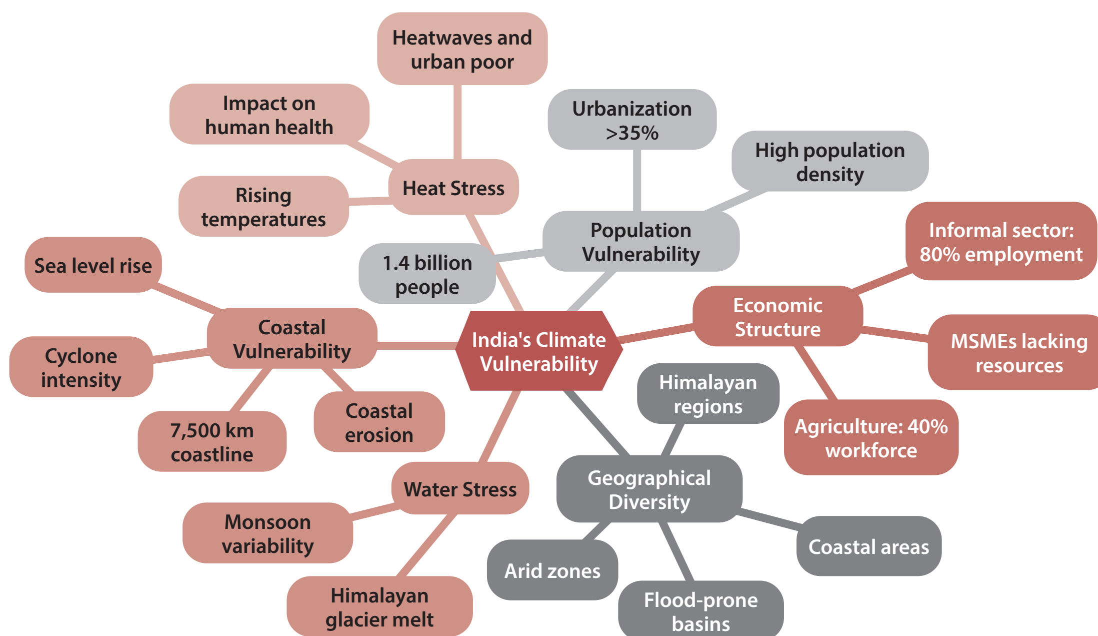

Figure 7.2. India's Climate Vulnerability

BOX 7.2. LOW-INCOME POPULATIONS IN NEED OF CLIMATE MITIGATION AND CLIMATE ADAPTATION FINANCE

Low-income populations include several key groups:

- People living below the official poverty line, which is defined as ₹1,059.42 per month in rural areas and ₹1,286 per month in urban areas.[17]
- Economically vulnerable populations living marginally above the poverty line, who are at significant risk of falling into poverty due to climate-related shocks.
- Small and marginal farmers, particularly those owning less than 2 hectares of land, who are highly dependent on agriculture and face severe risks from climate variability and extreme weather events.
- Landless agricultural labourers, who often lack access to land and resources, making them particularly vulnerable to climate impacts.
- Urban informal sector workers, who represent a large portion of the urban workforce but typically lack job security, social protection, and access to climate-resilient infrastructure.
- Residents of slums and informal settlements, who are disproportionately affected by urban climate risks such as flooding, heatwaves, and water scarcity.

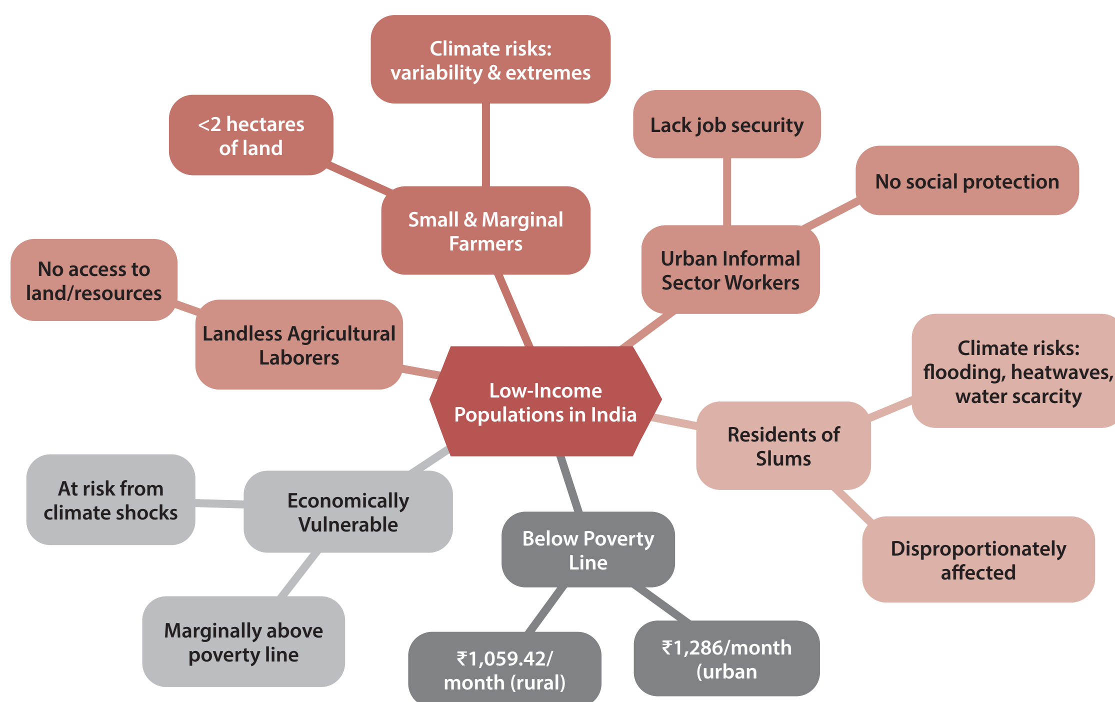

Figure 7.3. **Low-income Populations in India**

The economic impacts of climate change are pushing many more individuals and households into poverty, making climate finance a critical tool not only for reducing existing poverty but also for preventing further poverty. In other words, climate change is exacerbating vulnerabilities and threatening to push those just above the poverty line into deeper poverty.

7.2.4. The Climate Finance Landscape in India

India's climate finance landscape is characterised by a diverse mix of domestic and international funding sources, with active involvement from both the public and private sectors, as well as the development of various financial instruments to support climate action. The key elements of this landscape include:

7.2.5. Policy and Regulatory Framework

India's evolution in climate finance has been shaped by policies and regulations that establish a framework for mobilising resources effectively towards climate action. Key policies and regulations include:

Understanding this complex landscape is crucial for analysing the effectiveness of climate finance initiatives targeting low-income communities in India. The subsequent sections of this chapter will delve into specific aspects of adaptation and mitigation finance, examining how these financial flows operate within the broader context of India's climate challenges and opportunities to address the needs of the most vulnerable populations.

Table 7.1. **Key Elements of the Climate Finance Landscape in India**

Key Element	Description	Significance	Examples/Mechanisms
Government Initiatives	• National schemes integrating climate goals with development objectives, especially for low-income communities.	• Directs essential resources towards climate action.	• National Action Plan on Climate Change (NAPCC)
International Climate Funds	• Access to global funds (GCF, Adaptation Fund) managed through accredited national entities.	• Expands adaptation and mitigation efforts by supplementing domestic resources.	• Green Climate Fund (GCF), Adaptation Fund

Key Element	Description	Significance	Examples/Mechanisms
Multilateral & Bilateral Development Finance	• Funding and technical expertise from institutions like World Bank, Asian Development Bank, (ADB), International Finance Corporation (IFC) and bilateral donors.	• Supports large-scale climate initiatives with substantial resources and expertise.	• World Bank Climate Investment Funds, Japanese International Cooperation Agency (JICA) grants
Private Sector Investments	• Increasing investments in renewables, energy efficiency, and low-carbon technologies by private entities.	• Drives innovation and scaling of climate solutions.	• Solar and wind energy projects, EV infrastructure
Domestic Financial Institutions	• Indian entities like NABARD and SIDBI offering climate finance to sectors like agriculture and MSMEs.	• Ensures access to finance for vulnerable sectors and communities.	• NABARD's Climate Change Fund, SIDBI green finance schemes
Carbon Markets	• Compliance and voluntary carbon markets (e.g., PAT scheme) creating incentives for emission reductions.	• Generates additional funds for climate adaptation and mitigation projects.	• Perform, Achieve, and Trade (PAT) scheme
Innovative Finance Mechanisms	• New models like green bonds, impact investing, and blended finance to attract varied capital sources.	• Increases efficiency by combining public and private investments for greater impact.	• Sovereign Green Bonds, climate-focused impact investment funds

Table 7.2. Key Policy and Regulatory Frameworks

Policy/Regulation	Description	Significance	Examples/Mechanisms
National Action Plan on Climate Change (NAPCC)	• Launched in 2008, providing the overarching framework for India's climate mitigation and adaptation strategies.	• Sets national priorities and goals across key sectors.	• Mission-based approach across energy, water, agriculture, and more.
State Action Plans on Climate Change (SAPCCs)	• Region-specific climate plans developed by individual states to address unique vulnerabilities and align with national goals.	• Ensures climate finance addresses localised climate challenges.	• Gujarat's and Maharashtra's climate action plans.
Nationally Determined Contribution (NDC)	• India's commitment under the Paris Agreement, focused on emission reductions, renewable energy growth, and resilience.	• Aligns national and international climate goals, guiding climate finance priorities.	• Renewable energy target of 500 GW by 2030.[18]
Climate Change Finance Unit	• A unit within the Ministry of Finance to coordinate climate finance across sectors and stakeholders.	• Ensures efficient mobilisation and deployment of resources toward climate objectives.	• Ministry-led inter-departmental coordination on climate finance.
Green Finance Taskforce	• Reserve Bank of India initiative to integrate climate factors in financial sector lending and investment decisions.	• Mainstreams sustainable finance within India's financial sector, encouraging green investments.	• Guidelines for banks on climate-related financial risks.
Regulatory Measures	• Includes Renewable Purchase Obligations (RPOs) for utilities and energy efficiency standards for buildings and appliances.	• Mandates renewable energy use and energy efficiency to drive emissions reduction.	• Renewable Purchase Obligation; Perform, Achieve, and Trade (PAT).

7.3. CLIMATE ADAPTATION FINANCE

7.3.1. Overview and Importance

Climate adaptation finance is vital for strengthening the resilience of low-income communities in India, who are particularly susceptible to the adverse effects of climate change. These communities often live in climate-sensitive areas and rely heavily on natural resources for their livelihoods, making them especially vulnerable to climate-related shocks. The primary aim of adaptation finance is to mitigate this vulnerability by funding initiatives that enhance adaptive capacity, improve resilience, and reduce exposure to climate risks.

The significance of adaptation finance for low-income populations in India is immense. It plays a crucial role in protecting livelihoods, as many impoverished households depend on climate-sensitive sectors such as agriculture and fishing. Through adaptation finance, these communities can transition to climate-resilient practices, safeguarding incomes and food security. Additionally, adaptation finance is essential for reducing disaster risks, particularly for low-income communities living in high-risk areas prone to floods, droughts, or landslides. It supports disaster risk reduction measures that can save lives and assets. Furthermore, adaptation finance enhances water security, which is increasingly important due to changing rainfall patterns and growing water stress. It helps improve water management and access for vulnerable communities. Moreover, adaptation finance contributes to safeguarding public health by supporting initiatives to improve health infrastructure and services in climate-vulnerable areas, particularly as climate change exacerbates health risks for the poor. Finally, migration to urban areas increases, adaptation finance is essential for creating climate-resilient urban infrastructure that benefits low-income residents.

7.3.2. Major Government Initiatives

In the past decade, the Indian government has implemented several key initiatives to direct adaptation finance towards vulnerable communities, and these are summarised below:

One of the flagship initiatives is the National Adaptation Fund for Climate Change (NAFCC),[19] launched in 2015. The NAFCC aims to cover the costs of adapting to climate change for vulnerable sectors and communities, with an initial allocation of ₹3.5 billion[20] and subsequent annual budgetary support. By 2024,[21] over 30 projects[22] had been implemented across 27 states, benefiting more than 10 million vulnerable people through various adaptation measures.

Another significant initiative is the Mahatma Gandhi National Rural Employment Guarantee Scheme (MGNREGS),[23] which, while primarily an employment guarantee scheme, has increasingly focused on creating climate-resilient assets in rural areas through a climate finance approach. MGNREGS guarantees 100 days of wage employment to rural households, with a focus on water conservation, drought-proofing, and flood management works. As per government data, the scheme has created over 30 million[24] water conservation structures,[25] increasing water availability in 300,000 water-stressed villages and providing crucial supplementary income to millions of rural households, thereby enhancing their adaptive capacity. Calculations indicate that these structures have potentially conserved approximately 29 billion cubic metres of water, which could irrigate about 19 million hectares of land.

7.3.3. International Funding Mechanisms

International climate funds have played a crucial role in supporting adaptation initiatives for low-income communities in India. The Green Climate Fund (GCF)[31] has emerged as a significant source of adaptation finance since India gained access to it in 2015 (see Box 7.4). India has also been one of the largest recipients of the Adaptation Fund, with several projects targeting vulnerable communities. By 2024, Adaptation Fund projects in India had directly benefited over 1 million people from climate-vulnerable communities. The World Bank and the International Finance Corporation (IFC) have been significant partners in funding climate adaptation projects in India, often blending climate objectives with broader development goals.

7.3.4. Innovative Financing Models

The past decade has seen the emergence of several innovative financing models aimed at making adaptation finance more accessible and effective for low-income communities in India. Climate-smart microfinance has become increasingly important, with microfinance institutions (MFIs) small finance banks (SFBs) incorporating climate considerations into their products and services. ESAF Small Finance Bank's Green Loan Programme,[34] launched in 2020, provides low-interest loans for solar home systems, energy-efficient appliances, and water conservation

BOX 7.3. CLIMATE ADAPTATION FINANCE – A 'WATER PLUS' APPROACH FOR RESILIENT LOW-INCOME COMMUNITIES IN INDIA

India's Climate Adaptation Finance strategy is redefining water security and Conservation,[26] through a 'Water Plus' approach that prioritises vulnerable and low-income communities, those most impacted by water scarcity and climate change. Recognising that resilience starts with securing essential resources, this approach channels critical financial support into sustainable water, agriculture, and ecosystem restoration programmes. In an era of rising climate risks, climate adaptation finance enables India's most disadvantaged regions to build lasting resilience through community-driven solutions that address more than just water scarcity.

A standout example of this commitment is the 'Jal Sanchay Jan Bhagidari' programme,[27] launched by Prime Minister Narendra Modi in September 2024. Currently, 24,800 rainwater harvesting structures are being built across Gujarat as part of this initiative. This programme empowers low-income communities to manage and secure their local water sources, reducing their vulnerability to persistent droughts and seasonal water shortages. By leveraging climate adaptation finance, India is enabling these communities to take ownership of their resources, helping them withstand and recover from climate impacts in ways that are both sustainable and resilient.

India's approach to climate adaptation finance extends beyond water conservation, encompassing a broad range of programmes designed to address the diverse needs of vulnerable populations. Through initiatives like Jal Shakti Abhiyan, MGNREGS, Atal Bhujal Yojana, The Pradhan Mantri Krishi Sinchayee Yojana (PMKSY),[28], the National Initiative on Climate Resilient Agriculture (NICRA)[31]and The Green India Mission (GIM),[30] low-income communities gain access to climate-resilient agriculture, enhanced forest cover, and critical water infrastructure. Supported by a mix of government funds, Corporate Social Responsibility (CSR) investments, and global climate partnerships, the Water Plus approach focuses on those who need it most, providing them with the climate adaptation finance required to secure their livelihoods, protect their environments, and build a sustainable future in the face of ongoing climate challenges.

BOX 7.4. FINANCING MITIGATION AND ADAPTATION PROJECTS (FMAP) IN INDIAN MSMEs: SIDBI LEADS FROM THE FRONT IN CATALYSING CLIMATE RESILIENCE AND SUSTAINABLE FINANCE

The aforementioned project,[32] approved by the Green Climate Fund Board (B.39) on August 14, 2024, addresses India's urgent climate challenges. India's high climate vulnerability—ranked 7th on the Climate Risk Index—coupled with annual losses of $68 billion from extreme weather, highlights the need for effective climate resilience strategies. The Small Industries Development Bank of India (SIDBI) leads this initiative, aimed at empowering India's MSMEs to actively contribute to both climate mitigation and adaptation. With 2016 emissions[33] at 2,838.89 million tonnes CO_2 and MSMEs producing 110 million tonnes annually, the sector's sustainable transformation is crucial. Yet, MSMEs face limitations in financing, technology access, and skilled manpower, all of which this project addresses.

FMAP's strategy includes the establishment of a robust climate financing ecosystem, offering concessional loans to MSMEs to facilitate the adoption of low-carbon and climate-resilient technologies. In partnership with financial institutions, the project will promote climate financing tools while also conducting technology needs assessments to help MSMEs integrate sustainable practices. Through awareness-building initiatives, both MSMEs and participating financial institutions will gain knowledge about climate technologies, low-carbon methods, and risk assessments. The project also provides sector-specific benchmarking tools and disseminates best practices, driving a ripple effect for large-scale adoption of climate adaptation and mitigation solutions across India's diverse MSME sector. This ambitious project is set to reduce 35.34 million tonnes of CO_2 through sustainable technology adoption, generating over 2.7 million MWh in energy savings, with productivity benefits valued at up to 2.5 times the energy savings. From a social perspective, FMAP will benefit 10.8 million people and create approximately 420,000 new jobs in climate-focused roles. With $215.6 million in funding from the Green Climate Fund and supplemented by an expected $3.8 billion from public and private sources, FMAP addresses financing gaps and empowers MSMEs to contribute to India's decarbonisation goals. The project also champions women's empowerment, fostering inclusivity and resilience in India's MSME sector, paving the way for a sustainable and low-carbon future.

equipment. Another example of innovation is Dvara KGFS's[35] Climate Resilience Loan, introduced in 2019, which offers loans for climate-adaptive agricultural practices and disaster-resilient housing improvements. While these climate-smart inclusive finance initiatives have demonstrated the viability of integrating climate resilience into financial services for the poor, whether these models can be scaled profitably and ensure long-term sustainability remains to be seen.

Weather index-based insurance is another innovative approach that has emerged as a crucial tool for transferring climate risks faced by low-income farmers. The Pradhan Mantri Fasal Bima Yojana (PMFBY),[36] launched in 2016, is a comprehensive crop insurance scheme that uses weather data and remote sensing for faster, more accurate claim settlements. By 2024, PMFBY has insured over 30% of India's gross cropped area, primarily benefiting small and marginal farmers.[37] Additionally, HDFC Ergo's Weather-Based Crop Insurance,[38] a private-sector initiative complementing government schemes, uses automated weather stations to collect hyper-local weather data. While weather index-based insurance has significantly improved the speed and efficiency of claim settlements, challenges remain in improving product design to reduce basis risk and enhancing financial literacy among farmers.

Blended finance for ecosystem-based adaptation is another promising approach (Box 7.5.) that combines public, private, and philanthropic capital to fund large-scale climate finance adaptation projects.

BOX 7.5. CLIMATE ADAPTATION FINANCE MODEL IN ACTION: COMMUNITY-BASED MANGROVE RESTORATION IN GUJARAT, INDIA

Along the Gulf of Kutch in Gujarat, India, a community-based mangrove restoration initiative, funded by the India-Canada Environment Facility (ICEF), exemplifies how the Climate Adaptation Finance Model bolsters both ecological resilience and local livelihoods. Facilitated by the Gujarat State Forest Department and the Gujarat Ecology Commission, this project brings together a diverse set of stakeholders—including government agencies, community organisations, private sector partners, and international funders—using the Climate Adaptation Finance Model to restore vital mangrove ecosystems. These mangroves, essential for natural protection against cyclones and storm surges, had been critically degraded by human and environmental pressures. Through a collaborative, multi-stakeholder model that combines public and private sector support with robust community involvement, the project is restoring vast areas of Gujarat's coastal mangrove forests, the largest on India's western coast.

The climate adaptation benefits of this model are substantial. Surveys revealed that 73.6% of households reported reduced cyclone impacts due to the restored mangroves, and 50% observed decreased crop damage from the wind buffer provided by the renewed mangrove cover. Ecologically, the initiative has added 8,326 hectares of new mangrove forest, reinforcing biodiversity by providing critical habitats for both aquatic and terrestrial species. Although the carbon mitigation impacts remain unquantified, the extensive reforestation likely supports carbon sequestration, contributing to the adaptation goals of the Climate Adaptation Finance Model.

Local economies have also experienced socioeconomic gains through the implementation of this model. The restoration project led to a 31.5% increase in income from fisheries, supported by the healthier mangrove ecosystem, and participating households received an average of ₹8,735 from restoration activities. The multi-stakeholder governance structure—engaging community-based mangrove restoration groups, the Gujarat State Forest Department, and the Gujarat Ecology Commission—ensured efficient project management and outcome monitoring, including household surveys to measure the community's perceived benefits. Additionally, private sector partners contributed through CSR initiatives and impact investments, strengthening the reach and sustainability of this Climate Adaptation Finance Model.

7.4. CLIMATE MITIGATION FINANCE

7.4.1. Overview and Importance

Climate mitigation finance plays a pivotal role in addressing the dual challenge of reducing greenhouse gas emissions and fostering economic development, especially for low-income communities in India. This finance is essential for achieving global climate goals and promoting sustainable development and poverty reduction in one of the world's most climate-vulnerable countries. *Focusing on low-income populations is crucial, as these communities often lack access to clean energy and are disproportionately affected by the health and environmental impacts of traditional energy sources.*

Mitigation finance aims to fund activities that reduce greenhouse gas emissions and provide tangible economic benefits to low-income communities. This dual objective is crucial for aligning climate goals with broader developmental objectives, ensuring that the transition to a low-carbon economy is both inclusive and equitable. The importance of mitigation finance for low-income communities in India is evident in several key aspects:

1. **Energy Access:** Mitigation finance is vital for providing clean and affordable energy solutions to underserved communities. Access to reliable energy not only improves quality of life but also supports economic activities and education.
2. **Health Benefits:** The transition to cleaner technologies funded by mitigation finance significantly reduces local air pollution, leading to better health outcomes for low-income populations who are often exposed to high levels of pollutants from traditional biomass fuels and kerosene.
3. **Job Creation:** The expansion of low-carbon industries, such as renewable energy and energy efficiency sectors, creates new employment opportunities, particularly benefiting low-income workers who may be engaged in informal or unskilled jobs.
4. **Cost Savings:** Energy-efficient technologies, supported by mitigation finance, can lead to substantial reductions in energy costs for households and businesses. These savings can be redirected towards other essential needs, thereby improving overall economic resilience.
5. **Climate Resilience:** Many mitigation activities, such as agroforestry or sustainable waste management, offer adaptation co-benefits that enhance the resilience of communities to climate impacts while reducing emissions.

7.4.2. Financing Renewable Energy Initiatives for Low-Income Communities

India's climate mitigation efforts prioritise financing for renewable energy to make clean, affordable, and sustainable energy accessible to low-income populations. These targeted initiatives aim to extend reliable energy to underserved areas, reduce dependency on traditional fuels, and create economic opportunities through skill-building and job creation.

7.4.2.1. Financing Solar Home Systems and Micro-Grids for Remote Communities

Solar energy programmes (Box 7.6.) are a cornerstone of India's approach to extend clean power to underserved communities, particularly in remote and rural regions, through climate mitigation finance.

BOX 7.6. ATAL JYOTI YOJANA: CLIMATE MITIGATION FINANCE FOR LOW-INCOME COMMUNITIES

Atal Jyoti Yojana (AJAY) serves as a prime example of climate mitigation finance aimed at benefiting low-income communities and businesses. By deploying over 2.72 lakh solar-powered street lights across underserved regions, AJAY reduces dependency on conventional energy sources, contributing to lower greenhouse gas emissions. This shift towards renewable energy infrastructure aligns with climate mitigation efforts by providing an affordable, sustainable lighting solution that supports India's commitment to reducing its carbon footprint. Solar lighting is particularly beneficial in rural and semi-urban areas with limited grid connectivity, providing reliable and cost-effective lighting solutions. The financial impacts of AJAY are transformative for low-income households and small businesses. Reliable solar lighting in public spaces enhances safety and extends productive hours into the evening, enabling small businesses, vendors, and informal workers to operate longer and improve their earnings. Additionally, families benefit from well-lit surroundings, improving the quality of life and community security. Through this inclusive model, AJAY not only addresses climate goals but also fosters economic resilience by equipping low-income communities with sustainable infrastructure that supports both economic activities and social well-being.

These solar programmes rely on multi-faceted financing solutions, including government subsidies, microfinance, and flexible pay-as-you-go (PAYG) models (see Box 7.7.).

BOX 7.7. EMPOWERING COMMUNITIES[39] THROUGH CLIMATE MITIGATION FINANCE: THE STORY OF SIMPA NETWORKS

Simpa Networks, an innovative leader in off-grid solar energy, exemplifies the impact of climate mitigation finance in action. Through its PAYG model, Simpa has made solar energy accessible to low-income households in India, enabling them to pay for systems in affordable instalments rather than facing high initial costs. This climate mitigation finance approach, bolstered by microfinance options, allows rural communities to invest in solar installations that expand energy access, create jobs, and reduce reliance on harmful kerosene. The PAYG model has improved indoor air quality, supported health outcomes, and generated jobs in solar installation and maintenance, spurring economic growth in underserved regions. A pioneer in delivering renewable energy to rural communities, Simpa Networks has reached over 100,000 households with affordable clean energy. In 2022, the company launched the 'Magic TV' service, a solar-powered bundle that combines lighting, satellite TV, and entertainment, offering a comprehensive energy solution for off-grid homes. With over 65 MWh of energy delivered and $24 million in funding raised, Simpa's impact extends well beyond electricity, advancing sustainable development and India's climate goals. Acquired by ENGIE in 2018, Simpa Networks showcases the potential of innovative (climate mitigation) finance and technology to address energy poverty, support climate action, and empower communities. Through these efforts, Simpa is building a more sustainable, resilient future for low-income households in India and beyond.

7.4.2.2. Financing Rooftop Solar Initiatives for Low-Income Housing

Rooftop solar initiatives are a powerful tool for reducing energy costs for urban and peri-urban low-income households as part of climate mitigation finance. PM-KUSUM[40] (Pradhan Mantri Kisan Urja Suraksha Evam Utthaan Mahabhiyan) promotes solar-powered agricultural pumps (Box 7.8.).

BOX 7.8. POWERING SUSTAINABILITY THROUGH INCLUSIVE CLIMATE MITIGATION FINANCE: THE CASE OF PM-KUSUM SCHEME

The Pradhan Mantri Kisan Urja Suraksha evam Utthaan Mahabhiyan (PM-KUSUM) Scheme is a powerful model of inclusive climate mitigation finance, making renewable energy accessible and affordable for India's farmers. Through PM-KUSUM, over 2.95 lakh standalone off-grid solar water pumps have been installed, reducing farmers' reliance on costly diesel and cutting down on greenhouse gas emissions. Launched in March 2019 and expanded in 2023, the scheme provides crucial financial support, with 30%–50% of costs covered for solar installations, depending on the region. This inclusive finance approach empowers low-income farmers to adopt sustainable energy, ensuring both energy and water security while supporting climate goals.

PM-KUSUM's structure reflects a comprehensive approach to climate mitigation, with three main components: decentralised solar plants (10,000 MW target), standalone solar pumps (14 lakh target), and the solarisation of grid-connected pumps (35 lakh target). Each component leverages climate mitigation finance by integrating financial incentives for individual farmers and grants to distribution companies (DISCOMs) to purchase renewable energy. This finance-driven model fosters sustainable agricultural practices, reduces operational costs, and improves income stability for rural farmers, making renewable energy adoption viable even in the most marginalised areas. By addressing the financial barriers to renewable energy, PM-KUSUM demonstrates the potential of climate mitigation finance to drive green, inclusive growth. The scheme not only contributes to India's renewable energy targets but also supports rural development through job creation in the solar sector, enhancing both climate resilience and economic well-being. Through its transformative and inclusive finance framework, PM-KUSUM exemplifies how targeted support for green infrastructure can uplift communities, secure livelihoods, and promote a sustainable future for India's agricultural sector.

BOX 7.9. SOLAR CITIES PROGRAMME AND PM SURYA GHAR MUFT BIJLI YOJANA: INCLUSIVE CLIMATE MITIGATION FINANCE POWERING INDIA'S RENEWABLE FUTURE

The Solar Cities Programme, a transformative climate mitigation finance initiative, aims to reduce conventional energy demand by 10% over five years across 60 cities, with a special emphasis on rooftop solar installations in low-income areas. This programme represents an inclusive financing approach, equipping cities to transition to renewable energy by making rooftop solar accessible to all economic levels, thereby reducing greenhouse gas emissions and cutting energy costs for underserved communities. The PM Surya Ghar Muft Bijli Yojana, another exemplary initiative in inclusive climate finance, was launched to turn every Indian home into a power producer. With more than 1.3 crore families registered and over 3.25 lakh installations completed, this scheme enables households to generate and sell excess power back to the grid, saving an average of ₹25,000 annually. For low-income families, this creates not only energy security but also potential savings for critical needs, such as education and healthcare. These programmes, coupled with India's initiatives like the Green Hydrogen Mission and the International Solar Alliance, underscore India's unique approach to renewable energy through scalable, inclusive climate finance.

Likewise, the Solar Cities (Box 7.9.) Programme,[41] also advancing rooftop solar adoption, aims to reduce demand for conventional power by 10% over five years across 60 cities, with an emphasis on installations in low-income areas. Government subsidies, concessional loans through public sector banks, and the Renewable Energy Service Company (RESCO)[42] model finance these initiatives. The RESCO model allows low-income households to adopt solar energy without upfront costs, paying instead through a service model, which improves affordability and reduces financial risk.

7.4.2.3. Other Inclusive Climate Mitigation Finance Initiatives for Low-Income and Marginalised Communities

These initiatives illustrate how climate mitigation finance can support low-income and marginalised communities by providing access to sustainable energy solutions that reduce emissions, lower energy costs, and improve health and economic stability. By leveraging government subsidies, concessional loans, and carbon finance, these programmes make clean energy technologies affordable for underserved populations, creating a bridge between climate action and socio-economic progress.

7.4.2.3.1. Financing of the National Biogas and Manure Management Programme[43] (NBMMP) and Sustainable Alternative Towards Affordable Transportation (SATAT)

These programmes convert agricultural and municipal waste into energy and employment in low-income areas. NBMMP has installed over 5 million biogas plants, while SATAT promotes Compressed Bio-Gas (CBG) from waste. The National Bioenergy Programme is a clear example of climate mitigation finance, channelling ₹1,715 crore into renewable energy projects that benefit both the environment and low-income communities. As of July 31, 2023, the programme has funded six BioCNG plants and 11,143 small biogas plants across India, utilising agricultural and industrial residues to produce clean energy. By reducing emissions and providing affordable, renewable energy, this initiative directly supports low-income and rural households, who often rely on costly or polluting fuels. The programme not only mitigates climate impact but also improves energy access and creates local job opportunities, illustrating how climate finance can drive inclusive, sustainable development.[44]

The Sustainable Alternative Towards Affordable Transportation (SATAT) initiative, launched by India's Ministry of Petroleum & Natural Gas in October 2018, serves as a key example of climate mitigation finance benefiting low-income communities. With a target to establish 5,000 Compressed Biogas (CBG) plants by 2024, SATAT channels climate-focused investment into renewable energy by converting agricultural residue, municipal waste, and biomass into CBG, thereby reducing greenhouse gas emissions and dependence on fossil fuels. By October 31, 2022, 3,694 Letters of Intent had been issued to entrepreneurs, and 38 CBG plants had been commissioned, showcasing

how climate mitigation finance can directly enable sustainable infrastructure. This initiative not only advances India's climate goals but also creates economic opportunities in rural and low-income areas by supporting local entrepreneurs and workers involved in the establishment and operation of CBG plants. SATAT thus exemplifies how climate mitigation finance can drive both environmental and socio-economic progress, promoting sustainable development and financial inclusion for underserved communities.[45]

7.4.2.3.2. Financing in the Ujala Scheme for LED Accessibility

The Unnat Jyoti by Affordable LEDs for All (UJALA) Scheme,[46] launched on January 5, 2015, is a leading example of climate mitigation finance, delivering affordable, energy-efficient LED lighting to millions across India. By November 2024, UJALA had distributed over 36.87 crore LED bulbs, achieving annual energy savings of 47,883 million kWh, reducing CO_2 emissions by 3.87 crore tonnes, and generating ₹19,153 crore in annual cost savings for consumers. The programme's innovative financing strategy lowered LED bulb prices from ₹300–350 to ₹70–80, making energy-efficient lighting accessible to low- and middle-income households. Ujala's on-bill financing model allows low-income customers to purchase LEDs in small instalments through their electricity bills, reducing energy costs, creating jobs in LED manufacturing and distribution, and boosting local economies, though challenges remain in ensuring LED quality and reaching remote households. That said, bulk procurement and e-procurement strategies fostered economies of scale, boosting domestic LED manufacturing from 1 lakh bulbs per month to 40 million. By involving Self-Help Groups (SHGs) in LED distribution, UJALA also created economic opportunities for lower-income communities, advancing financial inclusion. This inclusive and sustainable model highlights UJALA as a climate mitigation finance success, offering environmental, economic, and social benefits.

7.4.3.2. Financing Energy Efficient Cook Stoves for Rural Low-Income Households

The National Programme on Improved Cookstoves and Pradhan Mantri Ujjwala Yojana (PMUY),[47] including its expanded phase PMUY 2.0, stand as powerful examples of climate mitigation finance that directly benefit low-income rural households. These initiatives leverage government subsidies, microfinance loans, and carbon finance to make clean cookstoves and LPG connections accessible and affordable, thus reducing dependence on traditional, polluting fuels. As of July 1, 2024, PMUY 2.0 has provided 1.60 crore new LPG connections, bringing the total to 10.33 crore connections under PMUY. This expansion not only enhances health and quality of life by lowering indoor air pollution for millions of women and children but also advances climate mitigation goals by significantly reducing greenhouse gas emissions from biomass burning. In addition, the programme creates economic opportunities in rural areas by establishing LPG distribution networks, generating local jobs, and stimulating regional economies, demonstrating how climate mitigation finance can yield broad socio-economic and environmental benefits.

These initiatives demonstrate how climate mitigation finance, through subsidies, concessional loans, carbon credits and other mechanisms, helps marginalised communities transition to sustainable energy sources. By reducing financial barriers, these programmes enable low-income households and small businesses to adopt clean energy technologies, thereby enhancing their resilience to climate change.

7.5. ROLE OF KEY INSTITUTIONS

The landscape of climate finance for low-income communities in India has been strengthened by key institutions, notably NABARD and SIDBI, through their extensive programmes targeting rural adaptation, MSME sustainability, renewable energy access, and climate-resilient agriculture. Their programmes are discussed below.

7.5.1. National Bank for Agriculture and Rural Development (NABARD)[48] and Climate Finance

NABARD has emerged as a pivotal institution in channelling climate finance to rural and agricultural sectors, which encompass a significant portion of India's low-income population. Over the 2014–2024 period, NABARD's role has expanded significantly, establishing it as a key player in promoting climate resilience and sustainable development. NABARD serves as the National Implementing Entity (NIE) for two major international climate funds, significantly enhancing its ability to channel international climate finance into grassroots-level projects.

For the Adaptation Fund (AF)[49], accredited in 2012, NABARD has overseen the implementation of several adaptation projects, such as 'Building Adaptive Capacities of Small Inland Fishers for Climate Resilience' in Madhya Pradesh[50] and 'Climate Smart Actions and Strategies in the North Western

Himalayan Region for Sustainable Livelihoods of Agriculture-Dependent Hill Communities.'[51] For the Green Climate Fund (GCF), accredited in 2015, NABARD has managed major projects such as 'Ground Water Recharge and Solar Micro Irrigation to Ensure Food Security and Enhance Resilience in Vulnerable Tribal Areas of Odisha'[52] and 'Enhancing Climate Resilience of India's Coastal Communities.'[53] These accreditations have allowed NABARD to effectively access and utilise international climate finance, benefiting millions of low-income rural households across India.

As an accredited entity for several international climate funds, NABARD has facilitated the sanctioning and implementation of 40 projects with total project assistance of $257 million dedicated to climate action. These include six projects from the Adaptation Fund, amounting to $9.9 million, alongside two readiness grants, 30 projects under NAFCC totalling more than $100 million, and two large-scale projects under the Green Climate Fund (GCF) valued at $134.35 million. Beyond these projects, NABARD's initiatives are making substantial impacts on building climate resilience and advancing climate change mitigation across India.

To further support climate action, NABARD established its own Climate Change Fund (CCF) with a corpus of 200 million. This fund is designed to increase awareness of climate change issues among stakeholders and promote innovative adaptation and mitigation efforts that foster climate-resilient livelihoods. In FY 2023–24, NABARD also set up the Climate Change Fund-Interest Differential (CCF-ID), with the approval of the Reserve Bank of India, to support experimental projects focused on climate adaptation and to explore new financial models.

Additionally, NABARD's Centre for Climate Change, located at the Bankers Institute of Rural Development (BIRD) in Lucknow, Uttar Pradesh, plays a crucial role in knowledge sharing, training, capacity building, and policy advocacy on climate issues. The 'Climate Adaptation, Resilience, and Climate Finance in Rural India (CAFRI)' programme, a collaborative initiative between NABARD and GIZ, focuses on enhancing climate resilience through policy support, planning, and capacity building. CAFRI's first phase (CAFRI-I) ran from 2020 to 2023, and a second phase, CAFRI-II, is currently under consideration to continue strengthening climate resilience efforts in rural India.

7.5.2. Small Industries Development Bank of India (SIDBI)[54] and Climate Finance

SIDBI is at the forefront of climate mitigation and adaptation finance for India's MSME sector, recognising the crucial role these enterprises play in driving a low-carbon economy and supporting livelihoods across the country. Through concessional financing, ecosystem support, and strategic institutional partnerships, SIDBI is integrating climate priorities into MSME financing, enabling green transitions that benefit both the environment and economic resilience. By empowering MSMEs to adopt sustainable practices, SIDBI not only contributes to climate action but also strengthens the stability of businesses that provide essential income for many low-income entrepreneurs and workers in India. SIDBI's key initiatives include:

Concessional Financial Assistance for Climate Projects: Central to SIDBI's climate finance strategy are its dedicated Green Finance Schemes, which offer concessional funding to MSMEs undertaking climate mitigation and adaptation initiatives. These schemes focus on sectors critical to climate resilience, such as renewable energy, sustainable transportation, waste management, energy efficiency, and green mobility. Tailored financing helps MSMEs incorporate Environment, Social, and Governance (ESG) practices into their operations, aligning their activities with global climate goals. Additionally, SIDBI has streamlined and expanded its flagship programmes, such as the End-to-End Energy Efficiency (4E) financing scheme and the TIFAC-SIDBI (Srijan) programme,[55] making them more accessible to MSMEs aiming to reduce their environmental footprint. Through these initiatives, SIDBI achieved a 168% increase in green loan portfolios during FY 2022, underscoring its commitment to climate finance for MSMEs.

Developmental Support to Build a Climate-Resilient Ecosystem: SIDBI is also committed to creating a supportive ecosystem for MSMEs to adopt sustainable, climate-adaptive practices. The bank's initiatives increase awareness, build sector-wide capacity, and promote practices aligned with climate resilience. Through partnerships with international organisations—including Agence Française de Développement (AFD), Asian Development Bank (ADB), Kreditanstalt für Wiederaufbau (KfW), Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ), and The World Bank—SIDBI has launched the Green Indian Financial System (GIFS) initiative in collaboration with AFD and Shakti. This platform fosters discussions

BOX 7.10. GCF's APPROVAL FOR SIDBI's GREEN CLIMATE PROJECT FOR MSMEs

SIDBI has received approval from the Green Climate Fund (GCF) for its first green climate project, the Avaana Sustainability Fund (ASF), which has secured an investment of $120 million. This includes $24.5 million from GCF, the world's largest climate fund. The ASF will invest in early-stage Indian companies leveraging technology-led innovation to provide climate solutions, focusing on climate mitigation, adaptation, and resilience in vulnerable sectors. SIDBI, in collaboration with stakeholders such as the Ministry of Finance's Department of Financial Services, aims to promote sustainable growth among MSMEs contribute to provide with India's Nationally Determined Contributions (NDCs).[56]

and strategies for greening India's financial system, ensuring that climate finance tools are available for MSMEs to drive sustainable change. This ecosystem-building strategy positions MSMEs at the forefront of climate action, ensuring they are well-prepared for climate risks while actively contributing to a low-carbon economy.

Encouraging Broader Financial Sector Participation in Climate Finance: SIDBI is scaling its impact further by enabling other banks and financial institutions to support energy-efficient and climate-aligned projects. It has established training programmes, handholding support, and a Risk Sharing Facility to catalyse green financing across the financial sector. The Partial Risk Sharing Facility (PRSF) for Energy Efficiency, backed by a $37 million corpus from The World Bank, supports energy-efficient projects implemented through Energy Service Companies (ESCOs). By covering part of the risk, the PRSF incentivises banks and NBFCs to engage in green lending, thus amplifying the reach of SIDBI's climate finance. Thirteen institutions, including the State Bank of India, Bank of Baroda, Canara Bank, HDFC Bank, and Indian Renewable Energy Development Agency (IREDA), have joined as Participating Financial Institutions (PFIs). By FY 2022, the PRSF had supported 45 projects with a total project cost of 4.76 billion, showcasing a scalable model of risk-sharing that catalyses climate-aligned investments. To encourage broader adoption, SIDBI has also launched cluster-based initiatives, targeting over 100 MSME clusters in states like Bihar and West Bengal. By providing both technical and financial support, SIDBI aims to reduce energy consumption, greenhouse gas emissions, and resource intensity within these clusters, aligning with India's goals of self-reliance and sustainability.

7.5.3. Other Significant Players

While NABARD and SIDBI play central roles, several other institutions have also made significant contributions to climate finance for low-income communities in India. IREDA[57] has launched several schemes targeting small-scale renewable energy projects. The National Housing Bank (NHB)[58] introduced a green housing refinance scheme in 2018, providing concessional finance for low-income housing projects that incorporate energy efficiency measures. Many MFIs have introduced specific loan products for clean energy and climate-resilient agriculture. For example, Satin Creditcare Network's 'Green Shakti' loan for solar products reached several low-income households by 2024. Several states have established dedicated climate funds. The Maharashtra Green Climate Fund, launched in 2022, focuses on climate-resilient agriculture and water conservation in drought-prone areas. Some private banks have taken proactive steps in climate finance. For instance, Axis Bank's Sustainable Lending Policy, introduced in 2020, includes specific provisions for financing climate-resilient agriculture and clean energy for low-income segments.

The collective efforts of these institutions have significantly expanded the landscape of climate finance available to low-income communities in India. However, challenges remain in terms of coordination, scale, and ensuring that finance reaches the most vulnerable populations.

7.6. LESSONS FROM INDIA'S CLIMATE (ADAPTATION AND MITIGATION) FINANCE EXPERIENCE FOR LOW-INCOME PEOPLE

Over the decade from 2014 to 2024, India's experience with climate finance has been transformative for its low-income populations, especially in rural, agricultural, and underserved urban areas. Through adaptive finance structures, innovative models, and stable policy frameworks, India has forged a path to climate resilience that centres on inclusivity and sustainability. The financial frameworks applied in India highlight the critical role that targeted,

accessible climate finance can play in alleviating poverty, promoting sustainable livelihoods, and enabling low-income populations to adapt to the impacts of climate change. This section outlines the financial strategies and lessons that have proven successful, offering insights for other regions aiming to adopt similar pro-poor climate finance models.

Lesson #1: Localised and Flexible Financing Models are Crucial for Adaptation—Localised finance, adapted to community needs, is essential for effective climate adaptation. The success of NABARD's Tribal Development Fund, which combines traditional agricultural practices with sustainable techniques, and the Odisha Disaster Recovery Project, which used a community-driven housing model, illustrate that climate adaptation finance must be community-centric. Localised finance addresses specific environmental and socio-economic factors unique to each community, making adaptation strategies more relevant and impactful.

Insight: Effective adaptation finance should be flexible and community-specific to maximise resilience benefits for low-income populations.

Lesson #2: Integrating Climate Finance into Development Programmes Can Enhance Impact—India's approach of embedding climate adaptation within existing development programmes has yielded notable results. Programmes like the Mahatma Gandhi National Rural Employment Guarantee Scheme (MGNREGS) and Maharashtra's Project on Climate Resilient Agriculture (PoCRA) illustrate the benefits of integrating climate resilience with income-generating projects. By aligning adaptation finance with development initiatives, India maximised the impact of resources, supporting both economic stability and climate resilience in low-income communities.

Insight: Integrating climate resilience measures within development finance frameworks can enhance outcomes, particularly for vulnerable communities.

Lesson #3: Innovative Financing Models Help Overcome Upfront Costs—High initial costs often prevent low-income households from adopting clean technologies. India's innovative financing models, such as PAYG schemes and the bulk procurement of LED bulbs by Energy Efficiency Services Limited (EESL), have lowered the barrier for clean energy adoption. PAYG solar models, like those used by Simpa Networks, made solar energy accessible to several low-income households by distributing upfront costs over time.

Insight: Innovative financial solutions, including PAYG models and bulk procurement, are essential for making sustainable technologies accessible to low-income households.

Lesson #4: Blended Finance Expands Access for Vulnerable Communities—Blended finance, which combines public and private capital, has expanded access to climate resilience projects for low-income populations in India. NABARD's blended finance programmes for climate-resilient agriculture demonstrated how this approach can share risks, lower costs, and attract private investment into sectors otherwise overlooked by traditional finance. By blending grants, concessional loans, and market-rate finance, risks are shared, and wider access is enabled, particularly in rural areas.

Insight: Blended finance is an effective model for expanding access to climate finance, especially for projects in high-risk or underserved communities.

Lesson #5: Decentralised and Targeted Financing Are Crucial for Enhancing Rural Energy Access—Decentralised finance, directed toward micro-grids, solar pumps, and other distributed energy sources, has enabled clean energy access in rural areas where centralised systems are less effective. India's KUSUM scheme has funded the installation of micro-grids and solar irrigation pumps for agricultural communities, reducing energy costs and improving resilience against climate shocks. Targeted finance allowed this scheme to reach vulnerable communities with tailored solutions.

Insight: Dedicated, decentralised financing models are vital for making clean energy accessible to rural and underserved regions.

Lesson #6: Long-Term Financial Commitment is Critical for Adaptation—India's experience highlights that long-term financial commitment is critical for adaptation projects to succeed. Initiatives like NABARD's Umbrella Programme on Natural Resource Management and the National Cyclone Risk Mitigation Project reveal that extended funding periods (often over 10 years) are essential to build trust and create resilient systems. Long-term financial planning is particularly important in low-income regions where climate impacts require ongoing adaptation support.

Insight: Long-term financial commitments and structured funding timelines enhance adaptation project sustainability, especially in climate-sensitive areas.

Lesson #7: Domestic Resource Mobilisation Crucial for Sustained Climate Finance—India's coal cess and green bonds have proven effective in mobilising domestic resources for climate finance, ensuring project continuity independent of international funding sources. By 2024, India's green

bond market had mobilised over $15 billion, with resources directed toward clean energy and climate resilience projects. This approach illustrates how domestically sourced finance can support climate resilience, particularly when international finance is uncertain or insufficient.

Insight: Mobilising domestic financial resources is critical for sustaining climate finance and ensuring continuity, particularly for low-income communities.

Lesson #8: Capacity Building in Financial Institutions Can Enhance Access to Climate Finance for Low-Income Communities—Strengthening the capacity of financial institutions has been crucial to improving climate finance outcomes. NABARD's Climate Change Advisory Services and SIDBI's Green Finance Certification Programme have trained financial professionals to assess and manage climate projects, ensuring that finance reaches low-income communities efficiently. These capacity-building initiatives have enabled financial institutions to deliver targeted finance for sustainable and resilient projects across rural and underserved areas.

Insight: Investing in capacity-building within financial institutions helps ensure that climate finance reaches low-income communities with greater efficacy.

Lesson #9: Inclusive Finance Approaches Help Overcome Access Barriers—Many low-income individuals in India lack formal financial services, hindering their access to climate finance. By linking climate finance with financial inclusion schemes such as Jan Dhan Yojana, India expanded access to financial services. Partnerships with local (inclusion focussed) institutions also proved beneficial, as seen in SELCO Foundation's financing of over 100,000 solar home systems for low-income households. Financial inclusion is thus a foundational step in making climate finance accessible.

Insight: Financial inclusion initiatives should be integrated into climate finance strategies to enhance accessibility for low-income communities.

Lesson #10: Policy Stability is Crucial to Attract Private Investment into Climate Finance for Low-Income People—Consistent policies are essential for attracting private investment in climate finance. The stable policy environment around India's National Electric Mobility Mission Plan successfully attracted investment in electric vehicles, while inconsistent solar policies reduced uptake in rooftop solar for low-income communities. This experience highlights that policy stability is key to maintaining investor confidence and encouraging long-term commitments in climate-related sectors.

Insight: Stable, predictable policy environments are crucial to attracting and retaining private investment in climate finance.

Lesson #11: Cross-Sectoral Collaboration is Crucial for Maximising Impact of Climate Finance Initiatives—Cross-sectoral partnerships between government, financial institutions, and private companies have enhanced the impact of India's climate finance. Public-private partnerships, such as those formed under the PM-KUSUM scheme for solar irrigation, enabled low-income agricultural communities to access financing and technology. Collaborations across sectors allowed for resource-sharing, reduced financial risk, and brought innovative climate finance solutions to underserved regions.

Insight: Cross-sectoral partnerships are critical for maximising the impact of climate finance, particularly for low-income and marginalised populations.

Lesson #12: Gender-Responsive Financing Models Create Inclusive Outcomes in Climate Finance for Low Income People—India's gender-responsive climate finance initiatives illustrate that targeted finance for women-led businesses can create more inclusive, resilient communities. Programmes that incorporate gender perspectives, especially in agricultural and energy sectors, provide women with access to climate finance, fostering a more equitable distribution of resources and strengthening community resilience.

Insight: Gender-responsive financing models promote equitable resource distribution and contribute to community-wide resilience.

Lesson #13: Community-Based Financial Models Increase Trust and Adoption—Community-based finance, such as micro-grants and localised credit facilities, has increased adoption and trust in climate initiatives. NABARD's Climate Change Advisory Services included community involvement at every project stage, making financing more relevant and accessible to those most affected by climate change. Community-based finance allows for tailored approaches, building trust and ensuring that funds are used effectively in underserved areas.

Insight: Community-based finance models increase trust, adoption, and effective use of climate finance among low-income populations.

Lesson #14: Technological Innovation in Climate Finance Enhances Targeting and Efficiency—Technological advancements, such as mobile banking and blockchain, have enhanced the transparency, targeting, and efficiency of India's climate finance. Digital finance platforms

reduced transaction costs, while blockchain applications improved trust in renewable energy markets, ensuring that finance reached its intended beneficiaries. Technologies like satellite data further enabled precision-targeted financing, which is critical for accurately addressing the needs of low-income communities.

Insight: Technological integration in climate finance improves targeting and efficiency, especially for underserved populations.

Lesson #15: Incentive Structures Encourage Private Sector Participation in Climate Finance Initiatives for Low-Income People—To attract private sector involvement in climate finance, India implemented incentive structures like tax breaks and priority sector lending mandates for climate-friendly projects. Likewise, an MSME Green Bond Programme that aggregates green projects to issue bonds, can draw significant investment from private capital into clean energy and sustainable finance for MSMEs. Such incentive structures have proven effective in driving private sector participation in climate finance for low-income communities.

Insight: Incentive structures, including tax breaks and priority lending, are key to engaging private sector investment in climate finance.

Discussion

India's decade-long experience from 2014 to 2024 illustrates how climate adaptation and mitigation finance can be a powerful tool for building resilience and promoting sustainable development, particularly for low-income and marginalised communities. By developing region-specific and adaptable financing models, India has crafted a climate finance framework that addresses the unique challenges faced by local communities, allowing them to adopt climate-resilient practices tailored to their specific environmental and socio-economic conditions. This grassroots approach has made climate finance a powerful tool for climate adaptation, with a strong emphasis on local empowerment and community-driven solutions that ensure lasting resilience.

Innovative financing mechanisms, such as flexible payment structures and blended finance models, have been instrumental in reducing the high upfront costs associated with sustainable technologies. This has made these technologies accessible to vulnerable populations. By removing financial barriers, India has enabled more low-income households and small enterprises to participate in climate adaptation and mitigation, widening the reach of climate finance across the country. Additionally, India's commitment to long-term funding has provided the stability necessary for adaptation projects to make a lasting impact, fostering trust within communities and allowing resilience measures to integrate gradually.

India has also focused on domestic resource mobilisation through mechanisms such as green bonds and local taxes, ensuring a sustainable flow of funding that is independent of international fluctuations. This approach guarantees the continuity of essential climate adaptation and mitigation projects for low-income populations. Inclusivity is central to this approach, with gender-responsive and community-focused finance models that empower marginalised groups and promote social equity alongside climate resilience. Stable policies have strengthened this framework, attracting private sector investment and amplifying the reach of climate finance in low-income areas.

India's climate adaptation and mitigation finance journey underscores the value of innovation, inclusivity, and local relevance in building a resilient and inclusive financial ecosystem for low-income and marginalised populations. By integrating technology, policy stability, and cross-sector partnerships, India has created a replicable model that combines community engagement with sustainable funding. This experience offers valuable insights for other nations, demonstrating how pro-poor climate adaptation and mitigation finance solutions can enhance resilience and promote inclusive growth for low-income and marginalised communities facing the challenges of climate change.

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Gender and Enterprise Finance: Reckoning with Status 2024

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8

8.1. EQUALITY AND EMPOWERMENT: THE CASE FOR WOMEN'S EQUAL ACCESS TO ENTERPRISE FINANCE

Gender equality is a fundamental human right, and women's access to finance is an essential part of that right. Empowering women is not only an important social goal but also makes good business sense. Women-led enterprises contribute to the well-being of families and play a significant role in driving economic growth, helping boost a nation's GDP.

Women's empowerment is a transformative force that aims to create a society where women are leaders, active participants, and agents of positive change. The United Nations' Sustainable Development Goal 5 (UN SDG 5) underscores the critical role of gender equality in advancing societal progress. This is largely because empowered women are able to contribute diverse perspectives, boosting innovation and inclusive decision-making in society. The economic participation of women helps strengthen economies, and their leadership challenges norms, fostering more equitable communities. Women's involvement in peacebuilding enhances political stability, while gender equality advances other SDGs like poverty reduction and quality education. Hence, women's empowerment becomes foundational for building resilient, inclusive societies, making SDG 5 a cornerstone for achieving global sustainable development goals.

In India, women form about 45% of the total working-age population of 960 million, according to 2022 World Bank figures. Despite this significant presence of 432 million working-aged women, their contribution to the Gross Domestic Product (GDP) is relatively modest, accounting at just 18%. This suggests a significant unutilised economic potential (IBEF, 2023). According to McKinsey Global Institute, providing equal opportunities for women could add US$ 770 billion to India's GDP by 2025 (McKinsey and Company, 2018). However, despite the potential for growth, women's labour force participation rates (LFPR) in India remain low, at 37% according to the Periodic Labour Force Survey (PLFS) 2022–23. Based on data from the International Labour Organization (ILO), the highest LFPR is observed among women in the low-income bracket, with 58% of women engaged in economically productive work. In contrast, only 45% of women in the middle-income bracket and 53% of women in the high-income bracket join the labour force. Notably, LFPR for women has shown a downward trend across all income categories (PLFS, 2018-19). India is unique in that it is the only country, out of the 153 nations studied, where the economic gender gap is larger than the political gender gap (Global Gender Gap Report, 2020).

Entrepreneurship continues to be an important means for women to earn an income, especially in lower-income sectors, where formal employment opportunities are limited. According to data from PLFS (2021–2022), women are less likely to participate in the workforce than men, but they are more likely to be self-employed (60% of women vs. 51% of men). Notably, 60% of working women aged 15 to 59 who are working are self-employed, with around 45% running their own businesses (Sinha, 2024). This trend is evident in n both rural and urban areas, where women are pursuing entrepreneurship, often driven by the need for financial independence.

In the last three years alone, 4,691,577 women-led micro, small and medium enterprises (MSMEs) have been registered in the Government's Udyam Registration Portal (Figure 8.1.).

As evident from figure 8.1., women–owned

Contribution of women-owned MSMEs to total MSMES on Udyam portal (July 1, 2020 to Jan 31, 2024)

Category	Total	Employment	Investment (in Bn)	Turnover (in Bn)
Women MSME	4,667,278	28,407,069	1,268.45	17,149.92
MSMEs	22,819,417	151,668,034	11,372.37	167,843.58
%age of women owned MSMES	20.5	18.7	11.2	10.2

Figure 8.1. Percentage of Women-owned MSMEs on Udyam Portal
Source: Udyam Registration Portal, Government of India

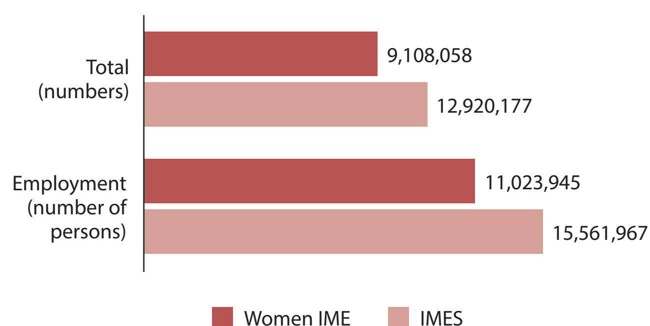

Figure 8.2. Contribution of Women-owned Informal Micro Enterprises (IMEs)
Source: Rajya Sabha, Feb 2024

MSMEs constitute 20.5% of the total MSMEs registered in India, but their contribution to employment (18.%) and investment (11.15%) is slightly lower, indicating potential room for growth and increased impact. Similarly, their contribution to the total turnover of Udyam-registered MSMEs stands at 10.22%, suggesting potential for further economic contribution (Figure 8.2.).

The Udyam Assist Platform (UAP) which registers IMEs, shows that since its inception in January 2023, women-owned IMEs constitute 70.49% of the total number registered. Their contribution to employment is also significant, at 70.84%. This data highlights the substantial presence of women-owned IMEs in the informal sector, indicating their crucial role in generating employment and economic activity.

Discussions with a Non-Banking Financial Company (NFBC), Seeds Fincap Ltd., that extends individual loans to MSMEs, showed that their portfolio was ₹3.37 billion in August 2024 and the number of active clients was 52,664. Of these 51% clients were female and 49% were male, because of the managed microfinance loan portfolios. Of the individual loans, only 17% clients are women. Seeds inform that the defaulter rate among women individual borrowers is lower, at 2.93% compared to men at 4.01%. Overall, the whole portfolio too, women are more regular in repayments compared to men.

A study by Chakravarty, Iqbal and Shahriar in 2014, through field experiments in Bangladesh, shows higher repayment rates among women compared to their male counterparts. Women display significantly better repayment behaviour in microcredit compared to men. Women are 'naturally' better credit risks, exhibiting a stronger willingness to repay loans in both individual and joint liability microcredit setups.

A 2024 report by Ugro Capital states that women-owned MSMEs employ 11% more women than male-owned MSMEs. Salary increases for women entrepreneurs are at 12%, 4% higher than for male entrepreneurs. In the manufacturing sector, women-led MSMEs have outperformed male-led businesses by creating 63% of new jobs compared to 58% by men. They also have a lower loan repayment risk (2.6% vs. 4.6% for men) and have seen a 16% rise in proprietor salaries, 11% higher than male entrepreneurs.

Further, women entrepreneurs contribute to the expenses of their households, the education of their children and the healthcare of their families, which ultimately results in an improvement in the general standard of living for their families. This also ensures greater voice and agency for them within their families as well as in the society. Women are able to assume leadership roles and make decisions both at home and in their enterprises as a result of this socio-economic transition. The case for enterprise finance to women, therefore, is both rights based and makes economic sense, hence the importance of ensuring their access to formal sources of credit, especially for the economically-vulnerable sections, as enterprises are their major pathway out of poverty and towards prosperity.

8.2. ENTREPRENEURSHIP DEVELOPMENT WITH ACCESS TO CREDIT

8.2.1. Historical Development on Women's Enterprise Finance

India's efforts to promote entrepreneurship, particularly for marginalised groups, have been driven by the belief that enterprise development

leads to economic growth. The theory, rooted in David McClelland's work from the 1960s, suggests that entrepreneurial traits such as achievement motivation and risk-bearing can be nurtured through training. Inspired by this, India's government and development banks launched numerous initiatives to foster entrepreneurship.

In the mid-1980s, the Industrial Development Bank of India (IDBI), along with other development financial institutions (DFIs) such as Industrial Credit and Investment Corporation of India (ICICI) and Industrial Finance Corporation of India (IFCI), initiated entrepreneurship development programmes (EDPs) to identify and support entrepreneurs with financing from banks. Collaborating with the Ministry of Industry and state governments, the DFIs helped establish at least 16 technical and consultancy organisations (TCOs) to provide business support services. The Entrepreneurship Development Institute of India (EDII) was also created, along with numerous other non-governmental organisations (NGOs) and institutions that conducted EDPs.

Realizing these efforts did not always reach marginalized groups, specialized programmes were introduced for women, scheduled castes and scheduled tribe (SC/ST) candidates, youths and people with disabilities. By the 1990s, this paradigm of industrial development through entrepreneurship and credit from formal financial institutions was well-established, emphasising the need for state and banking sector support for small enterprises, especially for disadvantaged groups.

The paradigm of entrepreneurship development led to the proliferation of several organisations which focussed on providing different types of support to potential women entrepreneurs. Notable among these were women's entrepreneur associations, set up in many states, e.g. the Association of Women Entrepreneurs in Karnataka (AWAKE) and the Association of Lady Entrepreneurs in India (ALEAP), with women entrepreneur members. These organisations not only promoted their own businesses, but also started EDPs to provide training and other support to potential women entrepreneurs.

The next iteration, coinciding with the growth of development banking, was grounded in the understanding that development of vocational skills will enable production, and the government provided subsidised credit along with skill training. The third paradigm, in the early 1980s, led to the proliferation of microfinance, with credit related subsidies being eliminated by 2011. The National Rural Livelihoods Programme (NRLM) replaced the earlier Swarnajayanti Grameen Swarojgar Yojana (SGSY) scheme, with a very wide palette of initiatives for women's group-based support to access formal financial services and promoting income generating enterprises.

8.2.2. Group Based Access to Enterprise Finance

The most significant game-changer over the past three decades has been the development of group-based finance to women, which is offered through two channels: the Self-Help Group–Bank Linkage Programme (SHG-BLP) and microfinance institutions (MFIs).

The annual report by National Bank for Agriculture and Rural Development (NABARD) states that SHG-BLP, launched in 1992, has grown to link 14 million SHGs with savings and 7.74 million SHGs with credit, involving ₹650.89 billion in deposits and ₹2.59 trillion in outstanding loans (NABARD, 2024). As on 31 March 2024, 1.77 billion households have been savings-linked.

NABARD also supported joint liability groups (JLGs), to facilitate credit from banks to landless farmers cultivating land as tenant farmers, oral lessees, sharecroppers and small/marginal farmers and other individuals for taking up farm, off farm and non-farm activities. As on 31 March 2024, the total bank-promoted JLGs amount to 33.13 million. A gender division of these is, however, not available. NABARD has also promoted more than 7,000 farmer producer organisations (FPOs) with a membership of 2.5 million farmers, of which about 82% are small and marginal farmers and 30% are women. Further, the Ministry of Rural Development has launched a programme called 'Lakhpati Didis' to enable women SHG members to generate an annual household income exceeding ₹100,000 on a sustainable basis.

NBFC-MFIs also provide credit to relatively low-income women, using the methodology of JLGs. Their gross loan portfolio was ₹4.33 trillion in March 2024 and their unique clients count was 78 million, reaching 720 districts (MFIN, 2024). Around 43 million clients have loans outstanding from NBFC-MFIs. The average loan amount disbursed per account during the 2023-24 financial year was ₹45,024 through the MFI channel. By contrast, the average loan per member in the SHG-BL channel is ₹27,917 per member (NABARD, 2024). Clearly, individual loans do serve the purpose of higher credit flow and expansion of women's businesses.

8.2.3. Government Credit and Support Schemes

Government credit schemes that provide financial incentives, such as subsidies and interest concessions, increase the likelihood of women entrepreneurs using these resources (Khan, Hussain and Mazhar, 2024). The authors attribute this to the subsidies lowering the overall cost of borrowing, making it more attractive for women who may not have large amounts of capital to invest upfront. Many government schemes also eliminate or reduce processing fees for women entrepreneurs, which reduces the upfront financial burden, in addition to including provisions for financial backup in case the business struggles, such as lower penalties for late payments or grace periods (Khan, Hussain and Mazhar, 2024). These safety nets provide women with a sense of security, encouraging them to take the risk of entrepreneurship.

The government offers MSME schemes to provide comprehensive support system for entrepreneurs operating small and medium-sized businesses. These schemes encompass various aspects of business development, including financial assistance (loans, subsidies and grants), skill development and mentorship, infrastructure support (land acquisition, setting up factories or stores and accessing technology) and market access.

Some of the most impactful MSME schemes catering to women-owned businesses include:

- Mudra Yojna for Women: This scheme is offered by the 'Micro Units Development and Refinance Agency' (MUDRA). The scheme offers collateral-free business loans for women, ranging from ₹50,000 to ₹1 million for women business owners in manufacturing, trading and services sectors. ₹270 million Mudra loans have been disbursed to women beneficiaries so far, as per 2023 figures (CNBC-TV18, 2023).
- Stand Up India: The scheme was launched with a vision to promote inclusivity among women-led MSMEs. This initiative encourages banks to provide loans up to ₹10 million to at least one woman-business owner, per branch. The scheme specifically focuses on financing greenfield ventures (new businesses) in the manufacturing, trading and service sectors. As on 26 February 2021, more than 81% i.e., 91,109 accounts with an amount of ₹207.49 billion had been sanctioned to women entrepreneurs under the Stand Up India scheme (Press Information Bureau, 2021).
- Mahila Samriddhi Yojana (MSY): This scheme is offered by the Small Industries Development Bank of India (SIDBI) and provides subsidised loans up to ₹2 million to women-owned MSMEs in the manufacturing sector at a lower interest rate compared to regular commercial loans.

Beyond the core MSME schemes, women entrepreneurs in India enjoy several additional benefits designed to level the playing field:

- Relaxed collateral norms: Some schemes offer easier loan approvals with minimal or no collateral requirements
- Subsidiaries on machinery and equipment: Financial assistance is provided to purchase essential machinery and equipment, reducing the initial capital investment outlay.
- Preferential access to government procurement: Women-owned businesses get a specific quota in government procurement contracts, increasing their access to market opportunities.
- Credit guarantee scheme for MSMEs extends additional benefits to women entrepreneurs, e.g., a guarantee cover of 85% compared to the general cover of 75%, and a 10% concession in annual guarantee fees.

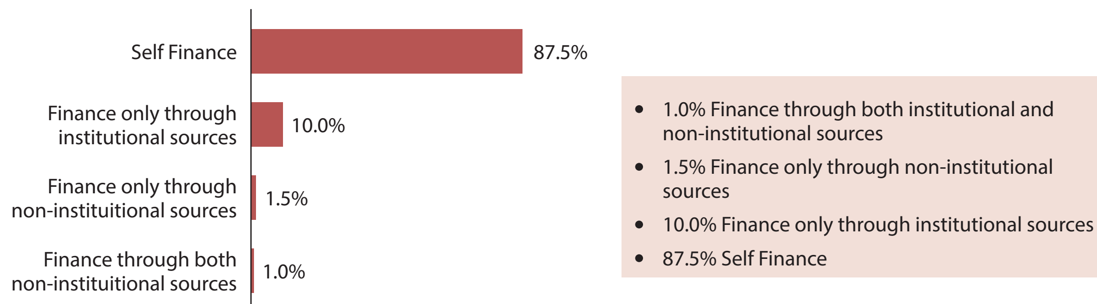

Figure 8.3. Sources of finance for Women-led MSMEs (WMSMEs)

Source: Financial Inclusion for Woman-Owned Micro, Small & Medium Enterprises (MSMEs) in India, *International Finance Corporation*

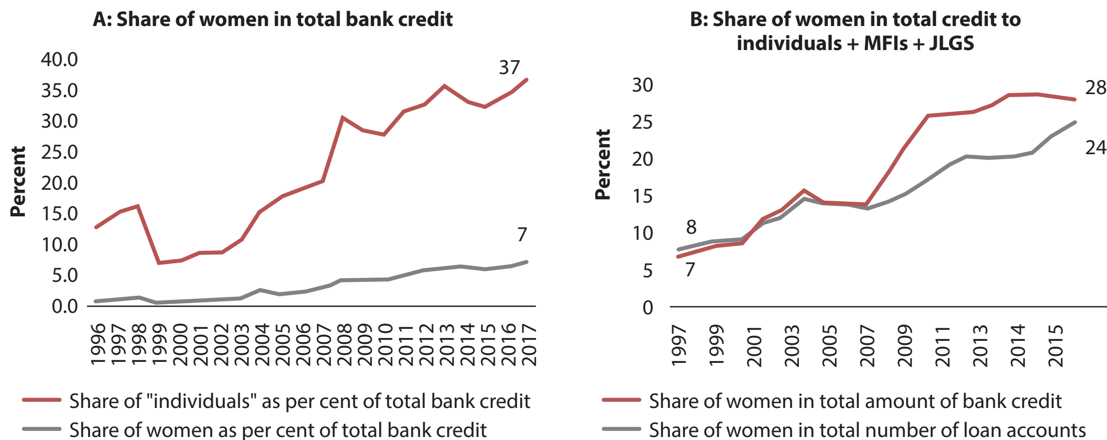

Figure 8.4. Share of Bank Credit Going to Women
Source: Chavan, 2020.

- The Prime Minister's Employment Generation Programme (PMEGP) provides a credit linked subsidy for setting up new microenterprise in the non-farm sector. This includes margin money subsidies ranging from 15% to 35% of project cost, for projects up to ₹5 million in manufacturing sector and ₹2 million in the service sector. For beneficiaries belonging to special categories, which includes women, the margin money subsidy is 35% in rural areas and 25% in urban areas.

Data reveals that only 7% of the overall outstanding loans to micro, small and medium enterprises are to women-led businesses (Figure 8.3.). According to the India SME Forum, despite their significant contribution (about 27%) to India's GDP, women-owned and led MSMEs face a glaring $158 billion financing gap.

Of the overall bank credit, 37% goes to individuals. Of this 37%, only 7% goes to women while the remaining 25% goes to men (Figure 8.4.). This means that only 19% of the total credit that goes to individuals from banks reaches women. Even when we add to this the credit that goes from MFIs, who primarily target women, the percentage of loans going to women is only 28% of the total credit to individuals from banks and MFIs (Chavan, 2020).

In addition, a very large schism exists between credit for women as group members and enterprise credit to individual women. In order to bridge this gap, the Reserve Bank of India (RBI) permitted NBFCs and SFBs to extend credit to individual borrowers outside the microfinance category, to the extent of 25% of their loan portfolio.[3] As per the RBI's norms, all collateral-free loans extended by a lender to a borrower with an annual household income worth up to ₹300,000 will be included in the microfinance category. RBI has also removed the ceiling on interest to be charged on microfinance loans. While these measures have enabled many MFIs to extend individual finance, the gap is by no means covered. Women clearly have lower access to credit services compared to men, despite the existence and growth of a vibrant microfinance industry.

8.3. THE CHALLENGES AND BOTTLENECKS

Women face constraints in starting and growing their businesses due to a lack of access to larger working capital loans. Women's entrepreneurship is also constrained by lack of access to credit. The credit to deposit ratio for women is 27%, while it is 52% for men. This could be because women seek less credit, or because, regardless of their savings, access to credit is restricted by a lack of hypothecable assets. In the absence of in-depth research on the issue, causality cannot yet be established. The challenges are manifold and may be seen through the lens of a gender equality and social inclusion (GESI) framework, which identifies three domains of barriers, and change, to achieve gender equality and inclusion.[4]

8.3.1. Access to Assets and Services

The first set of barriers relates to the lack of equal access to assets and services, which are primarily barriers created by a gender-biased enabling environment.

Women's lack of ownership of land and houses is a formidable barrier to their entrepreneurship since it impedes access to finance. Primary Agricultural

Credit Cooperative Societies (PACS) require members to have landholding in their name, which has traditionally been the reason that PACS have had predominantly male members (Sampark, 2015). Among the 1,200 women with whom Sampark works in Chiraigaon block in Varanasi, only 13.75% have their own agricultural land.

There is a dearth of up-to-date, transparent data on land ownership, let alone female land ownership. Despite constituting over 60% of the agricultural labour force in India, women own only 14% of agricultural land with a total area of 10%, which is abysmally low (Agricultural Census, 2016). Ownership records for agricultural land are notoriously opaque, as is the case in much of rural property. The government has announced a rural land mapping scheme called 'Survey of Villages and Mapping with Improvised Technology in Village Areas' (SVAMITVA) which is expected to bring transparency to rural ownership of land in a phased manner between 2020-24 using drone technology. However, the scheme's guideline remains silent on providing joint ownership to women and men on property cards. There is a real risk of considering the male resident as the default owner of household property, given inherent patriarchal biases, as we have witnessed earlier in official policies (Landesa, 2019).

Another confounding factor is that the state revenue codes, which govern agriculture, have varying degrees of discriminatory provisions in their revenue codes for agricultural land inheritance, rendering difficult the implementation of the laws for equal claim of female and male children on property. Gender bias in local institutions also leads to a neglect of women's claims, even when they are valid under a state's revenue code. The process to make the claim is also time consuming and difficult, resulting in effective denial of agricultural land to women (Deo *et al.,* 2019).

8.3.2. Gender Biased Rules of the Game

A lack of self-confidence and a fatalistic attitude often prevent women from pursuing entrepreneurial goals. Despite legal provisions, Indian society still views women as inferior, limiting their entrepreneurial efforts. women largely bear the domestic responsibilities, making it difficult to dedicate time to business ventures. Family expectations and personal responsibilities limit the time and energy women can dedicate to business. Research by Sivasakkaravarthi in 2024 highlights that in most cases, female entrepreneurs face tough competition from male counterparts, and they lack the financial resources to market and grow their businesses effectively. The research suggests that the scarcity and high costs of raw materials, coupled with limited market access, challenge women entrepreneurs. Thus, financial and personal instability reduces the capacity of women entrepreneurs to take risks (Sivasakkaravarthi, 2024).

When it comes to securing capital, the gender bias permeates institutions as well. For example, women entrepreneurs only receive 5% of the total credit all public sector banks (PSB) provide to MSMEs in India (Mondal, 2022). Women entrepreneurs consistently face skepticism from investors who perceive their businesses as risky. As per a study by Pareek and Bagrecha in 2018, women entrepreneurs face higher interest rates and stricter loan security requirements, which makes obtaining credit difficult, which in turn affects their ability to start or expand their businesses. In addition, women entrepreneurs often face disrespectful treatment from bankers and other financial institutions (Pareek and Bagrecha, 2018). The study argues that they are also held back by the lack of gender-inclusive policies and support programmes tailored to their needs. Even in the cases where support programmes for women entrepreneurs do exist, the manpower shortages in PSBs reduce their ability to serve small and medium enterprises (SMEs) adequately. Women entrepreneurs then face the challenge of inadequate implementation of such government schemes aimed at supporting them.

How does the gender bias in access to finance for women entrepreneurship play out in society? The research in 2020 shows that women entrepreneurs are less likely to apply for loans compared to men. The research attributes this partly to fear of rejection or self-exclusion, where women anticipate that they are less likely to obtain a loan, leading them to avoid applying altogether. When women do apply for loans, they are less likely to be approved than their male counterparts (Gimeno, de Andres, and de Cabo, 2020). The research goes on to show that in the first year of a business, women-led companies are about 10% less likely to secure a loan than male-led businesses, and while this disparity continues in the second year (approximately 6% less likely), it does disappear after two years once more financial information becomes available about the company.

Many women entrepreneurs, especially in rural areas, have limited financial literacy. This lack of knowledge makes it difficult for them to navigate loan processes or manage their finances effectively. Complex application processes, lengthy approval times and a lack of clear communication

from financial institutions add to their woes. Seeds further informed that due to inherent gender bias among the loan assessment teams, applications of women are subject to greater security because they are perceived as less capable or trustworthy. Gender biases of staff can affect their loan decisions. Seeds revealed that although women clients are marginally higher in number, the average loan size for women is ₹104,000 compared to ₹113,000 for men.

Even when official support schemes are available, the ability to understand and take advantage of them remains a challenge without adequate financial training and mentorship. Further, rural areas are underserved by financial institutions, making it physically and logistically challenging for women to approach financial institutions. Women entrepreneurs face additional constraints such as cultural expectations, unpaid care responsibilities and limited access to resources and networks compared to men.

8.3.3. Voice Influence and Agency

For financial inclusion strategies to be both equitable and empowering, women's access to financial products alone is insufficient; they must also be educated on controlling and managing the benefits from these products. The Inclusive Finance India report 2021 suggests that customised product development based on region, culture and social structure might help in addressing these challenges. Digital financial inclusion is also something that needs to be focussed on. Building capacity at the grassroots level, through both technological solutions and accessible master trainers, could be a means towards achieving this (Inclusive Finance India, 2021).

Organisations like Sampark go beyond providing access to financial products by empowering rural women through financial education and capacity building. The major population, 90% of SHG women belong to schedule caste like Rajbhar, Harijan and Mallah and around 67% of them are illiterate. Most of the SHG women households have only one earning member and the number of dependents is more; this makes average income per household member per day quite minimal. In 60% of the households, average income per household member is less than ₹ 50 per day. By supporting SHGs and offering training in financial management and entrepreneurship, Sampark enables these women to not only access but also effectively control and benefit from financial products.

Encouraging more women to participate in microcredit could be a key strategy for the success of financial inclusion programmes. However, the persistence of discriminatory attitudes prevents this with financial institutions doubting women's capabilities to manage successful businesses. As male family members are reluctant, women entrepreneurs rely on personal savings or loans from friends and relatives in the absence of formal financing. This underscores the need for policy changes for financial inclusion and enterprise promotion for those with low household incomes, who are otherwise excluded.

8.4. BREAKING THE BARRIERS: GOOD PRACTICE

A very large number of initiatives have been implemented to advance women's economic empowerment, ranging from financial literacy, financial inclusion, SHG-Bank linkages, growth of the microfinance industry, several skill and entrepreneurship development initiatives and use of technology to break the barriers to access to finance and enterprise development. This chapter focuses on three such initiatives and highlights their potential for adaptation and scale up.

8.4.1. Access to Services: One Stop Shop

The enterprise promotion initiatives through entrepreneurs' associations and DFIs have been mentioned earlier. In addition, many countries have tried approaches such as One District One Product.[5] Many women-owned enterprises operate in the informal sector, which limits their growth, reduces their access to government support and creates challenges for taxation and regulatory compliance. In this context, One-Stop Shop (OSS), is a good practice that has been established in many countries. Some examples of such government-led OSS initiatives are WE Hub (Telangana, India), Women Entrepreneurship Platform (WEP, India) and Sub-Portal for Women Entrepreneurs (Vietnam) (Behuria and Gooty, 2024).

OSS (Behuria and Gooty, 2024) refers to a centralised hub providing multiple services, support and resources in one place; helping women entrepreneurs with various aspects of their business journey. The essential components of an OSS are:

- streamlined business registration processes to formalise businesses and enable access to finance and government support;
- provision of financial products, alternative financing options and training in financial literacy, digital literacy and leadership training, particularly focused on women;
- simplified digital applications for registration and access to services; and

- building strong entrepreneurial networks to provide mentorship, peer learning and emotional support, enhancing business success

While OSS initiatives for women entrepreneurs provide numerous advantages, they also have some potential limitations. Effective OSS models often require coordination across multiple government agencies and departments. Poor communication, bureaucratic inefficiencies, or lack of coordination can lead to delays, inconsistent information and a suboptimal user experience. Establishing protocols for inter-agency collaboration with clear communication guidelines can improve efficiency. In addition, many OSS initiatives are dependent on government or donor funding. Without sustainable financial models, these platforms may face funding shortfalls or be discontinued, leaving women entrepreneurs without critical support. Hence, developing public-private partnerships to share the financial burden and build a sustainable funding model is the key.

8.4.2. Powering Women's Collectives to Enhance Access to Finance

SHGs are a prime example of helping low-income women gain access to finance, using social collateral instead of physical or financial collateral. In most country, the second level of these collectives, the SHG federations, have been formed, but stories of their success in promoting entrepreneurship are few.

The Mahila Arthik Vikas Mahamandal (MAVIM), formed by the Women and Child Department of the Government of Maharashtra, provides a fine example of systematic development of women's collectives, SHGs and their federations, and enabling them to promote women's individual and collective enterprises. The community managed resource centres (CMRCs), are block-level federations of SHGs, registered as Societies or Trusts, and operate independently while receiving handholding support from MAVIM. Their primary roles include providing quality assurance and supervision for SHGs, creating bank linkages and promoting livelihoods, making their operations locally sustainable. They have initiated enterprises like agri-input centres and *dal* mills, which offer essential services and products to SHG members, contributing to the economic sustainability of these women's collectives. By 2021, the CMRCs had established 496 social enterprises, with about 12% of their income (₹11.5 million) coming from collective CMRC enterprises (Premchander, Mokkapati and Pingali, 2021). They had also facilitated a flow of over ₹15 billion of bank finance to SHGs. This is an example of enhancing access to assets and services for women.

8.4.3. First Loan Default Guarantee

MAVIM has partnered with International Fund for Agricultural Development (IFAD) for a programme for women's empowerment, Tejaswini, for several years, to build SHGs and CMRCs. In the latest IFAD-MAVIM programme, Nav Tejaswini, the focus is to enable SHG members start and grow enterprises with individual loans. MAVIM used the financial instrument of First Loan Default Guarantee (FLDG) to incentivise banks to give uncollateralised loans to individual women entrepreneurs. Under this initiative, the CMRCs deposit 5% of the loan amount as a guarantee with SIDBI, which then enables banks to offer non-collateralised loans to individual women. Under this initiative, ICICI Bank has provided loans for 6,304 women, amounting to ₹71.18 billion. The CMRCs have become strong intermediaries between women entrepreneurs and the banking system.

Another barrier identified was the lack of credit history and Credit Information Bureau (India) Limited (CIBIL) scores for many women. MAVIM worked to help women establish credit histories, overcoming the traditional constraints of collateral-based lending. It has collaborated with Microsoft and ICICI Bank to create financial systems where women can seamlessly access loans based on their credit history. These partnerships have not only increased the number of women able to access loans but also demonstrated the viability of collateral-free lending to women entrepreneurs.

In addition, MAVIM has developed financial products under schemes such as the PMEGP and the Chief Minister's Employment Generation Programme (CMEGP). These programs offer loans with reasonable interest rates (around 9.5%) for women setting up their own businesses, which is significantly lower than the group loan interest rates of 16-18%.

MAVIM also works with various sectors, such as tailoring, beauty salons and food processing, where it provides technical and financial support for women to establish their own businesses. A notable example is MAVIM's collaboration with L'Oréal, where women receive training in the beauty sector and set up their own salons, supported by government funding and corporate social responsibility (CSR) initiatives from L'Oréal. Under this initiative, women receive thorough training and funding to open their own salons, with 30% of the financial support coming from the government

and 70% from MAVIM and loans. This project's average cost per salon is around ₹2.5-3 million and it includes a full suite of equipment and financial planning support.

To enhance market access, MAVIM has focused on branding and marketing products produced by women. Although challenges exist in terms of scaling up these operations, particularly on platforms like Amazon, MAVIM has developed its own portal in collaboration with the Women and Child Department to ensure direct sales of products made by SHGs.

MAVIM's efforts in transitioning from group-based to individual-based financial empowerment have paved the way for long-term financial independence for women. The organisation has also fostered sustainability by ensuring ongoing market linkages, government contracts and partnerships with corporate entities. MAVIM's approach shows that with the right financial products, training and institutional support, women can transcend traditional barriers and build sustainable livelihoods, contributing to the broader goal of women's empowerment in India.

Access to formal finance is a critical ingredient in the promotion of women entrepreneurship, and such access is not just a welfare measure, access to credit is a right that needs to be ensured, for all excluded groups, including women.

8.4.4. Credit Scores for SHG Members

Another important initiative for transiting women SHG members to individual enterprise loans is by developing their credit scores using their credit histories as group members. While this has been possible for MFIs, who extend loans to individual members and can assess individual creditworthiness from their own records, this was a gap in SHG-Bank Linkage. MAVIM has partnered with MicroSave to develop a tool to evaluate women's creditworthiness in a way that considers both formal and informal business practices, e.g., cash flow, business operations and digital records.

These are just some examples of outliers that demonstrate the breadth, width and complexity of the interventions that are needed to truly include women entrepreneurship and make it an even playing field, regardless of gender.

8.4.5. Measures by Formal Financial Institutions

Seeds Fincap stated three types of measures they take to advance their credit to women entrepreneurs. To begin with, they make efforts to hire more female field staff, as they are better able to build trust with potential women borrowers and women entrepreneurs are able to ask them their concerns. Seeds have experienced that a gender diverse staff are better able to provide explanations of complicated financial concepts and enhance the client experience. This is particularly useful in rural locations and conservative settings where interactions with male employees of formal financial institutions may be constrained by social and cultural conventions. Women employees may better understand the gendered constraints faced by their clients, e.g., balancing work and family obligations, social expectations, etc. Such empathy results in more individualised advice than men can offer.

Women staff members also serve as role models to aspiring women entrepreneurs.

8.5. THE WAY FORWARD

Increasing women's access to enterprise finance is not just a matter of finance but requires a whole set of actions in different domains of action, to enable such access.

1. **Make a firm policy commitment:** The government needs to design and implement gender-transformative policies, which require resourcing programmes, building inclusivity, transparency, consistency and accountability (Thomas *et al.,* 2018). SDG 5.a. suggests undertaking reforms to give women equal rights to economic resources, as well as access to ownership and control over land and other forms of property, financial services, inheritance and natural resources.

- **Collect, analyse and publicise gender disaggregated data:** There needs to be a concerted effort to address data gaps and gender lens should be applied to all areas of economic empowerment, including policies and support initiatives, and the implementation and impact of these. Some of the SDG5 indicators in India take these aspects into account and include gender disaggregated data on operational landholdings, agricultural labourers, wages of casual and agricultural labourers and exclusive women's SHGs among Bank linked SHGs. Other indicators have been set for measuring financial inclusion include the percentage of women having an account at a formal financial institution and the number of female and male borrowers per 100,000 adults.[6]

  Consolidated and consistent gender disaggregated data across all aspects of women's livelihoods—education, skill training, employment and entre-

preneurship—at district, state and national levels will enable assessment of the effectiveness and validity of policies. State and non-state actors and think tanks need to consolidate the existing databases, identify data gaps and undertake nationwide surveys to gain insights that can inform formulation of policies that advance gender equalities rather than inequalities.

- **Remove systemic barriers to women's ownership of property:** Good use of technology coupled with policy intent can enable women to augment their ownership of property, which will provide a firm foundation to access both cooperative and collaterised credit from formal financial institutions (FFIs).
- **Increase government and DFI support for women's enterprise finance:** As seen in the above analysis, women's access to assets and services prepares the foundation of their economic empowerment. Their access to education, skills, jobs and enterprise are best assured by government programmes that promote women's economic independence. Government and DFIs need to invest in building women's business skills. Another area in which support institutions can help is by enabling women to join value chains and strengthening value chains to become more gender-transformative.
- **Promoting the growth of formal enterprises:** Most women's enterprises are informal and access to finance from formal financial institutions calls for the enterprises to be formal. This needs to be promoted and aided by NGOs, government and international agencies such as ILO.
- **Employ technology to solve demand and supply side problems:** Women need to learn how to do all financial transactions on their mobiles and use technology to increase efficiency in production, marketing, account keeping, etc. Similarly, institutional stakeholders can use technology to prepare credit scores of women from their SHG transactions, enabling the assessment of their creditworthiness, which in turn creates access to credit.
- **Mandate and support FFIs to extend loans to women's businesses:** As seen above, supply side initiatives need to incentivise financial institutions to extend credit to women. Currently, this is done by including loans up to ₹ 300,000 under priority sector lending. Similarly, incentives are needed for increasing women staff for loan applications and assessment teams, enabling more gender-responsive processes and designing gender-sensitive financial products, e.g. uncollateralised loans backed by loan guarantees. Focused approaches such as cluster-based approaches, such as those envisaged by Seeds, may be piloted; these have the potential to ease access to the FFI and establish a positive environment around women.
- **Enhance capacities of all FFI staff and encourage FFIs to employ more women at all levels:** Working women create role models and their confidence and mobility ignite entrepreneurial aspirations among potential clients. Gender-responsiveness capacities need to be built among staff at all levels to counter the prevailing gender-biased norms with evidence about women's productive use of money and good repayment discipline.
- **Strengthening voice, influence and agency of women:** The example of MAVIM shows that a tiered set of women-owned institutions has the capacity to influence FFIs, gain trust and design schemes to overcome barriers to access to credit. MAVIM's SHG federations, the CMRCs are an example of collectives that were not only able to channel credit to SHGs, but have also been instrumental, through a Credit Guarantee Fund, in channeling bank finance to individual micro entrepreneurs. The design and strengthening of women's peer support networks is thus a critical step in initiating innovative pilot programmes, and eventually, in changing policies and programmes and enhancing access to these.

In conclusion, a just transition should be inclusive for all. Skill development programs, particularly focused on green jobs in Science, Technology, Engineering, and Mathematics (STEM) and renewable energy sectors, can help women access emerging opportunities. Reskilling programmes should focus on equipping women with the expertise needed for higher-paying, technical roles in decarbonising sectors like electric vehicles and renewable energy. Formalising women's work, especially in informal enterprises, and recognising care work can provide better access to financial support and government resources. Social safety nets such as health insurance, childcare services and pensions should be universally accessible to women, especially those in informal roles. A safe and supportive work environment is essential to improve women's participation. Customised solutions for vulnerable groups, including rural women, are essential to address regional disparities.

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ENDNOTES

1 This is currently named the Deendayal Antyodaya Yojana, the DAY-NRLM programme.

2 JLGs promoted by NABARD are small groups of enterprising poor and marginalised farmers, who can avail of bank credit. The term JLG is also used for groups of women who take credit from non-banking finance companies which are microfinance institutions (NBFC-MFIs) and small finance banks (SFBs). Typically, a JLG funded by banks comprises 4-10 individuals, and those funded by NBFCs comprise of 30-35 women, who give a mutual guarantee to take uncollateralised loans as individuals. All group-based models play an important role in creating access to finance for relatively low-income categories of women.

3 Prior to 2022, NBFC MFIs could extend loans to individuals only up to 15% of their portfolio.

4 Women are not one monolithic category, intersecting categories like their poverty, caste, ethnicity, geographical location and other factors cause exclusion. This chapter remains limited to a gender analysis, with no scope to take up an analysis based on intersectionalities.

5 The approach was called One Thambone One Product in Thailand, and has been adapted widely in India, to promote textiles, handicrafts and food products.

6 Indicators 5.a.1 to 5.a.8

Unlocking Financial Inclusion Through Next Generation Artificial Intelligence (NGAI)

Ramesh Srivatsava Arunachalam

9

9.1. INTRODUCTION

Financial inclusion has become a global imperative, particularly in emerging economies where large segments of the population remain excluded from formal financial systems. In India, despite phenomenal achievements in banking and financial services, millions of low-income individuals in marginalised value chains—especially small and marginal farmers, as well as Small and Medium-sized Enterprises (SMEs)—continue to face barriers in accessing essential financial services such as credit, insurance, and other forms of financial deepening. Traditional banking models, often rigid and reliant on conventional credit scoring methods, have historically struggled to cater to these underserved communities, who typically lack formal credit histories, financial documentation, or the means to engage with formal institutions. This is where **Next Generation Artificial Intelligence (NGAI) steps in**—a revolutionary force that promises to reshape the financial landscape by offering tailored, inclusive solutions that can overcome these long-standing challenges.

NGAI refers to a category of artificial intelligence (AI) capable of creating new outputs—be it personalised financial products, credit risk assessments, or even customer engagement strategies—by analysing vast quantities of data, understanding causality, identifying intricate patterns and more. Unlike traditional AI, which often depends on structured data such as credit scores or income statements, NGAI can harness and interpret non-traditional, unstructured data. This includes information from mobile payments, e-commerce transactions, social media behaviour, utility bills, satellite imagery and much more. By combining these diverse data sources and using causal analysis, NGAI enables financial institutions to make more accurate and comprehensive assessments of an individual's or business's financial health, even if they lack formal documentation or credit histories.

India, with its vast population of rural residents, informal sector workers, and small businesses, presents an ideal testing ground for the transformative potential of NGAI. The country's financial landscape is characterised

BOX 9.1. EXAMPLES OF NGAI IN ENHANCING CONVENTIONAL FINANCIAL INCLUSION IN INDIA

Major Indian banks like **HDFC Bank,**[i] **ICICI Bank,**[ii] and **SBI,**[iii] alongside a growing number of FinTech innovators like **Credit Vidyaa,**[iv] **Indifi,**[v] and **SatSure,**[vi] are already applying NGAI to expand financial access. From automated loan underwriting and personalised financial advice to dynamic risk assessments for farmers and SMEs, these institutions are using NGAI to design financial products tailored to the unique needs of previously excluded populations. NGAI-powered models can provide not only faster and more efficient services but also personalise them to fit individual circumstances, making the financial ecosystem far more inclusive and adaptive. For instance, agri-lending platforms like **SatSure** are using NGAI-driven satellite data to assess crop health and forecast yields, allowing farmers to access loans based on real-time agricultural conditions rather than outdated financial metrics.

by extreme diversity, where rural farmers rely on seasonal income, urban gig workers have no formal employment records, and small shop owners operate on inconsistent cash flows. Traditional banking systems have struggled to serve these diverse groups due to their reliance on structured financial data that these individuals often do not possess. NGAI is proving to be the game-changer in this scenario. It allows financial institutions to evaluate creditworthiness in new ways—leveraging mobile payment histories, Unified Payments Interface (UPI) transaction data, telecom usage, satellite images of crop health, and much more to determine loan eligibility and offer tailored financial solutions.

The scope of NGAI in driving financial inclusion extends beyond just credit scoring and lending. It also plays a crucial role in reducing transaction costs, providing fraud detection, and offering personalised financial education.

BOX 9.2. EXAMPLES OF NGAI IN DRIVING DOWN DELIVERY COSTS IN FINANCIAL INCLUSION IN INDIA

AI-driven chatbots and virtual assistants, widely adopted in mobile banking platforms such as **PhonePe**[vii] and **Paytm,**[viii] as well as **mainstream banks like ICICI,**[ix] **HDFC,**[x] and **SBI**,[xi] automate customer service interactions, reducing operational costs and making financial services more affordable for low-income users. Meanwhile, AI-powered fraud detection systems, employed by **UPI**[xii] and other digital payment platforms, constantly monitor transaction patterns to detect and prevent fraud, enhancing trust in the digital financial system.

Furthermore, NGAI can be instrumental in providing personalised financial literacy programmes, delivering advice and learning materials in local languages and dialects, making financial education more accessible to rural populations.

The experiences of Indian financial institutions in applying NGAI offer a wealth of insights into both the opportunities and challenges of this technology. By learning from these examples, NGAI can be harnessed to create more inclusive financial systems globally. Financial institutions must adopt a balanced approach that integrates cutting-edge technology with human oversight, ethical AI practices, and regulatory compliance, to ensure that NGAI's benefits are distributed equitably. Indeed, collaboration between governments, financial institutions, technology providers, regulatory bodies, and other stakeholders will be vital in shaping an inclusive financial future where AI plays a pivotal role in empowering those who need it most.

9.2. NGAI AND FINANCIAL INCLUSION: APPLICATIONS IN THE INDIAN CONTEXT

What are the key applications of NGAI with regard to financial inclusion in the Indian context? Credit Accessibility & Alternative Scoring, Automated Loan Underwriting, Warehouse Receipt Financing for Small Farmers, Transaction Cost Reduction for Low-Income Users, Personalised Financial Education for SMEs and Farmers, Localised Financial Products for Small Businesses and Farmers, and Regulatory Compliance & Fraud Detection for SMEs and Farmers are seven key applications discussed in this section. The section delves into the details of these applications and outlines their transformative capabilities while examining challenges and critical considerations.

9.3. FINANCIAL INCLUSION APPLICATION SCENARIO # 1: REVOLUTIONISING CREDIT ACCESSIBILITY THROUGH ALTERNATIVE SCORING

One of the most significant ways NGAI enhances financial inclusion is by creating alternative credit scoring models. Traditional credit scoring systems rely heavily on structured financial data such as credit histories, income documentation, and employment status. These models often exclude individuals such as freelancers, gig economy workers, small business owners, and those in informal economies—groups that may lack formal financial records but still possess the ability to repay loans. NGAI plays a transformative role in enhancing financial inclusion, particularly in credit accessibility and alternative scoring for underserved populations. By leveraging these AI-driven solutions, institutions can now reach individuals and small businesses previously excluded from traditional financial systems.

For instance, **Credit Vidyaa**[xiii] exemplifies the power of NGAI in evaluating the creditworthiness of gig workers and small retailers, who often lack formal financial histories. By analysing alternative data sources like telecom usage and payment behaviour via UPI, AI models create comprehensive profiles that allow these individuals to access and use credit. The use of such non-traditional data provides financial institutions with a clearer picture of potential borrowers' financial behaviour, which

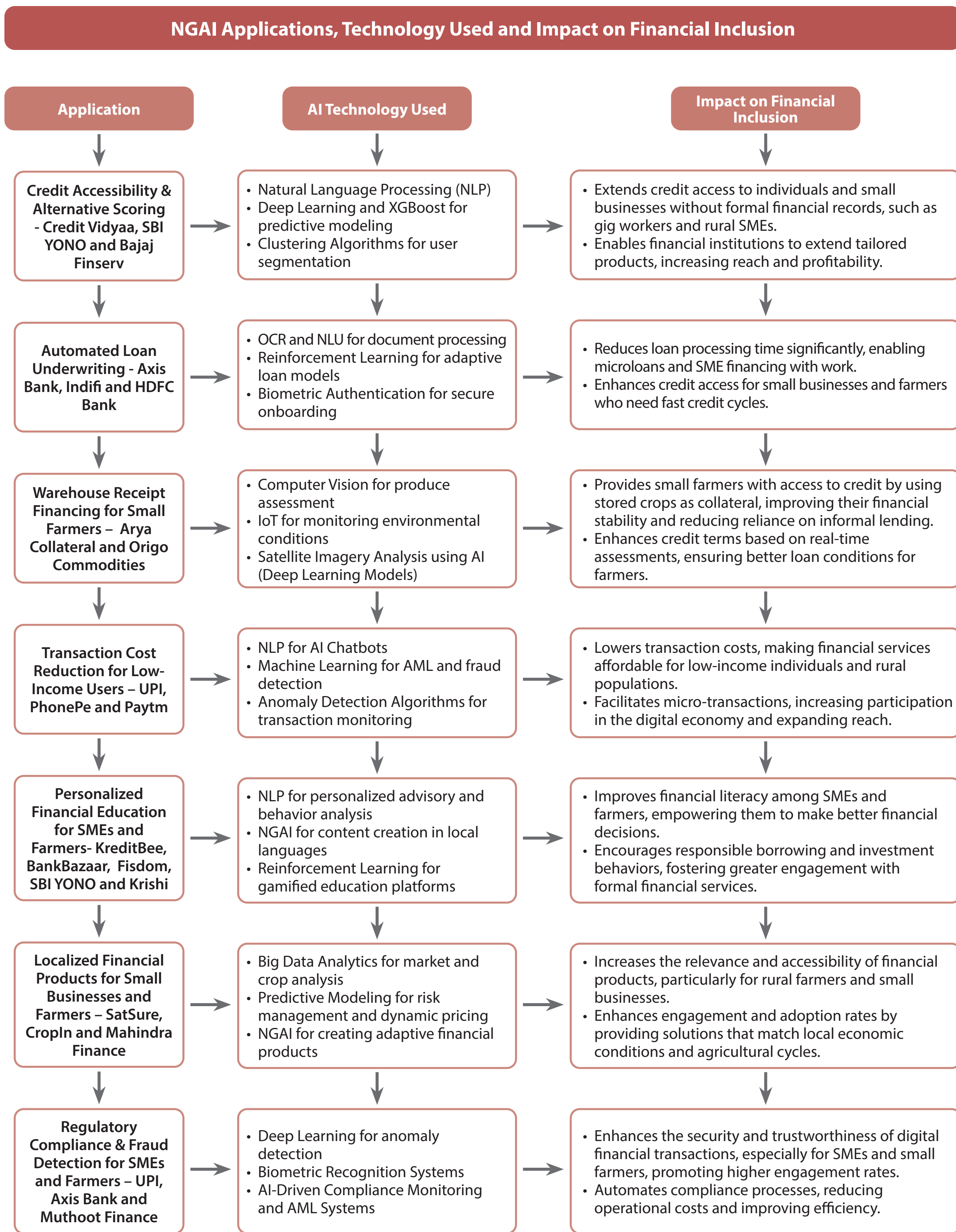

Figure 9.1. **NGAI Applications, Technology Used and Impact on Financial Inclusion**

was previously inaccessible, helping to bridge the gap for the unbanked.

Similarly, **SBI YONO**[xiv] utilises NGAI models to offer credit services to rural borrowers. By integrating UPI and mobile transaction data into these models, SBI can build credit profiles for individuals who lack conventional credit histories. This has proven particularly valuable in rural areas where traditional banking infrastructure is limited. Through NGAI, SBI YONO empowers these borrowers with access to financial services, significantly increasing the reach of its credit offerings.

Bajaj Finserv[xv] is another example, applying NGAI to assess small business creditworthiness by analysing transaction data from point-of-sale (PoS) machines and e-commerce activities. For many SMEs that do not have extensive financial documentation, this innovative use of AI helps create a robust credit assessment model. By evaluating transaction data and digital footprints, Bajaj Finserv can extend credit to small businesses, thus supporting entrepreneurial growth and economic inclusion.

Thus, NGAI is revolutionising credit accessibility by analysing a broader range of data to build comprehensive credit profiles for underserved individuals and SMEs. Real-world applications, such as those seen in Credit Vidyaa, SBI YONO, and Bajaj Finserv, demonstrate the potential of NGAI to extend financial services to previously excluded groups, offering tailored products and improving financial inclusion. However, as this technology advances, careful attention must be paid to privacy and bias to ensure equitable outcomes for all. **Table 9.1** lists the key differences between traditional and NGAI-led credit scoring based on practical applications in India.

BOX 9.3. HOW NGAI CREDIT MODELS ARE ENHANCING FINANCIAL INCLUSION?

NGAI models are revolutionising credit risk assessment by moving beyond structured data, such as transaction histories, to incorporate vast amounts of unstructured data—ranging from digital behaviours and social media interactions to mobile payments and other digital footprints. By utilising advanced machine learning algorithms, such as **Random Forest** and **XGBoost,** these AI models can merge diverse data streams to offer more accurate, nuanced risk assessments. Clustering algorithms further refine this approach by segmenting borrowers into distinct risk categories, enabling financial institutions to tailor products and services to meet the specific needs of each group.

In addition, the integration of **Natural Language Processing (NLP)** and **Deep Learning** in AI-driven credit models significantly enhances their ability to process and analyse complex, unstructured data. These technologies boost **predictive modeling,** allowing financial institutions to forecast a borrower's likelihood of default with greater precision. By analysing diverse data points, AI systems empower lenders to make more informed, data-driven decisions, ultimately leading to **greater financial inclusion**. This approach not only opens doors for borrowers with limited or no credit histories but also reduces lending risks, creating mutually beneficial outcomes for both lenders and borrowers.

Table 9.1. Key Differences between Traditional and AI-led Credit Scoring Based on Practical Applications in India

Aspect	Traditional Credit Scoring Approach	Transformation with NGAI and Causality in Credit Scoring
Incorporating Unstructured Data in Digital Silos	Traditional credit scoring focuses on structured data such as income, employment, and credit history.	NGAI analyses unstructured data (e.g., mobile payments, utility bills, social media behaviour, data in digital silos through DBT schemes, land record digitisation, etc.) to assess creditworthiness, leading to improved and more inclusive credit scoring.
Dynamic Credit Risk Models	Relies on static models using historical data that may not reflect a borrower's current financial status.	NGAI-powered dynamic models update continuously with real-time data, offering more accurate and personalised credit scoring that reflects current borrower behaviour.
Credit Risk Simulation and Scenario Analysis	Limited ability to predict borrower behaviour under different financial conditions.	NGAI enables credit risk simulation, allowing prediction of borrower responses to various scenarios, improving credit scoring for those without traditional credit histories. Advanced structural equations (and causal) modeling predict default and delinquency through a lot of dynamic IF-THEN scenarios.

9.4. FINANCIAL INCLUSION APPLICATION SCENARIO # 2: ACCELERATING LOAN UNDERWRITING AND APPROVAL PROCESSES

Loan underwriting has traditionally been a time-consuming process, involving document verification, manual assessments, and multiple approval rounds. These inefficiencies can create barriers for small or short-term loans that require quick turnaround.

NGAI is transforming this process by streamlining **automated loan underwriting,** enhancing credit accessibility, and making capital more accessible to small businesses and underserved populations, particularly in regions where traditional banking infrastructure is limited. NGAI leverages advanced technologies to automate document verification and dynamically assess real-time data, making loan processing faster and more efficient, offering a lifeline to SMEs, farmers, and individuals who need quick access to capital.

For example, **Axis Bank**[xvi] employs AI-driven underwriting systems that integrate digital payment and business transaction data to automate loan approvals for SMEs. Using Optical Character Recognition (OCR) and Natural Language Understanding (NLU), the bank verifies critical documents such as business licenses, invoices, and bank statements swiftly and accurately. This minimises the need for manual intervention, reducing processing time and enabling SMEs to secure financing more quickly and with fewer hurdles.

Similarly, **Indifi,** a digital lending platform, leverages AI[xvii] to process data from UPI transactions and IoT-enabled PoS devices. These models analyse real-time payment and sales data to perform dynamic credit assessments for small businesses lacking extensive financial documentation. This approach not only expedites the approval process but also tailors credit to immediate business needs, providing a much-needed solution for companies requiring fast, flexible loans.

HDFC Bank[xviii] offers another compelling example by utilising AI for real-time underwriting and biometric-based authentication. By using biometric data such as fingerprints and facial recognition, the bank ensures secure borrower authentication, even in remote or underserved regions. This real-time underwriting process minimises delays, ensuring timely access to capital for small-scale businesses operating in fast-paced environments, enhancing their operational agility.

Thus, NGAI is revolutionising loan underwriting by automating document verification, incorporating real-time data, offering adaptive loan models, and making them more inclusive so that they cater to the needs of SMEs and farmers. Examples from Axis Bank, Indifi, and HDFC Bank demonstrate how AI is making loan processing faster, more secure, and more inclusive. However, ensuring that these systems are accessible in regions with limited connectivity and addressing digital literacy challenges will be crucial to expanding financial inclusion further. Table 9.2. Organises the key advantages, challenges, and solutions for each aspect of AI-driven inclusive loan models.

Table 9.2. Organises the key advantages, challenges, and solutions for each aspect of AI-driven inclusive loan models

Aspect/Application	Advantage/Description	Issue/Solution
Adaptive Loan Terms	AI models dynamically adjust loan terms, providing flexibility for borrowers with variable income, such as farmers and SMEs.	**Challenge:** Inconsistent internet connectivity or biometric failures may hinder system performance. **Solution:** Adaptive biometrics with multi-alternative-factor authentication (e.g., iris scan as a fallback if fingerprint fails) can improve access and reliability in low-connectivity areas.
Increased Approval Rates	AI-powered personalised underwriting, based on real-time borrower behaviour, increases loan approval rates and reduces financial pressure by extending loan terms.	**Challenge:** Low digital literacy, especially in rural areas, can limit AI- platform adoption. **Solution:** Conversational payment systems can improve accessibility and make the learning process seamless by enabling user-friendly, on-the-go digital and process literacy for low-income customers.
Document Digitisation and Analysis	AI using NLP analyses and verifies documents, cross-referencing other data sources to streamline loan processing.	**Challenge:** Ensuring data accuracy and regulatory compliance, particularly with concerning privacy. **Solution:** Regular audits and the integration of real-time database integration, where legally feasible.
Automated Verification and Identity Checks	AI uses biometric data (e.g., fingerprint, facial recognition, voice analysis) to securely verify identities, even for individuals lacking traditional IDs.	**Challenge:** Privacy concerns and limited access to technology may restrict the use of biometric systems. Audio deepfakes may cause problems in authentication. **Solution:** Secure data encryption and expansion of digital infrastructure are crucial.

Aspect/Application	Advantage/Description	Issue/Solution
Integration of Real-Time Data Streams	AI integrates real-time data from various sources, dynamically adjusting risk assessments based on live data. This enhances predictive ability with regard to default and delinquency, in real time.	**Challenge:** Handling data from unstable or volatile sources. **Solution:** Implementing redundant data checks and diversifying data sources and triangulating the data can mitigate risk.

9.5. FINANCIAL INCLUSION APPLICATION SCENARIO # 3: WAREHOUSE RECEIPT FINANCING

NGAI is significantly advancing **warehouse receipt financing** for small farmers, enabling them to access credit using their stored agricultural produce as collateral. By incorporating technologies such as computer vision, IoT devices, and satellite imagery, NGAI optimises loan conditions based on real-time assessments of crop quality and environmental conditions. This provides farmers with greater financial stability and reduces their dependence on informal lenders.

For example, **Arya Collateral**[xix] leverages AI-driven IoT systems to monitor environmental conditions within warehouses where agricultural produce is stored. IoT devices track parameters, such as temperature and humidity, to maintain optimal storage conditions. This real-time data feeds into AI models that dynamically adjust loan valuations based on the quality of the stored crops. This approach not only ensures the preservation of crops but also enables improved loan terms for rural farmers, providing them with much-needed access to credit.

Origo Commodities[xx] takes a slightly different approach by using AI for quality analysis of agricultural produce. Using computer vision, Origo's AI models assess the quality and quantity of crops stored in warehouses, which then serve as collateral for loans. This automated quality analysis allows small farmers to receive credit based on the actual value of their commodities, streamlining the financing process and offering them better financial support compared to traditional methods.

Table 9.3, using the Indian experience cited above, highlights the use of AI-driven technologies in warehouse receipt financing, their benefits for small farmers, and the challenges that need to be addressed for full potential realisation.

Thus, NGAI is revolutionising warehouse receipt financing by enabling small farmers to leverage their stored produce as collateral for loans. Examples such as Arya Collateral, and Origo Commodities highlight the potential of AI to enhance loan terms, improve credit access, and ultimately empower farmers. With the right infrastructure and safeguards in place, AI can play a pivotal role in boosting financial inclusion in rural areas.

9.6. FINANCIAL INCLUSION APPLICATION SCENARIO # 4: LOWERING TRANSACTION COSTS AND EXPANDING FINANCIAL ACCESS

High transaction fees are a significant barrier to financial inclusion, especially for low-income individuals who cannot afford to pay for traditional

Table 9.3. AI-driven Technologies in Warehouse Receipt Financing: Challenges and Benefits from Practical Applications in India

Aspect	Description/Advantage	Issue/Solution
AI-Driven Technologies in Warehouse Receipt Financing	AI systems incorporate advanced technologies like computer vision for produce assessment, IoT for environmental monitoring, and satellite imagery for deep learning analysis. These technologies ensure produce safety and quality, enabling dynamic, real-time loan condition adjustments.	**Challenge:** The deployment of IoT infrastructure in rural areas is limited. **Solution:** Investment in rural IoT infrastructure is necessary for the system to function effectively.
Benefits for Small Farmers	AI-enhanced systems provide real-time assessments, ensuring that small farmers receive loan conditions based on up-to-date data, improving their access to formal credit channels.	**Challenge:** Ensuring transparency and accuracy in AI-based assessments is crucial to maintain farmer trust. **Solution:** Continuous monitoring and verification of AI assessments can help build and maintain trust.
Improved Loan Conditions	AI tools adjust loan valuations dynamically based on real-time data, allowing small farmers to secure loans that are better aligned with the value of their collateral, improving financial stability.	**Challenge:** The complexity of real-time data processing may create operational hurdles. **Solution:** Streamlining data processing systems and providing training for users can mitigate operational challenges.

banking services. NGAI offers innovative solutions to minimise these costs, making financial services more accessible and affordable.

NGAI is playing a crucial role in reducing transaction costs for low-income users, enabling greater access to financial services in underserved communities. By automating various processes, AI allows financial institutions to offer low-cost, efficient services, while also improving security and compliance.

Virtual Assistants/Chatbots: One powerful application of AI is in the use of **virtual assistants and chatbots** to provide automated customer support. For example, **PhonePe,**[xxi] a leading Indian digital payments platform, HDFC Bank,[xxii] and other financial institutions use AI-powered chatbots to assist users with real-time queries related to transactions, payments, and account management. This automation not only enhances the user experience but also significantly reduces operational costs for the platform, making it possible to offer low-cost services to rural and low-income populations. Through Natural Language Processing (NLP), these chatbots understand and respond to user inquiries, enabling quick and effective support without the need for human intervention.

Automated Compliance: Another major way NGAI is reducing costs is through **automated compliance processes.**[xxiii] Many banks (like ICICI and RBL) employ AI-driven Anti-Money Laundering (AML) checks, which use machine learning algorithms to monitor transactions for suspicious activity. By continuously learning from transaction patterns and identifying anomalies, AI systems enhance fraud detection while reducing the need for manual oversight. This automation lowers the cost of ensuring regulatory compliance, which is essential for making financial services affordable to low-income users.

Automation for Fee Reduction: NGAI also optimises microtransaction platforms by automating transaction processing and reducing associated fees. For instance, the **UPI** in India integrates AI-based fraud detection systems that analyse transaction patterns in real-time, ensuring secure and low-cost transactions. This system is particularly valuable for facilitating microtransactions, which are crucial for low-income users who participate in the digital economy. By automating these processes, UPI eliminates/minimises processing fees, making digital financial services more accessible to a broader population.

Overall, NGAI reduces transaction costs by automating support, enhancing security, and optimising microtransactions. This makes financial services more affordable for low-income users, fostering greater participation in the digital economy and expanding financial inclusion. However, challenges such as ensuring that AI-driven systems can effectively resolve complex issues and balancing privacy with security must be carefully managed to maintain user trust and satisfaction. The key issues on the application of AI in reducing the transaction cost of delivery for low-income users are summarised in Table 9.4.

Table 9.4. Key Issues on the Application of AI in Reducing Transaction Costs of Delivery for Low-income Users Based on the Indian Experience

AI-Led Cost Reduction	Innovative Insight	Technical Mechanism	Impact on Costs
AI-Powered Digital Assistants	Intelligent chatbots and virtual assistants	Leverages **NLP** and **NGAI** models for real-time customer interaction. Integrates with **APIs** for banking services like account opening and loan applications, utilising **Robotic Process Automation (RPA)** for seamless backend integration.	Eliminates the need for physical banking branches by automating customer service, reducing staffing, and operational overhead.
Efficient Payment Processing	Automation of payment systems	Uses **machine learning** algorithms to enhance **AML** checks and **compliance monitoring. NGAI** models optimise transaction verification by identifying patterns and anomalies in real-time, reducing fraud risks. Systems integrate with **blockchain** for secure and transparent transaction verification.	Reduces the need for manual compliance and verification, cutting down on administrative labour and intermediaries, enabling cost-effective payment services.
Microtransaction Platforms	Platforms enabling small, irregular transactions	AI-driven platforms use **predictive analytics** and **secure encryption protocols** to process microtransactions. **Machine learning models** predict transaction volumes and optimise bandwidth allocation, ensuring near-instantaneous and secure processing for small-scale transactions. This is often supported by **AI-powered mobile applications** that streamline interactions for traders, farmers, and freelancers.	Reduces the per-transaction cost by automating processes that would otherwise require human intervention, expanding financial inclusion for low-income and rural populations.

9.7. FINANCIAL INCLUSION APPLICATION SCENARIO # 5: PROVIDING PERSONALISED FINANCIAL EDUCATION AND ADVISORY SERVICES

Financial literacy is a critical component of financial inclusion. Many individuals remain unbanked or underbanked not because they lack the resources, but because they do not fully understand how to use financial products to their advantage. NGAI offers the capability to deliver personalised financial education at scale.

NGAI is revolutionising **personalised financial education** for SMEs and farmers, offering tailored, accessible, and engaging financial literacy resources. By leveraging AI-powered tools, underserved groups can improve their financial decision-making, enhancing their engagement with formal financial services.

For instance, platforms like **KreditBee**[xxiv] and **BankBazaar**[xxv] use AI to analyse financial behaviour from transaction data gathered via UPI and PoS systems. These AI-driven financial advisory platforms provide SMEs with personalised budgeting advice, savings recommendations, and tailored investment strategies. This level of personalisation empowers SMEs to better manage their finances, ultimately improving their business stability and growth.

In addition to direct advisory services, **Reinforcement Learning** models are being deployed to create **gamified financial simulations** that teach users important financial concepts. For example, **Fisdom**[xxvi] offers AI-powered, gamified investment education for MSMEs/rural entrepreneurs. These simulations help users understand investment strategies, loan management, and the importance of savings in an interactive way, making financial education both accessible and engaging.

NGAI also plays a key role in **customising financial education materials** in multiple regional languages. This is particularly important in rural areas, where language diversity can often be a barrier to accessing financial services. For example, **SBI YONO Krishi**[xxvii] uses AI to offer financial guidance and agricultural tips in local dialects, ensuring that farmers can access the knowledge they need to improve productivity and manage finances effectively.

Through these personalised educational initiatives, NGAI is helping to **improve financial literacy** among SMEs and farmers, fostering more responsible borrowing and investment behaviours. These tools encourage greater engagement with formal financial services, helping users make informed decisions that support their long-term financial well-being. However, challenges remain, such as ensuring the fairness and accuracy of AI-generated financial advice and overcoming the digital divide in rural areas, where access to smartphones and internet services may be limited.

In summary, by utilising AI in financial advisory, gamified learning, and personalised education in local languages, platforms are empowering underserved communities to become financially literate and take control of their financial futures. Table 9.5 summarises the critical issues with regard to this:

Table 9.5. Key Issues in Providing AI-Led Personalised Financial Education and Advisory Services Based on the Indian Experience

AI-Based Education	Innovative Insight	Technical Mechanism	Impact on Learning and Engagement
AI-Driven Financial Coaches	Virtual financial coaches offering personalised financial advice	Leverages **NGAI models** to analyse user financial behaviour, using **data analytics** and **real-time processing** to provide tailored advice. AI algorithms predict spending patterns, recommend budgeting strategies, and manage debt based on user data.	Enhances financial literacy by offering personalised, real-time advice, building user trust with customised and actionable insights.
Gamification and Interactive Learning	Gamified, interactive financial education platforms	Utilises **NGAI** to create interactive, scenario-based learning simulations. **AI algorithms** design virtual environments that simulate real-world financial decisions (e.g., loans, investments) using **gamification** techniques like scoring, challenges, and rewards.	Increases engagement, especially for younger users and financial newcomers, by providing hands-on, risk-free learning experiences that build financial knowledge intuitively.
Localised Content and Cultural Relevance	Educational content adapted to local cultures and languages	Employs **NLP** for multilingual content generation and **context-aware AI** to adapt lessons to local economic activities and cultural practices. **AI models** ensure relevance by aligning content with users' cultural norms and everyday financial practices.	Improves accessibility and effectiveness of financial education in rural or diverse communities by providing relatable, culturally aligned content that resonates with local realities.

9.8. DESIGNING CULTURALLY AND REGIONALLY RELEVANT FINANCIAL PRODUCTS

A significant challenge in financial inclusion is the lack of products that meet the diverse needs of various populations. Traditional financial products often fail to account for regional differences in income patterns, social structures, and economic activities. NGAI, with its advanced data processing and analytical capabilities, can help bridge this gap.

NGAI is playing a transformative role in the development of **localised financial products** for small businesses and farmers by combining advanced data analytics, predictive models, and real-time customisation to meet the specific needs of these communities.

One notable example is **SatSure,**[xxviii] which provides AI-driven agri-lending solutions by analysing satellite data to monitor crop health, yield forecasts, and environmental conditions. This data allows financial institutions to tailor loan terms to the specific crops and local growing conditions, ensuring that loans are more relevant and affordable for farmers. By integrating regional economic indicators and crop cycles, SatSure dynamically adjusts loan offerings, providing small farmers with the financial flexibility they need throughout the agricultural season.

Similarly, **CropIn**[xxix] uses predictive AI models to design crop insurance packages with **dynamic premiums.** These premiums are adjusted in real time based on weather patterns, market prices, and crop health, offering small farmers more adaptable and risk-adjusted insurance solutions. By using big data analytics, CropIn helps create financial products that can respond to sudden changes in local conditions, making insurance more relevant and accessible.

Another strong example is **Mahindra Finance,**[xxx] which applies AI to offer **personalised loan packages** for rural SMEs. These loan packages are aligned with seasonal business patterns, providing flexibility for rural entrepreneurs who rely on cyclical income streams. By utilising AI to adjust loan terms in real time based on borrower behaviour and market conditions, Mahindra Finance ensures that its products remain affordable and relevant for small businesses.

Likewise, Table 9.6 highlights how **Aye Finance**[xxxi] utilises AI and machine learning to enhance financial inclusion, focusing on the exact methodologies, technologies, and their operational impacts.

Table 9.6. How Aye Finance utilises AI and Machine Learning for enhancing financial inclusion?

Section	Details	Key Benefits	AI Techniques	Impact
Introduction	Aye Finance integrates AI and machine learning algorithms across its MSME lending platform to address major challenges such as lack of structured business data, high underwriting costs, and inefficiencies in manual processing. This integration spans the full lifecycle of loan origination, underwriting, and risk management.	A scalable, cloud-native lending platform using microservices architecture, capable of real-time processing and integration with external APIs like GSTN and Digital India Stack. The platform supports adaptive and context-aware decision-making using data pipelines and predictive analytics.	AI and Machine Learning integration using Microservices Architecture, API-based Data Ingestion, and Cloud Deployment (AWS, Azure) for Scalability. Uses Docker and Kubernetes for containerisation and management.	AI implementation reduces operational costs by over 60% through automation and microservices architecture, improving real-time processing. Deployment on cloud platforms ensures horizontal scalability, supporting an increase in loan processing capacity by 200%.
Challenges of Traditional MSME Lending	MSMEs face challenges accessing loans due to the absence of structured financial records, collateral, and the manual nature of traditional underwriting processes. Aye Finance uses AI to bridge these gaps by analysing alternative data sources and automating decision-making processes, reducing the the reliance on conventional documentation.	AI enables the use of non-traditional data sources (transaction histories, psychometric evaluations) to enhance credit scoring accuracy. It also standardises and automates underwriting processes through NLP and OCR for extracting and validating data from unstructured sources like invoices and receipts.	Feature Engineering and Data Transformation (utilising libraries such as Pandas and Scikit-learn), Automated Data Integration Pipelines (built using Apache Kafka and Apache Spark for ETL processes), NLP Models for Document Parsing (SpaCy, BERT models)	AI systems allow for automated data ingestion and processing, reducing loan processing time by 70%. Data integration pipelines facilitate real-time aggregation of alternative data, improving loan approval rates by 50% for MSMEs that lack traditional financial documents. NLP and OCR models ensure accurate data extraction from unstructured sources, minimising manual errors by 85%.

Section	Details	Key Benefits	AI Techniques	Impact
AI-Driven Solutions at Aye Finance	Aye Finance deploys advanced AI to automate underwriting, risk modeling, and customer segmentation. The AI models integrate data from various sources, such as GST records, digital transactions, psychometrics, and real-time behavioural data. The models are continuously updated using streaming data from APIs and in-house databases, ensuring precision in risk profiling and adaptive learning for loan decisioning.	Automates end-to-end processes using AI, enhancing risk assessment through ensemble learning models (e.g., XGBoost, Random Forests) that continuously improve with new data. Customer segmentation is refined using unsupervised learning techniques like K-means clustering, enabling precise targeting and personalised engagement strategies.	Supervised Learning Algorithms (XGBoost for risk classification, Support Vector Machines for default prediction), Unsupervised Learning (K-means Clustering for customer segmentation), API Integration for Real-Time Data Feeds (using RESTful and GraphQL APIs), and Data Warehousing Solutions (Snowflake for handling large datasets)	Automated AI systems have led to a 70% reduction in approval times, with models updating in real-time based on new customer behaviour and transaction data. Risk profiling accuracy has improved by 30%, minimising defaults and optimising loan performance. Customer segmentation driven by clustering models has increased conversion rates by 45%, enhancing personalised marketing and service delivery.
AI-Powered Innovations in Practice	The AI-driven models deployed include machine learning frameworks for repeat loan underwriting, bounce-likelihood prediction, and early repayment forecasting. These models leverage deep learning techniques (e.g., Long Short-Term Memory (LSTM) networks for time-series analysis) and clustering algorithms (e.g., K-means and DBSCAN) to segment borrowers based on repayment behaviour, improving portfolio management and resource allocation.	Implements advanced analytics using deep learning and clustering to predict borrower behaviour and manage risk more effectively. The AI models optimise pre-EMI strategies, allocate resources based on predictive scoring, and offer dynamic loan restructuring options for high-risk segments. They incorporate real-time data streams for continuous improvement and adaptation.	Deep Learning Models (LSTM for time-series forecasting of loan repayment behaviour), Clustering Algorithms (DBSCAN for identifying high-risk customer clusters, K-means for segmentation), Ensemble Techniques (Gradient Boosting, Random Forests), and Automated Model Optimsation (Grid Search and Bayesian Optimisation for hyperparameter tuning)	Machine learning models for bounce-likelihood and repayment forecasting have reduced default rates by 35%. Clustering algorithms and LSTM networks have enabled proactive interventions, improving early repayment and reducing non-performing assets (NPAs) by 30%. Real-time resource allocation has enhanced collection efficiency, leading to a 50% reduction in late payments.
Conclusion	Aye Finance's AI-powered platform has set new benchmarks for MSME lending, achieving significant improvements in operational efficiency, scalability, and cost reduction. By deploying a comprehensive AI infrastructure that incorporates advanced models, API-based data integration, and cloud-native architecture, Aye Finance has expanded its lending capacity and optimised customer outreach.	Demonstrates how a fully integrated AI and machine learning platform can transform MSME lending by enhancing real-time risk assessment models, scaling lending capacity through cloud solutions, and personalising customer engagement with predictive analytics. Continuous model refinement ensures sustainable growth and dynamic adaptation to market changes.	Model Evaluation Metrics (ROC-AUC, Precision-Recall for classification accuracy; Cross-Validation for model robustness), Cloud Deployment and Scalability (AWS Auto Scaling and Elastic Load Balancing for high availability), Genetic Algorithms for Optimisation (to fine-tune loan approval and risk models), and Dynamic Scaling of Data Pipelines (Kafka and Spark for handling real-time data)	AI-driven platform has increased loan disbursement volumes by 50% while reducing underwriting costs by 60%. Cloud-based deployment ensures system scalability and robustness, supporting an MSME customer base increase of 200%. Advanced optimisation algorithms have refined risk models, reducing NPAs by 25%, and ensuring consistent financial performance across market conditions.

The above table includes in-depth technical details on the specific AI techniques, the architecture used, and the real-time and cloud-native solutions implemented. It highlights the deployment strategies, model evaluation metrics, and optimisation methods for efficiency gains and risk management, showing how Aye Finance scales its operations and enhances loan performance.

Thus, NGAI also allows financial institutions to continuously evolve and adapt their offerings. AI-powered predictive models analyse local crop cycles, weather data, and economic trends to dynamically adjust loan terms, insurance premiums, and repayment schedules. This ensures that the financial products are not only relevant but also sustainable for small businesses and farmers.

However, this innovation comes with challenges, such as ensuring the quality and availability of local data for accurate predictions, and managing the ethical implications of AI-driven dynamic pricing and risk assessments. These factors need careful consideration to avoid placing undue burdens on borrowers, especially those in vulnerable communities.

In summary, by harnessing AI, institutions like SatSure, CropIn, Mahindra, and Aye Finance are creating flexible, localised financial products that meet the specific needs of rural farmers and SMEs. These adaptive solutions increase financial inclusion by ensuring that products are aligned with the realities of local economic and environmental conditions, ultimately fostering better engagement with formal financial systems.

9.9. ENHANCING REGULATORY COMPLIANCE AND FRAUD PREVENTION

Ensuring compliance and preventing fraud are critical when extending financial services to new customer bases, especially in underserved regions with less regulatory oversight. NGAI provides advanced solutions to maintain security and regulatory standards.

Generative AI is revolutionising **regulatory compliance** and **fraud detection** for SMEs and farmers by automating key processes and ensuring enhanced security in digital financial transactions. By employing deep learning, biometric systems, and machine learning models, AI-driven systems can monitor transactions, detect fraud, and ensure compliance in real time, reducing both operational costs and the risk of human error.

One notable example of AI in this domain is the **UPI,** which uses AI-based models to **detect fraudulent activities** in real time. By analysing large volumes of transaction data and identifying unusual patterns, UPI's AI systems flag suspicious behaviours, protecting SMEs and farmers from financial fraud. Deep learning algorithms ensure that these systems continuously learn from transaction data to refine detection capabilities over time, enhancing the security of digital payments for rural users

In addition to fraud detection, AI-powered systems are transforming **Know Your Customer (KYC) processes. Axis Bank** employs AI for **biometric-based KYC** verification, including facial recognition and fingerprint scanning, to streamline the onboarding of SMEs and farmers. This automated approach not only accelerates onboarding but also ensures that compliance is maintained, reducing the burden on manual verification processes. The integration of AI-driven KYC systems increases trust and security, allowing more individuals in rural and underserved areas to engage with formal financial services.

Muthoot Finance,[xxxii] a major player in the microfinance sector, has adopted AI for **AML monitoring** to ensure regulatory compliance. By using machine learning models that compare real-time transactions against regulatory databases, Muthoot Finance can flag suspicious transactions and ensure that its microfinance services, particularly for rural customers, are compliant with stringent financial regulations. This not only protects the institution from regulatory risks but also fosters trust among customers who are often wary of digital financial platforms.

However, as these AI systems become more prevalent, it is important to address concerns regarding **privacy** and the **secure storage** of biometric and transactional data. Financial institutions must balance the need for robust compliance and fraud detection with the imperative to safeguard sensitive information. Moreover, as regulations evolve, AI models must be continually updated to ensure ongoing compliance without sacrificing efficiency.

In summary, NGAI is playing a pivotal role in enhancing **regulatory compliance** and **fraud detection** for SMEs and farmers. Platforms like UPI, Axis Bank, and Muthoot Finance are using AI-driven systems to ensure secure, compliant, and efficient financial transactions, promoting broader engagement with formal financial services in underserved communities.

Table 9.7. **AI in Financial Inclusion: Challenges Based on the Indian Experience**

Key Challenge	Insight	Technical Considerations	Implications for Financial Inclusion
Data Privacy and Security Risks	Protecting personal and sensitive data	Requires implementation of advanced encryption protocols (e.g., AES, RSA) and compliance with data protection regulations (e.g., GDPR, India's Personal Data Protection Bill). NGAI systems must ensure secure data storage and transmission.	Failure to protect user data, especially for vulnerable populations, can erode trust in NGAI-driven financial services, limiting adoption. Ensuring security is critical to encourage participation from low-income and digitally less aware users.
Potential for Bias in NGAI Algorithms	Risk of perpetuating existing inequalities through biased AI models	NGAI must incorporate bias detection tools, fairness metrics, and diverse, representative training datasets. Techniques like algorithmic auditing and fairness-aware machine learning can help mitigate bias.	Without careful bias mitigation, NGAI could unintentionally exclude marginalised groups from financial services. Ensuring equitable outcomes is essential for promoting inclusivity and avoiding systemic discrimination.
Digital Divide and Infrastructure Limitations	Lack of access to digital infrastructure hampers AI adoption	Investments are needed in telecom infrastructure (terrestrial and satellite broadband, 4G/5G) and mobile devices to expand connectivity. Digital literacy programmes should teach users how to interact with NGAI-driven platforms using conversational AI.	Without access to the necessary tools (smartphones, internet), underserved populations remain excluded from NGAI-driven financial inclusion initiatives. Bridging the digital divide is vital to ensuring equitable access to these services.

9.10. CHALLENGES AND CRITICAL CONSIDERATIONS

Despite its promise, NGAI in financial inclusion is not without challenges, as discerned from the Indian experience. Addressing these issues is crucial to maximising the technology's positive impact, as noted in **Table 9.7.**

9.11. LESSONS LEARNED FROM USING NGAI FOR FINANCIAL INCLUSION IN INDIA

The application of NGAI within India's financial ecosystem has highlighted critical lessons in reducing financial inequalities for underserved groups, including SMEs, low-income individuals, and smallholder farmers. These lessons reveal both the technical advancements made and the unique challenges encountered in extending financial inclusion. Here, each lesson outlines the necessary and sufficient conditions for NGAI applications, relevant algorithms, practical examples, and the implications for achieving inclusive finance. This should be useful for financial inclusion stakeholders worldwide.

Lesson #1: Leveraging Alternative Data to Build Inclusive Credit Profiles

For individuals and small businesses lacking traditional financial documentation, NGAI uses alternative data to construct credit profiles, offering a path to credit access. This is especially impactful for India's unbanked population, where traditional credit scoring models are ineffective.

Requirements

- **Necessary Conditions:** Access to alternative data (e.g., UPI transaction history, telecom usage, e-commerce data) is essential. Regulatory compliance is needed to ensure secure and transparent handling of personal data.
- **Sufficient Conditions:** Advanced machine learning models that can effectively analyse both structured and unstructured data are required to build comprehensive credit profiles.

Key Algorithms

- **Gradient Boosted Decision Trees (GBDT) and Random Forests:** Analyse diverse data sources to identify financial behaviour patterns.
- **Natural Language Processing (NLP):** Extracts insights from unstructured data, such as customer reviews and transaction logs.

Practical Example

- Bajaj Finserv combines UPI and e-commerce data to assess the creditworthiness of small businesses without traditional documentation.

Implications for Financial Inclusion: Using alternative data to create inclusive credit profiles allows underserved populations to access credit, but careful data management and compliance with data privacy laws are crucial to maintaining trust and expanding responsible credit access.

Lesson #2: Automation in Loan Underwriting and Its Dependence on Digital Infrastructure

NGAI has streamlined loan underwriting by automating document processing and integrating real-time data, which reduces approval times and costs. However, the accessibility of digital infrastructure is a critical factor in expanding these services to rural areas.

Requirements

- **Necessary Conditions:** Access to high-speed internet, digital devices, and data from financial documents is needed for efficient automation.
- **Sufficient Conditions:** AI-driven OCR for document digitisation and reinforcement learning models that optimise loan processing over time.

Key Algorithms

- **OCR:** Extracts data from various informal and formal documents, including bank statements and other records.
- **Reinforcement Learning:** Continuously improves the loan underwriting process based on past data and outcomes.

Practical Example

- **Indifi** employs OCR to automate financial document processing, speeding up loan approvals for small businesses with limited formal documentation.

Implications for Financial Inclusion: Automation in loan underwriting improves efficiency, but its reach is limited without digital literacy programmes and infrastructure development in rural areas. Ensuring these prerequisites helps maximise the benefits of AI-driven loan platforms.

Lesson #3: Personalisation and Localisation Are Key to User Engagement

NGAI offers personalised financial advice tailored to the needs of diverse user groups, from SMEs to smallholder farmers. However, successful engagement depends on localisation, where financial services are culturally and linguistically adapted to meet regional needs.

Requirements

- **Necessary Conditions:** Access to localised data and linguistic processing tools for adapting advice to different dialects and cultural contexts.
- **Sufficient Conditions:** Machine learning models that analyse behavioural data over time, and NLP combined with machine translation to accurately deliver advice in regional languages.

Key Algorithms

- **Recurrent Neural Networks (RNNs) and Long Short-Term Memory (LSTM):** Track user spending and income patterns to offer personalised financial guidance.
- **Machine Translation Models:** Translate financial advice into regional languages, making it accessible.

Practical Example

- SBI YONO Krishi provides personalised recommendations in local dialects, helping farmers make informed financial decisions.

Implications for Financial Inclusion: Personalisation and localisation increase user engagement, making financial advice more relevant and accessible. This approach enhances the adoption of financial services across India's diverse population.

Lesson #4: Dynamic, Context-Aware Risk Assessment for Fairer Financial Products

NGAI enhances risk assessments by incorporating real-time data, including weather patterns and market trends, which improves accuracy for high-risk sectors like agriculture. This dynamic approach is vital for creating fairer financial products, especially for farmers and SMEs facing unpredictable conditions.

Requirements

- **Necessary Conditions:** Real-time access to environmental and market data, such as satellite imagery and IoT sensor data.
- **Sufficient Conditions:** Convolutional Neural Networks (CNNs) for analysing satellite imagery, and IoT-integrated risk models that adapt to real-time changes.

Key Algorithms

- **CNNs:** Assess crop health from satellite images, which informs dynamic risk profiles.
- **Support Vector Machines (SVMs):** Process economic and environmental data, adjusting risk profiles accordingly.

Practical Example

- **SatSure:** uses satellite data to predict crop yields, allowing banks to adjust loan terms for farmers based on current agricultural conditions.

Implications for Financial Inclusion: Dynamic risk assessment promotes fairness, as loan terms are tailored to real-time conditions, benefiting high-risk sectors. Transparency is essential for fostering trust in AI-driven decisions.

Lesson #5: AI-driven Fraud Detection Balances Security with User Privacy

Real-time fraud detection models have improved security within India's digital payment systems, such as UPI. However, achieving a balance between user privacy and fraud prevention remains a critical challenge.

Requirements

- **Necessary Conditions:** Continuous access to transaction data to detect anomalies and compliance with privacy regulations.
- **Sufficient Conditions:** Anomaly detection algorithms that accurately identify fraud patterns while preserving user privacy.

Key Algorithms

- **Autoencoders and Isolation Forests:** Detect deviations from typical transaction patterns, indicating potential fraud.
- **Graph Neural Networks (GNNs):** Analyse transaction relationships to identify unusual activities.

Practical Example

- **Google Pay and PhonePe:** employ AI models to monitor transactions, swiftly detecting and mitigating fraud risks on UPI.

Implications for Financial Inclusion: Effective fraud detection is essential to build trust in digital financial platforms, particularly for new users. Maintaining user privacy through regulatory compliance is crucial for secure and widespread adoption.

CONCLUSION: A PATH FORWARD FOR EQUITABLE FINANCIAL INCLUSION

NGAI offers transformative potential for financial inclusion in India (and globally) by enabling scalable, customised, and secure solutions in credit access, education, fraud detection and many other areas identified earlier. However, to realise this potential, NGAI applications must be deployed responsibly, prioritising data privacy, fairness, and digital infrastructure. Partnerships among financial institutions, government entities, technology providers and other stakeholders are key to expanding these benefits across all socioeconomic groups.

By ensuring digital literacy, algorithmic transparency, and regulatory compliance, India can create a more resilient financial system where all citizens, regardless of their background, have access to essential financial tools. This approach will pave the way for a more equitable financial future for India, fostering economic growth and inclusivity.

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The Antardrishti Dashboard, Financial Inclusion Index and Digital Payments Index: India's Experience in Tracking and Measuring Traditional and Digital Financial Inclusion

Ramesh Srivatsava Arunachalam

10

10.1. INTRODUCTION

Financial inclusion is widely acknowledged as a cornerstone of inclusive economic growth, but its true scope extends well beyond simply providing affordable access to financial services. It encompasses a wide range of services, including credit, savings, insurance, pensions, and payment systems. These services form the foundation upon which individuals and businesses engage in economic activities, driving not only individual financial stability but also the broader economic development of a nation. Governments and financial institutions worldwide have invested significantly in enhancing, measuring, and tracking financial inclusion, and India has emerged as a global leader in these initiatives.

One of the most prominent efforts undertaken by India is the development of the Financial Inclusion Index (FI-Index) by the Reserve Bank of India (RBI). The FI-Index is a comprehensive tool designed to measure the extent of financial inclusion across the country. With its 97 indicators[i] spanning three core dimensions—Access, Usage, and Quality—the index provides a detailed overview of how effectively financial services are being accessed, utilised, and experienced throughout India. The FI-Index and the Antardrishti Dashboard were extensively discussed in Chapter 9 of the previous year's *Inclusive Finance India Report* (2023), which highlighted India's considerable progress in promoting financial inclusion. However, despite the FI-Index's comprehensive design, it has limitations. One of its main challenges is that it offers a static snapshot of financial inclusion, capturing data at a single point in time. While this provides useful insights, it falls short of reflecting the dynamic, evolving nature of financial inclusion in an increasingly fast-paced and technology-driven financial ecosystem. As India continues to experience a rapid shift towards digital transactions, driven by technological advancements, the FI-Index's static nature becomes a constraint. To accurately reflect financial inclusion's ongoing transformation, a more adaptive and real-time measurement system is required.

Recognising this gap, the RBI introduced the Antardrishti Financial Inclusion Dashboard,[ii] a tool that marks a significant shift from static measures towards dynamic, real-time tracking of financial inclusion. Antardrishti provides granular data at the national, state, and district levels, covering various financial inclusion metrics such as credit-deposit ratios, agricultural linkages, and self-help group (SHG) activity. Operational since June 2023, the dashboard enables policymakers to visualise financial inclusion through real-time data tools, such as heatmaps, to more effectively identify and address gaps in financial inclusion across diverse regions of the country. However, to function optimally, the Antardrishti Dashboard requires accurate and

up-to-date data, much of which comes from the RBI payment system. This payment system is, in fact, the best repository for data on digital financial transactions—an area that has seen remarkable growth in India over the past several years.

This shift towards digital payments gained significant momentum following the demonetisation event in November 2016 (see Figure 10.1, Table 10.1, and Figure 10.2). Demonetisation was a turning point for India's financial sector, accelerating the adoption of digital financial services. The introduction of digital platforms such as the Unified Payments Interface (UPI), Aadhaar-enabled payment systems (AePS), Direct Benefit Transfers (DBT), and the opening of millions of accounts under the Pradhan Mantri Jan Dhan Yojana (PMJDY) fundamentally transformed India's financial landscape. With digital payments becoming integral to everyday transactions, it was clear that a new approach was needed to measure financial inclusion, particularly given the rapid growth of digital services. In response, the RBI developed the Digital Payments Index (RBI-DPI)—a tool specifically designed to measure the growth and impact of digital financial inclusion, discussed here in detail along with the extant implications for the Antardrishti Dashboard, the RBI FI-Index, and the overall measurement of (digital) financial inclusion.

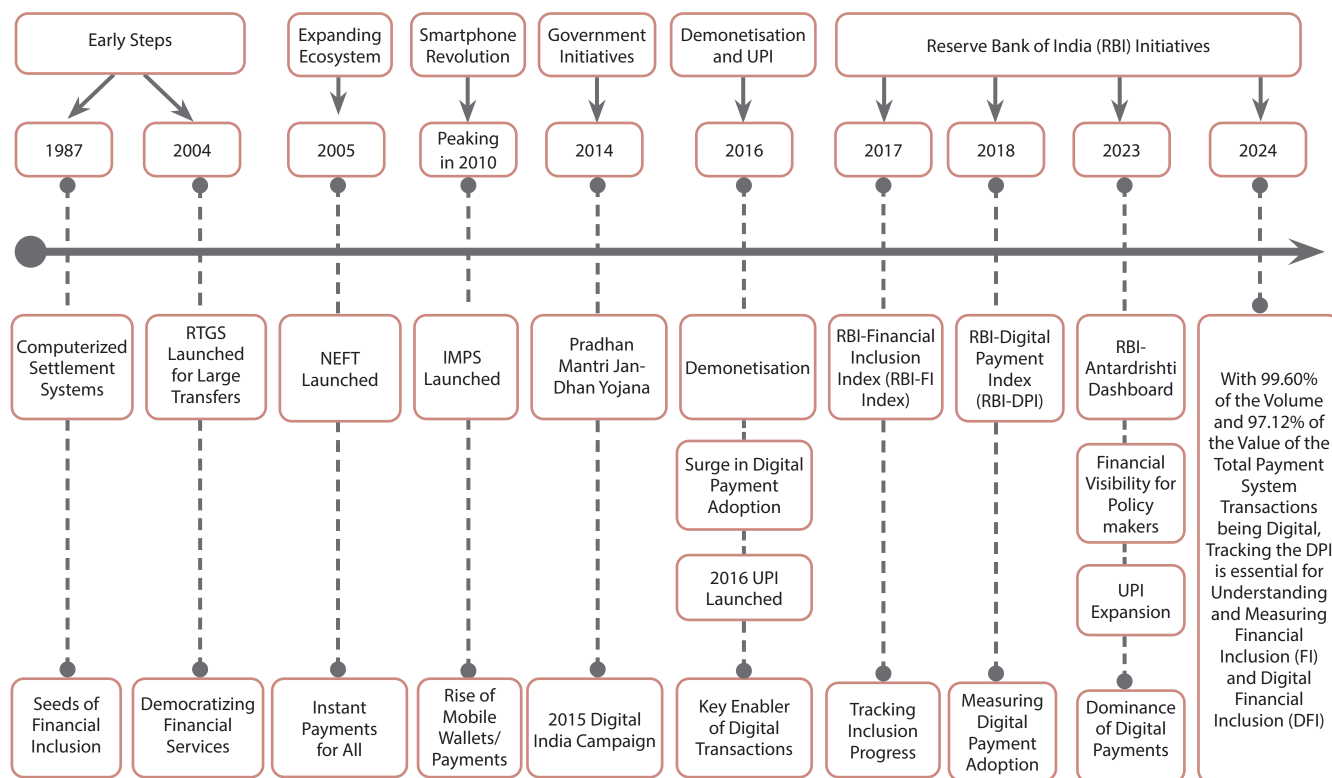

Figure 10.1. The Evolution, Measurement and Tracking of Digital Financial Inclusion in India Through the Antardrishti Dashboard, RBI FI-Index and RBI-DPI

Table 10.1. RBI Payment System Data, Annual Turnover (April–March)

Details	Volume (in million)					
	2018–19	2019–20	2020–21	2021–22	2022–23	2023–24
Total Payments	24,383.90	35,044.00	44,377.20	72,676.70	114,656.30	165,093.39
Total Digital Payments	23,260.20	34,002.60	43,706.80	71,976.80	113,947.60	164,430.18
% of Total Digital Payments/Total Payments	95.39%	97.03%	98.49%	99.04%	99.38%	99.60%

Source: Data compiled and analysis from RBI Annual Report

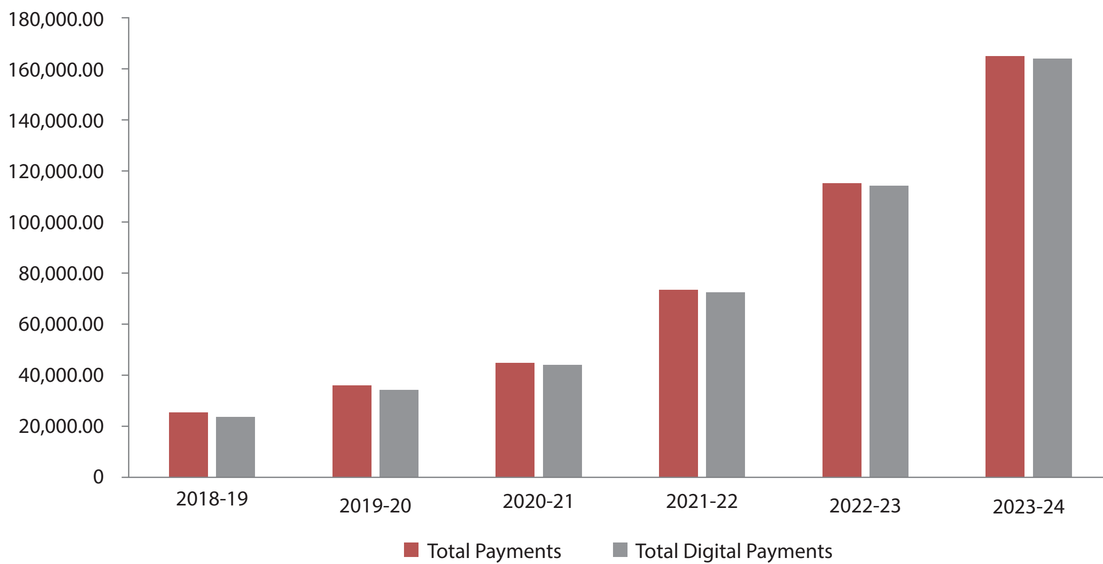

Figure 10.2. Total Payments Vs Total Digital Payments, By Volume in Million
Source: Data compiled from RBI Annual Report 2020-21, 2021-22, 2022-23, and 2023-24

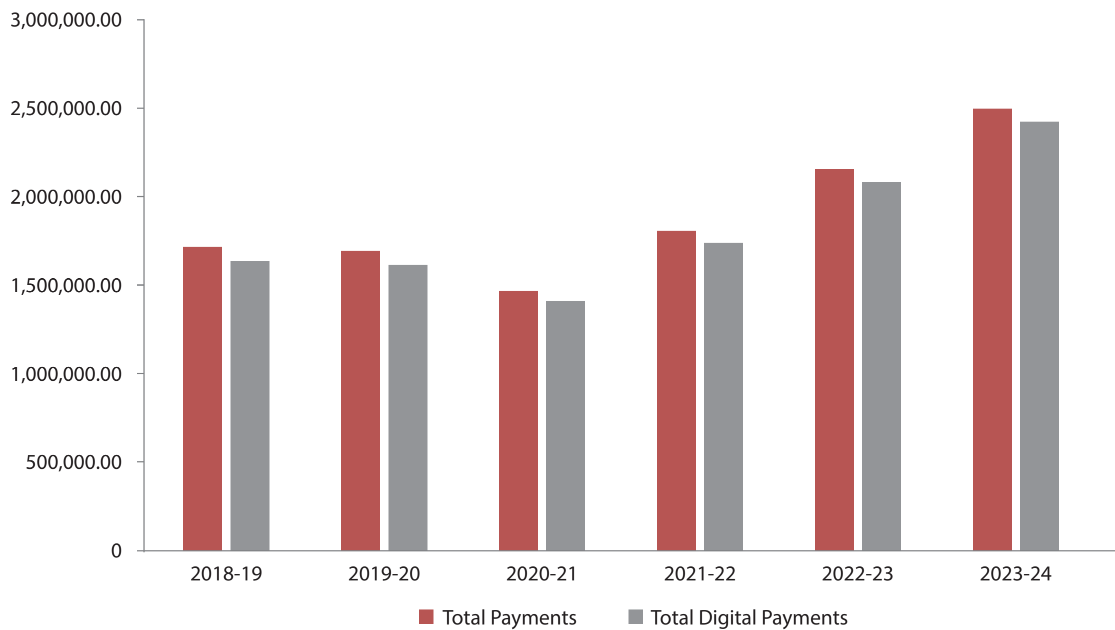

Figure 10.3. Total Payments Vs Total Digital Payments, By Value in ₹ Billion
Source: Data compiled from RBI Annual Report 2020-21, 2021-22, 2022-23, and 2023-24

	Value (₹ billion)					
	2018–19	**2019–20**	**2020–21**	**2021–22**	**2022–23**	**2023–24**
	1,719,594.90	1,697,940.00	1,470,860.00	1,810,520.00	2,158,500.00	2,500,361.31
	1,637,134.25	1,619,690.00	1,414,580.00	1,744,010.00	2,086,870.00	2,428,237.99
	95.20%	95.39%	96.17%	96.33%	96.68%	97.12%

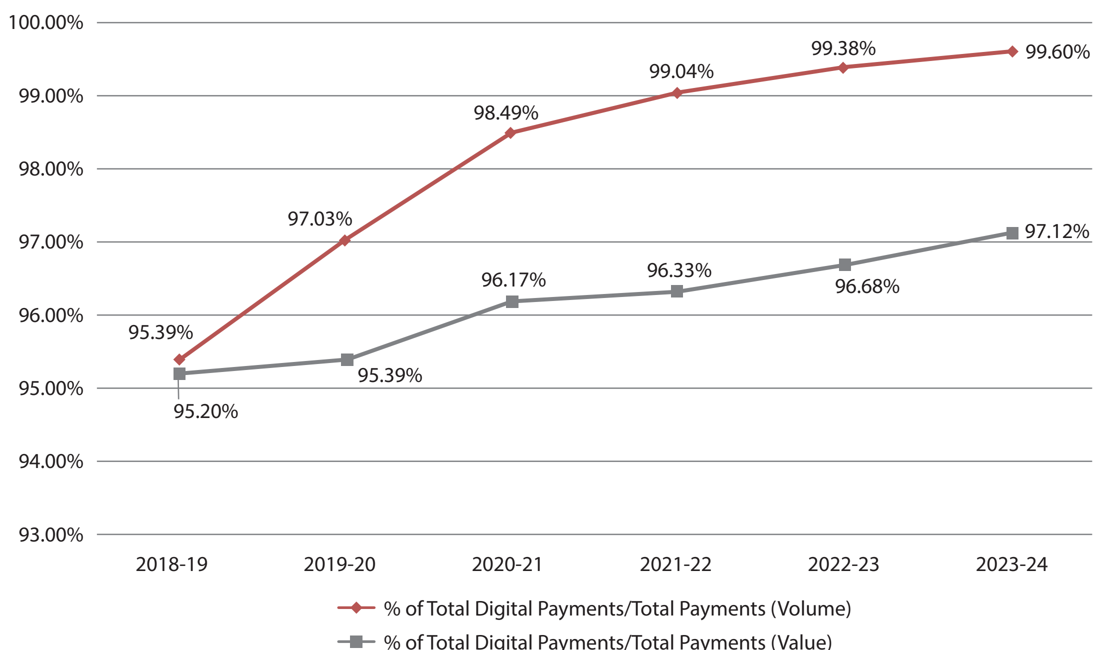

Figure 10.4. % of Total Digital Payments to Total Payments (Volume and Value)
Source: Based on analysis from RBI Annual Report 2020-21, 2021-22, 2022-23, and 2023-24

The DPI tracks the shift from traditional payment methods to digital platforms, offering insights into the volume, value, and adoption of digital payments. It plays a critical role in addressing the limitations of the static Financial Inclusion Index. By offering a real-time and dynamic perspective, the DPI complements the FI-Index, enabling a more accurate and continuous understanding of how digital financial services are evolving and contributing to financial inclusion.

The importance of the DPI becomes particularly evident when analysing data on the growth of digital payments as a proportion of total transactions in India. Between 2018 and 2024, the rise in digital payments has been staggering. As noted in the table and graphs given above, by 2024, digital payments accounted for 99% of total transaction volume, up from around 95% a few years earlier. In terms of transaction value, the shift has been equally transformative, with digital payments constituting 97% of the total by 2024. These numbers illustrate the deep penetration of digital financial services across India, reaching not only urban centres but also rural areas and previously underserved populations.

This exponential growth in digital payments underscores the DPI's essential role in tracking financial inclusion in real time. Unlike the FI-Index, which offers a broader but static snapshot, the DPI provides a dynamic and up-to-the-minute view of progress in digital financial inclusion. The DPI reveals more than just the number of digital transactions; it demonstrates how these transactions are reshaping the financial ecosystem and contributing to broader financial inclusion goals. By analysing both the volume and value of digital payments, the DPI offers a clearer and more accurate view of India's ongoing journey toward financial inclusivity, particularly as digital transactions become a central part of the economic landscape.

Moreover, the DPI is crucial for informing both the FI-Index and the Antardrishti Financial Inclusion Dashboard. The base data collected for the DPI serves as a vital input for the Antardrishti Dashboard, which relies on real-time digital financial transaction data to offer actionable insights at the district level. This symbiotic relationship ensures that Antardrishti is equipped with up-to-date and reliable data, enabling it to deliver more targeted and meaningful insights into financial inclusion. The DPI's dynamic data enhances the dashboard's utility, transforming it into a powerful tool for addressing service gaps and directing efforts toward areas of greatest need.

The interplay between the DPI and the FI-Index allows for a more comprehensive understanding of financial inclusion. While the FI-Index offers a broad picture of access, usage, and quality, the DPI delves deeper into the rapidly expanding digital dimension, providing detailed insights into the country's growing digital financial ecosystem.

Together, these indices bridge the gap between traditional and digital financial services, ensuring that policymakers and institutions have the tools they need to make informed decisions and address both longstanding barriers and emerging challenges in the financial system.

The significance of the DPI extends beyond India's borders. As other nations and central banks seek to improve their financial inclusion frameworks, India's experience with the DPI offers a valuable model. The DPI shows how digital financial inclusion can be measured dynamically, providing real-time data on the adoption and impact of digital services. By combining traditional financial inclusion metrics with digital data, the DPI provides a blueprint for other countries experiencing similar rapid growth in digital financial services. India's journey underscores the importance of considering both traditional and digital aspects of financial inclusion, particularly in economies where digital infrastructure is expanding rapidly.

Thus, this chapter emphasises the growing importance of the DPI as an indispensable tool for real-time tracking of financial inclusion. By complementing the more static FI-Index and informing the Antardrishti Financial Inclusion Dashboard, the DPI plays a crucial role in understanding and advancing financial inclusion across India. As digital payments continue to grow in both volume and value, the DPI will remain central to measuring India's progress, ensuring that financial services are accessible, affordable, and inclusive for all. The rise of digital payments has profoundly shaped India's journey toward financial inclusion, and the DPI stands as a key measure of that transformation, offering invaluable insights for both India and the global financial community.

10.2. THE RBI-DPI

The RBI-DPI plays several key roles in shaping India's digital financial inclusion landscape:

1. **Measuring the Success of Digital Payment Initiatives:** The DPI acts as a barometer for assessing the effectiveness of digital payment initiatives launched by the government and private sector. These efforts includeto improving digital literacy, expanding payment infrastructure, and making digital transactions more accessible across different segments of society. This measurement is essential to understanding how digital financial inclusion aligns with broader financial inclusion goals, as tracked by the FI-Index and Antardrishti.
2. **Identifying Gaps in Infrastructure and Adoption:** By analysing digital payment adoption across different regions and demographics, the DPI helps pinpoint areas where digital infrastructure is lacking or adoption rates are low. This data is crucial for policymakers using the Antardrishti dashboard to address disparities in digital financial inclusion, particularly in rural and underserved communities.
3. **Benchmarking Progress Against Global Standards:** As India positions itself as a global leader in digital payments, the DPI offers a benchmark for tracking progress relative to international standards. The data allows policymakers to gauge how India's financial inclusion efforts, especially through digital means, compare with those of other nations and make adjustments where necessary.
4. **Guiding Policy and Strategy:** Insights derived from the DPI enable policymakers to develop targeted, data-driven strategies to further encourage digital transactions. By identifying gaps and opportunities, the index supports the creation of policies that promote digital financial inclusion, especially for marginalised groups who may be at risk of being excluded from the digital revolution. These insights complement the broader financial inclusion metrics tracked by the FI-Index and Antardrishti.
5. **Providing Insights for Business and Product Development:** For businesses and financial institutions, the DPI offers valuable insights into market trends and consumer behaviour, helping them tailor products and services to better meet diverse customer needs. By understanding where digital payment adoption is thriving and where it lags, businesses can innovate and expand digital financial services in ways that align with the overall financial inclusion agenda, as highlighted by the FI-Index.

The following sections explore the details of the RBI-DPI, including its calculation, key components, historical trends, and its impact on stakeholders. This chapter also examines how the index integrates into India's broader digital financial inclusion framework, complementing the FI-Index and Antardrishti dashboard. As India advances its ambitious goals for digital financial inclusion, the RBI-DPI will remain a vital tool, guiding strategies to ensure the benefits of digitalisation reach all segments of society, particularly the underserved. Thus, the RBI-DPI is more than a simple indicator—it reflects India's drive towards digital financial inclusion.

10.3. UNDERSTANDING THE RBI-DPI

10.3.1. Definition and Purpose of the RBI-DPI

The RBI-DPI is a composite measure reflecting the penetration, effectiveness, and adoption of digital payment systems across India. Its primary purpose is not only to track the growth of digital payments but also to support the nation's mission of achieving greater financial inclusion. By providing a concise metric on the spread of digital payments, the DPI serves as an indicator of how digital financial services are advancing and where gaps in access might still exist. As digital payments become more integral to everyday life, understanding their adoption through the DPI allows policymakers and stakeholders to make informed decisions that foster deeper financial inclusion.

10.3.2. Base Period and Scoring Methodology

The RBI has designated March 2018 as the base period for the DPI, assigning it a score of 100.[iii] This period was strategically selected as it reflects the digital payments landscape following significant national developments, including the demonetisation of high-value currency notes in 2016 and the rapid adoption of the UPI. These events had a transformative impact on India's payment systems, laying the foundation for the widespread acceptance of digital transactions. The base period serves as a reference point for measuring subsequent growth in digital payments, enabling the DPI to track the ongoing progress towards financial inclusion. By setting 2018 as the benchmark, the DPI provides consistent comparisons of digital payment adoption growth over time, crucial for evaluating the expansion of financial access—a vital component of the FI-Index. Growth in the DPI reflects increased use of digital payments across diverse economic and geographic backgrounds, supporting India's broader financial inclusion goals.

In terms of scoring methodology, the DPI consolidates data from various components of the RBI payments ecosystem, including mobile payments, card transactions, and online banking services. Each component is weighted based on its relative significance to the digital economy, and the aggregated score represents overall digital payment penetration in the country.

As digital payments become more prevalent, the RBI-DPI reflects these changes, offering real-time insights that feed directly into the Antardrishti Financial Inclusion Dashboard. The synergy between the DPI and Antardrishti enhances the government's ability to track financial inclusion dynamically.

The FI-Index remains a crucial static measure, but it benefits from the DPI's real-time data to give a fuller picture of how digital and traditional financial services interact to expand financial access and drive financial inclusion in real time.

The DPI's scoring methodology is based on several parameters representing different dimensions of digital payments. These parameters are categorised into five key areas[iv] (see Figure 10.5), each of which plays a role in promoting financial inclusion by making digital financial services more accessible and effective:

1. **Payment Enablers:** This category reflects the infrastructure and conditions that facilitate digital payments, such as internet penetration and smartphone usage. Enhancing these enablers is crucial for extending financial services to underserved populations, particularly in rural areas.
2. **Payment Infrastructure – Demand-side Factors:** This measures the readiness of consumers to adopt digital payments, including the availability of bank accounts and financial literacy. Effective financial inclusion efforts rely on strengthening this infrastructure, ensuring that individuals are equipped to use digital financial services effectively.
3. **Payment Infrastructure – Supply-side Factors:** This captures the availability of digital payment providers and channels, such as point-of-sale (PoS) terminals and mobile banking platforms. Expanding supply-side infrastructure is key to making digital financial services accessible, even in remote areas.
4. **Payment Performance:** This tracks the volume and value of digital transactions, which correlates directly with the extent of financial inclusion. As digital payment performance improves, it indicates increased participation in the formal financial system by individuals and businesses.
5. **Consumer Centricity:** This category focuses on the user experience, including ease of use, security, and convenience of digital payments. Improving consumer centricity can boost confidence in digital financial services, accelerating their adoption and promoting inclusion.

These aspects and the various inter-relationships are illustrated in Figure 10.5.[v]

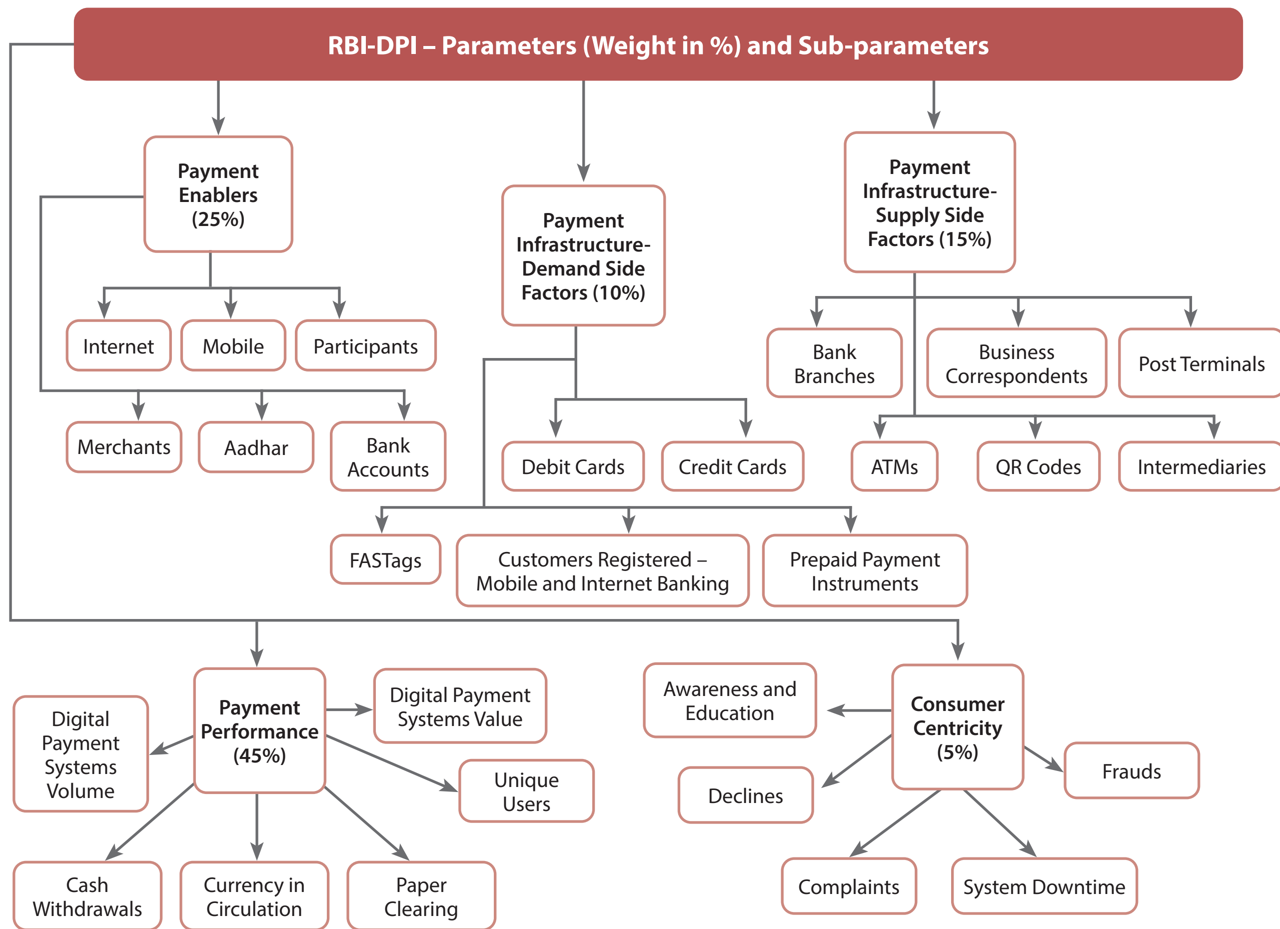

Figure 10.5. RBI-DPI – Parameters and Sub-parameters for Measuring Digital Financial Inclusion

10.3.3. Calculation and Weighting of the RBI-DPI

The calculation of the RBI-DPI involves several key steps, aimed at providing an accurate and holistic measure of digital payment penetration and its impact on financial inclusion:

1. **Data Collection:** Data for each parameter is collected from various sources, including banks, payment providers, and government agencies. This comprehensive approach ensures the index accurately reflects the full scope of the digital payment landscape.
2. **Normalisation:** The collected data is normalised to standardise different units and scales, ensuring comparability across different dimensions of digital payments.
3. **Weighting:** Each parameter is assigned a weight based on its relative importance in driving digital payments and financial inclusion. For instance, infrastructure availability in rural areas may carry more weight due to its critical role in extending financial services to underserved populations.
4. **Aggregation:** The weighted values are combined to generate the final index value. A higher DPI value indicates greater digitisation of payments, signifying a broader level of financial inclusion.

10.4. FREQUENCY OF UPDATES AND IMPACT ON FINANCIAL INCLUSION

The RBI-DPI is updated semi-annually, with a four-month lag. Consequently, the index is published twice a year, typically in March and September, capturing the state of digital payments as of January and July, respectively. This regular update schedule allows stakeholders to monitor short-term trends in digital payment adoption, assess recent policy impacts, and make timely, data-driven decisions that promote financial inclusion.

The semi-annual updates of the DPI have several important implications for financial inclusion:

1. **Tracking Short-term Trends:** Regular updates help stakeholders track seasonal variations and other short-term trends in digital payment usage, providing insight into the evolving state of financial inclusion in real time.
2. **Assessing Policy Impact:** By comparing DPI scores across different periods, policymakers can assess the effectiveness of digital financial inclusion initiatives. This allows for strategy adjustments to ensure digital payments reach the most vulnerable populations.
3. **Identifying Barriers:** Semi-annual updates facilitate the timely identification of barriers to digital payment adoption. For instance, if certain regions or demographics show slower DPI growth, targeted targeted interventions can be implemented to address these challenges.
4. **Real-time Insights:** While the official DPI is released every six months, the RBI continuously monitors the digital payments landscape, ensuring real-time insights even between official releases. This ongoing monitoring helps stakeholders respond quickly to emerging trends and opportunities to advance financial inclusion.

10.5. COMPONENTS OF THE RBI-DPI AND THEIR ROLE IN ADVANCING FINANCIAL INCLUSION

The RBI-DPI consists of five primary components, each providing a detailed view of India's digital payment ecosystem. These components—ranging from the foundational enablers of digital payments to the trust consumer place in them—work collectively to measure the country's progress in digital payment adoption and play a significant role in promoting financial inclusion. At its core, financial inclusion seeks to provide equal access to financial services, especially for unbanked and underbanked populations. The RBI-DPI, with its comprehensive framework, offers insights into how well digital financial services are being adopted and how they are enhancing accessibility for all segments of society.

Table 10.2 below explores each component in detail, outlining its relevance to financial inclusion. It summarises the key components of the RBI-DPI and highlights how they contribute to the digital payments ecosystem and to advancing digital financial inclusion:

Table 10.2. Components of the RBI-DPI, Impact on (Digital) Financial Inclusion and Role in Digital Payment Ecosystem

Component	Key Elements	Description	Impact on (Digital) Financial Inclusion	Role in Digital Payments Ecosystem
Payment Enablers	• Internet Connectivity • Smartphone Penetration • Bank Accounts • KYC Infrastructure • Aadhaar Penetration	• Captures foundational factors like internet access, smartphone availability, and the number of bank accounts.	• Lays the groundwork for financial services by providing the essential infrastructure for people to access digital payments.	• Builds the basic infrastructure for the adoption and expansion of digital payments across the country.
Payment Infrastructure – Demand-side	• Bank Branches • Business Correspondents • ATMs • PoS Terminals • QR Codes	• Evaluates accessibility and availability of digital payment services, including physical bank branches and ATMs, as well as digital tools like PoS and QR codes.	• Ensures that digital payment services are accessible to underserved populations in rural and semi-urban areas, bridging the gap between the unbanked and formal financial services.	• Focuses on making digital payment services accessible and easy to use for consumers, enhancing adoption, especially in rural and underserved regions.
Payment Infrastructure – Supply-side	• Payment System Operators • Payment Service Providers • Interoperability • Tokenisation • Fraud Detection Systems	• Assesses the backend systems that process and secure digital transactions, including operators, service providers, and interoperability between systems.	• Provides a secure and reliable infrastructure for digital transactions, ensuring that consumers have confidence in the digital payment system and can access services without technical limitations.	• Strengthens the reliability, security, and interoperability of digital payment systems, enabling seamless transactions and boosting user trust.

Component	Key Elements	Description	Impact on (Digital) Financial Inclusion	Role in Digital Payments Ecosystem
Payment Performance	• Volume and Value of Transactions • Transaction Success Rates • Growth Rates • Share of Digital Payments • Per Capita Digital Transactions	• Measures actual usage and performance of digital payment systems, including transaction volumes, growth rates, and success rates.	• Reflects the success of financial inclusion efforts by tracking the adoption and usage of digital payments across various sectors of the economy.	• Tracks the overall usage of digital payments, offering insights into how widely digital payment methods have been adopted and their economic impact.
Consumer Centricity	• Dispute Resolution Mechanisms • Customer Awareness Programs • Digital Payment Literacy • Consumer Protection Policies • Ease of Use	• Focuses on user experience, customer trust, and consumer education, ensuring that digital payment systems are user-friendly and secure.	• Enhances financial inclusion by building trust through robust consumer protection and dispute resolution, while promoting digital literacy to encourage widespread adoption of digital payments.	• Emphasises the importance of user experience, education, and protection, ensuring that digital payment systems are trusted and widely used by the public.

10.6. CALCULATION METHODOLOGY

The RBI-DPI uses a comprehensive methodology to combine data from various sources into a single, composite score. The calculation process involves three main steps: weightage assignment, normalisation, and aggregation, as shown in Table 10.3 below:

Table 10.3. RBI-DPI Calculation Methodology

Step	Description	Methodology	Link to (Digital) Financial Inclusion
Weightage System	• RBI assigns weightages to the five main components: Payment Enablers, Payment Infrastructure (Demand and Supply-side), Payment Performance, and Consumer Centricity.	• Each component is assigned a weight based on its relative significance in driving digital payments. • Weightages may be periodically adjusted to reflect the evolving digital payments landscape.	• Helps prioritise components critical to financial inclusion, such as Payment Enablers (internet, mobile penetration) and Consumer Centricity (dispute resolution, ease of use).
	• Individual parameters within each component are also weighted according to their specific impact on digital transactions.	• The weighting ensures that essential factors like infrastructure in underserved areas receive adequate focus. • Components influencing access in rural areas may be weighted higher.	• Ensures the system addresses areas where digital financial services require improvement, promoting inclusion by highlighting gaps and targeting policy efforts accordingly.
Normalisation Techniques	• Normalisation ensures that parameters with different units and scales can be combined meaningfully.	• Min-max normalisation scales values between 0 and 1. • Z-score normalisation can be used to account for deviations in data. • Logarithmic transformations manage wide-ranging values like transaction volumes.	• By normalising data, the index allows for fair comparisons across diverse regions and demographics, ensuring inclusion by accounting for different local contexts and payment behaviours.
	• Parameters such as transaction volumes may require different methods, like logarithmic scaling, to prevent outliers from skewing the data.	• This technique provides a more accurate reflection of digital financial adoption trends in various segments of the population.	• Allows both high-growth and underserved regions to be accurately represented, supporting targeted actions for improving financial inclusion.

Step	Description	Methodology	Link to (Digital) Financial Inclusion
Aggregation Methods	• Aggregation involves combining normalised values into a single index score, reflecting the overall state of digital payments.	• Uses weighted sum to combine normalised data. • Geometric mean may be used for certain components, promoting balance across the dataset and reducing the influence of extremes.	• Aggregation across multiple factors gives a comprehensive view of digital payment progress, helping stakeholders see how different regions and demographics are integrating into the digital economy.
	• Ensures that the contributions of each component (e.g., infrastructure, performance) are reflected in the final composite score.	• This holistic view allows policymakers to track whether financial inclusion is improving in rural areas, urban centers, or across different income levels.	• Offers insights into the depth of financial inclusion by showing the extent of digital payment adoption, especially among marginalised or underserved groups.
Key Considerations	• The base period for the DPI is March 2018, meaning all values are calculated relative to this benchmark. Data validation and handling of missing data are critical.	• The RBI uses statistical methods like imputation to account for missing data. • Seasonal adjustments may be made to ensure consistent year-round comparisons.	• Ensures that real-world conditions, such as fluctuations in adoption across different seasons or missing data in rural areas, do not misrepresent progress in financial inclusion efforts.
Implications of the Methodology	• This methodology provides a comprehensive, adaptable view of India's digital financial inclusion and payments landscape, enabling stakeholders to track progress and make informed decisions.	• The RBI continuously refines the index to ensure accuracy and relevance. • The sensitivity of the index allows it to highlight strengths and weaknesses in specific regions or demographic groups.	• Empowers stakeholders to make data-driven decisions on financial inclusion strategies by identifying areas with lower digital payment adoption, prompting interventions to close inclusion gaps.

10.7. HISTORICAL TRENDS IN THE RBI-DPI AND ITS IMPACT ON (DIGITAL) FINANCIAL INCLUSION

The RBI-DPI has been instrumental in tracking the growth of digital financial inclusion and the payment landscape in India. Since the base period of March 2018, the index has consistently shown growth, reflecting the increasing adoption of digital payments across various segments of society. A closer look at the historical trends within the index reveals how this shift has significantly impacted financial inclusion, enabling more individuals and businesses to access formal financial services.

10.7.1. Initial Publication and Base Period

The RBI introduced the DPI in January 2021, with March 2018 as the base period (index value of 100).[vi] This period was chosen because it marked a stable point after significant changes in the payment landscape, particularly following demonetisation in 2016, which accelerated the adoption of digital payment systems as people and businesses sought alternatives to cash. This period marked the beginning of a strong push toward integrating unbanked populations into the formal economy, as the government aimed to reduce cash dependency and formalise economic transactions.

10.7.2. Rapid Growth Phase (2018–2020)

In the early stages, India experienced a rapid growth phase in digital payments, with the index reaching 153.47 by March 2019, reflecting a 53.47% growth in one year.[vii] This growth was primarily driven by the introduction and widespread adoption of the UPI, which provided a fast, secure, and cost-effective solution for conducting transactions, as well as mobile payment apps that facilitated access to digital financial services. UPI further promoted financial inclusion by offering low-cost services, making it easier for individuals in underserved and rural areas to access and engage with the formal financial system. By making digital payments accessible to all, UPI helped bridge the gap between traditional banking and the unbanked, allowing millions to gain access to financial services and participate in the formal economy.

10.7.3. Acceleration during the Pandemic (2020–2021)

The COVID-19 pandemic accelerated the adoption of digital payments as physical interactions became limited. By March 2020, the index reached 207.84, and by September 2020, it climbed further to 217.74, reflecting the rapid shift in consumer behaviour during this period.[viii] The pandemic acted as a

catalyst for financial inclusion by making contactless payments a necessity, especially in rural and semi-urban areas where cash had previously dominated transactions. The continued growth of digital payments during the pandemic demonstrated their resilience, as they facilitated uninterrupted economic activity despite the limitations on physical transactions. Government's initiatives like direct benefit transfers (DBT) via digital platforms ensured that even the marginalised population could access financial aid during the crisis.

10.7.4. Post-Pandemic Momentum (2021 Onwards)

Following the pandemic, the momentum in digital payments continued, with the index reaching 270.59 by March 2021 and 304.06 by September 2021.[ix] This period marked the solidification of digital payments as an integral part of daily life in India. The government's efforts to promote financial inclusion—such as integrating Aadhaar-enabled payments and expanding UPI to feature phones—ensured that digital transactions were not just limited to urban areas but penetrated even the most remote rural locations. This widespread adoption helped reduce the urban-rural divide in financial access, creating a more inclusive financial system.

10.7.5. Recent Trends (2022 Onwards)

The upward trajectory continued into 2022, with the DPI reaching 349.30 by March 2022, 377.46 by September 2022, 395.57 by March 2023, 418.77 by September 2023 and 445.50 by March 2024.[x]

These trends are summarised in Figure 10.6, given above, and Table 10.4, given below, which also records key milestones in terms of achievements across various targets and parameters.

10.7.6. The RBI-DPI and the RBI FI-Index: Implications for Traditional and Digital Financial Inclusion

The RBI-FI Index, which measures financial inclusion by evaluating access, usage, and quality of financial services, has shown steady growth from 43.4 in 2017 to 64.2 in 2024.[xi] This reflects the increased availability and adoption of banking, credit, insurance, and digital payment services among individuals and businesses across India. While the growth has been gradual, it highlights improved access to financial services, particularly, digital payments. The rise of UPI, has played a critical role in driving this change. Digital engagement creates a financial footprint for users, making it easier for them to access additional services, such as loans, insurance, and savings products. As UPI's

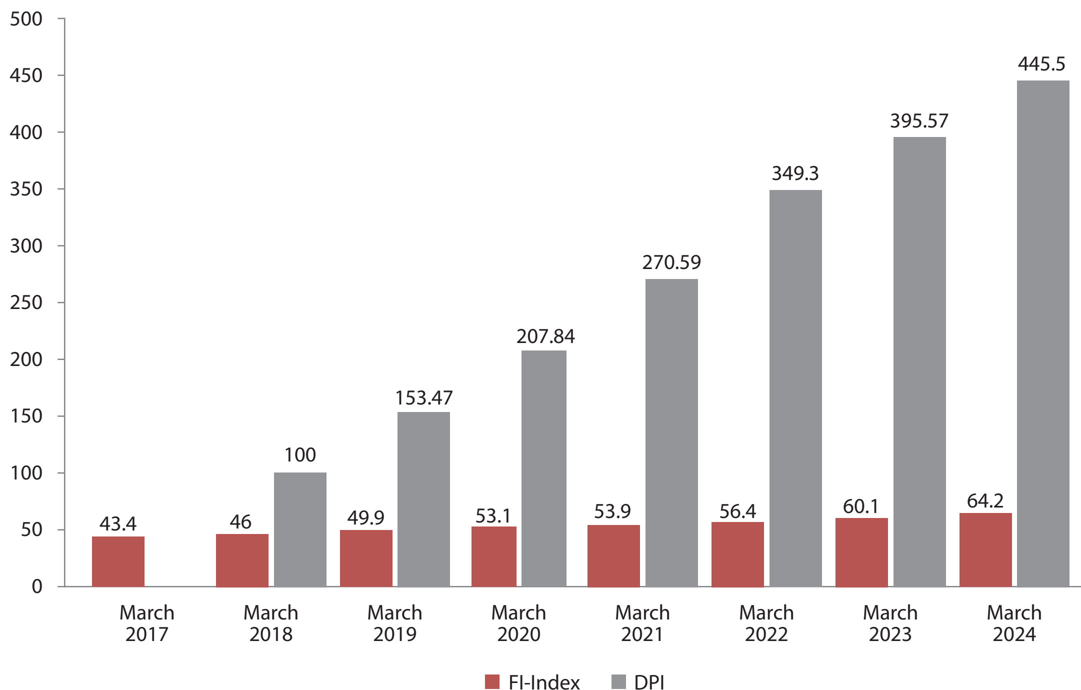

Figure 10.6. RBI FI-Index and RBI-DPI from March 2017 to March 2024
Source: Data Compiled from RBI Press Release, 'RBI FI-Index and RBI-DPI'

Table 10.4. Comparative Analysis of the RBI FI Index, RBI-DPI, and RBI Payment System Data for Tracking Progress of Digital Financial Inclusion in India (End March)

Details	2017	2018	2019	2020	2021	2022	2023	2024
RBI-FI Index	**43.4**	**46**	**49.9**	**53.1**	**53.9**	**56.4**	**60.1**	**64.2**
RBI-DPI	**NA**	**100**	**153.47**	**207.84**	**270.59**	**349.30**	**395.57**	**445.50**
UPI Transactions (Volume)	17.9	915.2	5,391.50	12,518.60	22,330.70	45,956.10	83,714.40	131,129.47
UPI Transactions (Value)	69	1,098	8,769.71	21,320.00	41,040.00	84,160.00	139,150.00	199,950.86
Total Digital Payments (Volume)	9,784.50	14,717.90	23,260.20	34,002.60	43,706.80	71,976.80	113,947.60	164,430.18
Total Digital Payments (Value)	2,177,822.00	2,445,646.00	1,637,134.25	1,619,690.00	1,414,580.00	1,744,010.00	2,086,870.00	2,428,237.99
Total Payments (Volume)	10,991.20	15,888.50	24,383.90	35,044.00	44,377.20	72,676.70	114,656.30	165,093.39
Total Payments (Value)	2,258,780.00	2,527,539.00	1,719,594.90	1,697,940.00	1,470,860.00	1,810,520.00	2,158,500.00	2,500,361.31
% of Total Digital Payments/Total Payments (Volume)	89.02%	92.63%	95.39%	97.03%	98.49%	99.04%	99.38%	99.60%
% of Total Digital Payments/Total Payments (Value)	96.42%	96.76%	95.20%	95.39%	96.17%	96.33%	96.68%	97.12%
% UPI Transactions/ Total Payments (Volume)	0.16%	5.760%	22.11%	35.72%	50.32%	63.23%	73.01%	79.43%
% UPI Transactions/ Total Payments (Value)	0.003%	0.04%	0.51%	1.26%	2.79%	4.65%	6.45%	8.00%
% UPI Transactions/ Total Digital Payments (Volume)	0.18%	6.22%	23.18%	36.82%	51.09%	63.85%	73.47%	79.75%
% UPI Transactions/ Total Digital Payments (Value)	0.003%	0.04%	0.54%	1.32%	2.90%	4.83%	6.67%	8.23%

Source: Data compiled and analysis from RBI Annual Report 2020-21, 2021-22, 2022-23, and 2023-24, FI Index and RBI-DPI Press Release
Note: Unless otherwise stated, Volume is in million, Value is in ₹ billion. The Indices, RBI-Financial Inclusion Index and RBI -Digital Payments Index are numbers

low-cost and user-friendly platform spreads, the participation of users, including those in rural and semi-urban areas, has fuelled the rise in financial inclusion, thus contributing to the growth of the RBI-FI Index.

Although the RBI FI-Index captures more than just digital payments—such as banking access, credit availability, and financial literacy—there is a strong correlation between digital transaction adoption and overall financial inclusion. The digitisation of transactions reduces reliance on cash, increases transparency, and facilitates broader financial participation, indirectly contributing to the growth of the RBI FI-Index.

The RBI-DPI, on the other hand, serves as a direct measure of digital financial inclusion by tracking the penetration and adoption of digital payment methods. The index's surge from 100 in 2018 to 445.50 in 2024 reflects the profound expansion of digital payments, primarily driven by UPI's dominance.

During this period, digital payment volumes increased from 9,784.50 million transactions in 2017 to 164,430.18 million in 2024, while the value of digital payments rose from ₹2,177,822 billion to ₹2,428,237.99 billion. These figures illustrate how digital transactions have become an integral part of the economy. UPI, which accounted for a small fraction of total digital payments in 2017, has now emerged as the dominant force in digital payments, with its transaction volume skyrocketing from 17.9 million in 2017 to 131,129.47 million in 2024. The value of UPI transactions similarly surged from ₹69 billion in 2017 to ₹199,950.86 billion (approximately

₹200 trillion) by 2024.[xii] This indicates how deeply UPI and other digital platforms have penetrated the economy, enabling individuals and businesses to move toward cashless transactions. The DPI tracks this shift toward digitalisation, reflecting how digital payment adoption contributes to the modernisation of the economy and increases access to formal financial services.

UPI's exponential growth in both transaction volume and value has been the primary driver behind the overall rise in digital payments in India. In 2017, UPI accounted for only 0.18% of digital payment volume, but by 2024, it contributed an overwhelming 79.75%, illustrating how it evolved from a niche platform to the dominant mode of digital transactions in India. Although UPI's contribution to total payment value is smaller, increasing from 0.003% in 2017 to 8% in 2024, its strength lies in facilitating a vast number of small-value transactions. This ability to process low-value but frequent transactions has been critical in driving financial inclusion, allowing consumers and small businesses alike to transition from cash-based transactions to digital ones. UPI's role as a facilitator of everyday transactions makes it a cornerstone of India's digital financial inclusion efforts. The impact of UPI on the RBI-DPI is clear.

By offering a reliable, simple, and low-cost method for digital payments, UPI has driven mass adoption and, in turn, significantly boosted the DPI. This has enhanced digital financial inclusion, bringing more people into the formal financial system and creating a more digitally integrated economy.

The share of digital payments as a percentage of total payments by volume rose from 89.02% in 2017 to 99.60% in 2024, indicating that digital methods have nearly replaced cash transactions across the country. This shift has had a direct impact on both the RBI FI-Index and the RBI-DPI. The move from cash to digital channels fosters transparency, ease of access, and security, thereby supporting both indices. In terms of value, digital payments as a percentage of total payments also remained high, increasing from 96.42% in 2017 to 97.12% in 2024. However, it is the rise in transaction volumes, driven by platforms like UPI, that plays a more significant role in pushing the RBI-DPI higher. The increase in transaction frequency signifies wider digital adoption, making the digital ecosystem more inclusive and accessible to a broader population base.

Thus, the growth of financial inclusion in India, as measured by the RBI FI-Index, is increasingly driven by digital financial inclusion, which is captured by the RBI-DPI. While the RBI FI-Index reflects long-term structural improvements in financial inclusion, showing steady growth, in contrast, the RBI-DPI has surged due to the exponential growth in digital payments, with UPI becoming the primary mode of transactions for millions of Indians.

In summary, the analysis of historical trends in the RBI FI-Index and RBI-DPI reveals several critical insights, all of which are intricately tied to the expansion of digital financial inclusion in India.

Firstly, the consistent growth in the index value highlights sustained progress in the digital payments landscape, driven by an increasing number of people adopting digital financial services. As digital financial transactions, such as those facilitated by UPI, became more accessible, financial inclusion expanded, allowing previously excluded populations to participate in the formal financial system. This steady growth indicates that digital platforms are key enablers in bringing more people into the fold of financial services.

Secondly, the accelerating pace of the index's growth underscores the rapid adoption of digital payments across diverse demographics, particularly in rural and underserved areas. The fast uptake of UPI and other digital platforms points to a narrowing digital divide. As digital payment systems become more widespread, they enable previously unbanked or underbanked communities to access and use formal financial services, thus playing a central role in promoting digital financial inclusion.

The resilience of digital payments, particularly during the economic hardships caused by the pandemic, further underscores the importance of digital financial inclusion. Digital platforms like UPI continued to grow even in challenging times, providing a financial lifeline to many, especially those who were previously excluded from the formal financial system. Social security payments and essential financial transactions, which were facilitated through digital channels, allowed the unbanked to receive much-needed support, showcasing how digital financial inclusion can offer economic stability.

Policy interventions have been directly linked to the growth of digital financial inclusion. The introduction of UPI and Aadhaar-linked payment systems, for instance, helped build a robust digital payment infrastructure that made financial services accessible to marginalised groups, including those in rural areas and eeconomically disadvantaged communities. These policies have been key in extending the reach of digital financial services, ensuring that financial inclusion efforts are more inclusive and impactful, especially in regions with limited access to traditional banking.

The observation of seasonal variations in digital payment usage, with fluctuations between March and September, may be tied to factors such as harvest cycles or festival seasons. Addressing these variations through targeted interventions can help sustain digital financial inclusion throughout the year. Ensuring steady access to digital financial services, regardless of season, is crucial for maintaining continuous participation in the formal financial ecosystem.

Infrastructure development has been foundational to the growth of digital financial inclusion. Continuous improvements in digital payment infrastructure, such as expanding internet penetration and increasing smartphone availability, have enabled a larger portion of the population to access and utilise digital financial services. These infrastructure advancements provide the necessary tools for individuals to engage in digital financial transactions, thus driving broader inclusion.

Lastly, the rapid increase in the index reflects a significant shirt in consumer behaviour towards greater adoption of digital financial services. As trust in digital payment platforms like UPI grew, so did consumers' willingness to engage with a broader range of financial services, contributing to deeper digital financial inclusion. This behavioural shift underscores how digital platforms can bridge the gap between traditional financial services and underserved populations, facilitating their integration into the formal financial system.

10.8. KEY LESSONS FOR ENHANCING DIGITAL FINANCIAL INCLUSION

India's experience provides valuable insights into the development and promotion of digital payment systems, emphasising their role in fostering digital financial inclusion. These lessons highlight how digital payment systems can serve as tools for enhancing economic empowerment and access to financial services, especially for underserved communities. Here are the key lessons:

BOX 10.1. MILESTONE ACHIEVEMENTS AND THEIR IMPACT ON DIGITAL FINANCIAL INCLUSION

The milestones reflected in the growth of RBI-DPI underscore significant achievements in digital financial inclusion. The rapid rise of UPI transaction volumes, along with the expanded reach of digital payments into rural and underserved areas, highlights how digital platforms have been instrumental in reducing financial exclusion and enabling broader access to formal financial services. While the RBI does not provide detailed contributions of each component to the index, several trends linked to digital financial inclusion are clear.

Payment enablers, such as increasing internet access and smartphone penetration, have been essential in fostering early growth, laying the foundation for digital financial inclusion. As more people gained access to these technologies, they were able to participate in digital financial services, particularly in areas that were previously excluded from formal financial systems. The expansion of payment infrastructure, including the growing number of UPI-accepting merchants and PoS terminals, has widened the reach of digital financial services, especially in underserved areas, thereby accelerating digital financial inclusion.

Payment performance, driven by the exponential growth in UPI transaction volumes, has significantly reduced reliance on cash, further promoting digital financial inclusion by making everyday transactions accessible through formal digital channels. Additionally, consumer-centric policies focusing on digital literacy, awareness, and dispute resolution have strengthened trust in digital financial services, ensuring sustained adoption and deeper digital financial inclusion.

The historical trends in the RBI-DPI demonstrate the transformative role that digital payments have played in advancing digital financial inclusion across India. By continuously expanding access to digital financial services—especially in rural and underserved areas—the index reflects the remarkable progress made in closing the financial exclusion gap. As India's digital payment ecosystem continues to innovate and expand, the RBI-DPI will remain a key measure of success, providing valuable insights for future strategies aimed at ensuring that digital financial inclusion reaches every corner of the country.

Lesson #1: Holistic Measurement is Mandatory for Tracking Financial Inclusion: The Antardrishti Dashboard, the RBI FI-Index, and the RBI-DPI together use a comprehensive approach, incorporating factors such as payment infrastructure, enablers, and performance. This multi-dimensional assessment helps identify barriers to financial inclusion and supports targeted interventions to boost digital payment adoption and digital financial inclusion, particularly in underserved regions.

Lesson #2: Infrastructure is Key to Enhancing Financial Access: Digital infrastructure, including internet connectivity and smartphone penetration, is fundamental for adopting digital payment systems. Expanding infrastructure in underserved areas is crucial to bringing previously unbanked populations into the formal financial system. Investment in digital infrastructure directly supports the growth of digital payment platforms, driving broader financial inclusion.

Lesson #3: Consumer-Centric Approaches Enhance Adoption of Digital Transactions: User experience, trust, and awareness are as important as the technological aspects of digital payments. By focusing on consumer needs—through improved digital literacy and building trust—platforms can reach financially excluded populations, particularly in rural areas. A consumer-centred approach fosters wider digital payment adoption and deeper financial inclusion.

Lesson #4: Balanced Regulatory Frameworks That Promote Innovation and Customer Protection Enhance Inclusion: Supportive regulatory policies are key to promoting digital payments. A strong, inclusive regulatory framework ensures that digital payment systems remain secure, accessible, and reliable. By encouraging innovation while maintaining consumer protection, regulations help expand financial inclusion, particularly for marginalised groups.

Lesson #5: Continuous Evolution of Digital Ecosystem is Crucial for Long-Term Financial Inclusion: The digital payments landscape is rapidly evolving, and regular adjustments ensure that digital payment systems stay inclusive and accessible to underserved populations, thereby promoting long-term financial inclusion.

Lesson #6: Data-Driven Policymaking Drives Financial Inclusion Interventions to Areas Where Needed: The Antardrishti Dashboard, the RBI FI-Index, and the RBI-DPI together aid in data-driven policymaking, enabling stakeholders to identify areas where interventions are most needed. This data-centric approach allows for the prioritisation of efforts in specific regions or demographics, making financial inclusion efforts more effective and targeted.

Lesson #7: Enhancing Security in Digital Payment Systems Facilitates Sustained Financial Inclusion: While tracking digital payment growth, the Antardrishti Dashboard, the RBI FI-Index, and the RBI-DPI together highlight the importance of security. A robust security framework builds trust in digital payment systems, especially among populations hesitant to adopt them. Enhancing security reduces fraud risks and supports sustainable digital financial inclusion.

Lesson #8: Digital Payments Are a Key Driver of Financial Inclusion: Digital payments offer an accessible alternative to traditional banking services. They help bring previously unbanked individuals into the formal financial system by overcoming conventional barriers, such as the physical distance to banks, thereby broadening financial participation.

Lesson #9: Addressing Regional Disparities is Crucial for Distributed and Balanced Financial Inclusion: Significant regional disparities in digital payment adoption exist, reflecting uneven development of digital infrastructure. Bridging these gaps is essential for equitable financial inclusion. Targeted infrastructure investments and policy interventions are needed to ensure that financial inclusion is evenly distributed across all regions.

Lesson #10: Public-Private Collaboration is Vital for Driving Financial Inclusion: The Antardrishti Dashboard, the RBI FI-Index, and the RBI-DPI underscore the importance of public-private partnerships in driving financial inclusion. Collaboration between government initiatives and private sector innovation accelerates the expansion of digital payment systems, providing financial services to underserved populations and promoting broader financial access.

Lesson #11: Technology Neutrality Encourages Innovation and Facilitates Widespread Financial Inclusion: The technology-neutral stance of the Antardrishti Dashboard, the RBI FI-Index, and the RBI-DPI fosters innovation by enabling a variety of digitalpayment solutions that cater to diverse user needs. This flexibility ensures that digitalfinancial solutions remain accessible to a wide range of populations, promoting inclusive growth in digital payments.

Lesson #12: Government Initiatives Propel Financial Inclusion: Government-led initiatives, such as the Digital India campaign and the PMJDY, have played pivotal roles in driving digital payments and

financial inclusion. These efforts have expanded digital infrastructure, payment enablers, and consumer confidence, particularly in underserved regions.

Through these lessons, the Antardrishti Dashboard, the RBI FI-Index, and the RBI-DPI collectively illustrate how coordinated efforts across various sectors—government, financial institutions, technology providers, and consumers—can drive digital financial inclusion and create a more accessible financial ecosystem for all.

10.9. CONCLUSION: UNIFYING DIGITAL PAYMENTS, FINANCIAL INCLUSION, AND REAL-TIME INSIGHTS FOR INDIA'S FUTURE

India's journey toward financial inclusion is one of innovation, collaboration, and relentless pursuit of progress, with digital payments at its core. The RBI-DPI, the FI-Index, and the Antardrishti Financial Inclusion Dashboard together form a powerful triad that captures, measures, and drives this transformation. These tools not only quantify the impact of various initiatives but also provide actionable insights, ensuring financial services are accessible to all, particularly underserved populations in rural and economically challenged areas.

The RBI-DPI tracks the growth of digital payments, reflecting the increasing adoption of financial services across India. It highlights how government initiatives like demonetisation, UPI, and PMJDY have revolutionised the payment landscape, bringing millions into the formal financial system. By fostering digital adoption through initiatives like Aadhaar and the Payments Infrastructure Development Fund (PIDF), India has laid the foundation for equitable access to financial services. These efforts have been critical in pushing financial inclusion forward, as evidenced by improvements in both the FI-Index and the real-time insights provided by the Antardrishti Dashboard.

What sets India's approach apart is its dynamic feedback loop. The Antardrishti Dashboard allows for real-time monitoring of financial inclusion efforts, highlighting where progress is being made and where additional efforts are needed. This ensures that stakeholders—governments, financial institutions, FinTech companies, and policymakers—can make informed decisions, targeting their strategies to close gaps and foster inclusive growth.

In conclusion, India's financial inclusion story, driven by digital payments, is a testament to the power of data-driven strategies, innovative policies, and public-private collaboration. The RBI-DPI, alongside the FI-Index and Antardrishti Dashboard, enables stakeholders to track, assess, and drive real-time progress, ensuring that digital financial services are accessible to every segment of society. Together, these tools underscore India's commitment to building an inclusive financial future—one where every individual, regardless of location or socioeconomic status, can participate fully in the country's economic growth. As India continues to evolve its digital payment ecosystem, these indices will remain critical in shaping and realising the nation's vision of comprehensive financial inclusion.

ENDNOTES

i RBI, (September 2021), 'Financial Inclusion Index for India', https://rbi.org.in/scripts/BS_ViewBulletin.aspx?Id=20502

ii See RBI (2023), https://rbi.org.in/Scripts/BS_PressReleaseDisplay.aspx?prid=55796

iii See RBI, (July 2024), 'RBI-Digital Payments Index for March 2024', https://rbi.org.in/scripts/BS_PressReleaseDisplay.aspx?prid=58371

iv See RBI, (January 2021), 'Reserve Bank of India introduces the RBI-Digital Payments Index', https://www.rbi.org.in/scripts/FS_PressRelease.aspx?prid=50901&fn=9

v Source: 'RBI-Digital Payments Index – Parameters and Sub-parameters', https://rbidocs.rbi.org.in/rdocs/content/pdfs/PR87401012021.pdf

vi Source RBI, (July 2024), 'RBI-Digital Payments Index for March 2024', https://rbi.org.in/scripts/BS_PressReleaseDisplay.aspx?prid=58371

vii Source RBI, (July 2024), 'RBI-Digital Payments Index for March 2024', https://rbi.org.in/scripts/BS_PressReleaseDisplay.aspx?prid=58371

viii Source RBI, (July 2024), 'RBI-Digital Payments Index for March 2024', https://rbi.org.in/scripts/BS_PressReleaseDisplay.aspx?prid=58371

ix Source RBI, (July 2024), 'RBI-Digital Payments Index for March 2024', https://rbi.org.in/scripts/BS_PressReleaseDisplay.aspx?prid=58371

x Source RBI, (July 2024), 'RBI-Digital Payments Index for March 2024', https://rbi.org.in/scripts/BS_PressReleaseDisplay.aspx?prid=58371

xi See RBI, Press Release (2024-2025/662), 'Financial Inclusion Index for March 2024', https://rbi.org.in/scripts/FS_PressRelease.aspx?prid=58259&fn=2754 and RBI, (September, 2021), 'Financial Inclusion Index for India', https://rbi.org.in/scripts/BS_ViewBulletin.aspx?Id=20502

xii See RBI Annual Report 2020-21, 2021-22, 2022-23, and 2023-24.

The Unified Payments Interface (UPI): India's Game-Changing Instant Digital Payment System

Ramesh Srivatsava Arunachalam

11

11.1. INTRODUCTION

In the past few years, India has made remarkable strides in modernising its payment infrastructure, most notably through the Unified Payment Interface (UPI). This groundbreaking initiative, spearheaded by the National Payments Corporation of India (NPCI) and supported by the Reserve Bank of India (RBI), began as an innovative yet ambitious project. It has since evolved into a digital powerhouse, reshaping the financial behaviour of millions nationwide. Since its launch in 2016, UPI has seen phenomenal growth, starting from a baseline of zero transactions in June 2016 to processing over 14.4 billion transactions worth ₹20.64 trillion in a single month by July 2024.[i] UPI has revolutionised how Indians engage with digital payments by offering a seamless, real-time, and secure platform for transactions between bank accounts via virtual payment addresses (VPAs). This public infrastructure has gained widespread adoption and redefined what financial inclusion means in India.

Before UPI's inception, transferring money between individuals or entities online was complex and often prone to errors. Users had to input various bank details, including the account number, bank name, branch address, and the Indian Financial System Code (IFSC), to complete transactions. This cumbersome procedure was time-consuming and carried the risk of misdirected funds if any details were entered incorrectly. With the introduction of UPI, the way India handles digital transactions has transformed, ushering in an era of simplicity, speed, and security.

11.2. UPI: REVOLUTIONISING DIGITAL PAYMENTS IN INDIA

Box 11.1. describes the process and features by which UPI is transforming digital payments in India. In fact, UPI stands at the forefront of this revolution, creating an ecosystem that facilitates simple and efficient digital transactions. Its success in streamlining digital payments is a model that can be replicated globally, setting the standard for how inclusive digital infrastructure can empower people and economies alike. An examination of UPI's performance reveals extraordinary trends. In 2022 alone, UPI recorded over 74 billion transactions, totalling ₹125.95 trillion. By 2023, these impressive numbers were surpassed, registering an annual volume of 117.6 billion transactions, with a cumulative transaction value of ₹182.84 trillion. Monthly volumes hit a new high in December 2023, exceeding 12 billion transactions, and by July 2024, UPI set another record with 14.4 billion transactions processed in a single month. One of the most striking indicators of UPI's inclusivity is the reduction in the average transaction value over time. In its initial phase (October 2016), the average transaction value was ₹4,857, but by July 2024, it had dropped to ₹1,430 – a staggering 70.56% decline.[ii] This demonstrates that UPI has not only scaled up but has also become a more accessible and inclusive platform for individuals across varying income levels.

BOX 11.1. UPI'S OPERATIONAL FEATURES AND CHARACTERISTICS

As described below, the UPI has transformed digital payments in India, offering a seamless, secure, and efficient platform for individuals and businesses. It has simplified traditional banking complexities by enabling instant, real-time transactions across banks with just a VPA. UPI's interoperability, fortified security, and 24/7 availability have made it a vital tool in India's transition to a cashless economy, promoting financial inclusion and empowering millions with easy access to modern financial services.

Real-Time, Round-the-Clock Payments: One of UPI's most significant breakthroughs is its ability to facilitate instantaneous real-time transfers, surpassing older systems like NEFT and RTGS. Transactions are settled immediately, making UPI the preferred choice for users seeking quick and convenient payments. Furthermore, UPI's 24/7 availability ensures that users can transact anytime, regardless of bank hours or public holidays, enhancing its appeal in today's fast-paced environment.

Security and Encryption, Trust at the Core: UPI places a strong emphasis on security, using end-to-end encryption and two-factor authentication for every transaction. This robust security infrastructure, rooted in the IMPS platform, protects users' banking details and ensures confidentiality of all transactions. Whether for a small purchase from a local vendor or a high-value transfer, UPI's security measures offer peace of mind. It is also to handle cybersecurity threats such as Distributed Denial-of-Service (DDoS), ransomware, malware, man-in-the-middle and zero-day attacks that come with enhanced digitization.

Interoperability and Flexibility, Freedom to Transact: UPI's interoperable architecture is one of its key innovations. Users can make payments across different banks using any UPI-enabled app, offering flexibility and removing barriers between financial institutions. This seamless connection between banks promotes competition and ensures that users are not tied to a single banking system. Additionally, multiple bank accounts can be linked to a single UPI app, allowing users to switch between accounts effortlessly within one platform, whether for personal or business purposes. This interoperability gives phenomenal freedom to users to seamlessly shift between and across applications within the entire ecosystem.

QR Code Payments, Contactless Convenience: To enhance the user experience, UPI supports QR code payments, widely used by merchants. Customers can complete payments instantly through their UPI app by simply scanning a merchant's QR code. This contactless and user-friendly option has seen significant adoption, particularly among small businesses and the retail sector, providing a fast, secure, and efficient way to pay. Especially in the wake of the COVID-19 pandemic contactless payments using QR codes also offer significant health benefits to users.

Expanding Services, More Than Just Transfers: UPI has evolved into a comprehensive digital platform, offering various value-added services beyond peer-to-peer transfers. Users can pay bills, recharge phones, make investments, purchase insurance, or gain access to loans through UPI apps. This expansion has transformed UPI into a one-stop solution for a broad range of need-based financial services, making it indispensable in the digital ecosystem.

Democratising Digital Payments and Financial Inclusion: UPI has been a key driver in democratising digital payments in India. By simplifying online money transfers into a straightforward exchange of virtual addresses, it has accelerated the country's transition towards a less-cash economy. UPI's low transaction costs and accessibility have made it a powerful tool for financial inclusion, enabling grassroots businesses and rural areas to embrace digital payments. Millions, including the unbanked and the underbanked, now have access to modern payment systems and financial services, fostering greater economic participation and inclusion.

Empowerment Through Simplicity: The true strength of UPI lies in its ability to empower both individuals and businesses. For example, small vendors who once struggled with cash payments have embraced UPI's QR code functionality, allowing them to accept digital payments seamlessly. UPI's simplicity and security have made it a critical tool for financial literacy and economic empowerment, reaching even the most remote parts of India. The introduction of conversational payments by NPCI in 2023 is expected to further enhance digital and process literacy on the go.

Unmatched Convenience and Speed: In essence, UPI distils the complexity of money transfers into a simple virtual exchange, bypassing the need for cumbersome bank details. Its real-time settlement offers instant gratification, appealing to users who value speed and efficiency, making UPI a revolutionary tool in the age of immediacy. This convenience is further bolstered by the system's interoperability, which allows for harmonious coexistence of multiple bank accounts and payment services under one platform.

By combining security, flexibility, and ease of use, UPI has not only transformed digital payments in India but has also played a pivotal role in promoting financial inclusion. Its innovative features, broad accessibility, and strong commitment to security have made it a cornerstone of India's modern financial infrastructure.

Indeed, UPI has thus dramatically increased access to digital payments for millions of people, integrating hundreds of banks into its ecosystem and gaining millions of registered users. By end of March 2024, UPI accounted for an impressive 88.24% of the volume and nearly 29.60% of the value of all digital retail payments (credit transfers) in India.[iii] Peer to Peer (P2P) transactions have seen remarkable growth, with UPI usage more evenly spread across geographies, income groups, and genders compared to traditional cards and digital wallets. The platform's interoperability has been a defining feature, breaking down barriers between bank-only channels like net banking, debit/credit cards, and mobile banking. UPI's open architecture and simple, low-cost structure have made it a preferred payment method for merchants, even surpassing credit and debit cards for merchant collections. This shift towards digitisation has paved the way for small businesses and MSMEs to gain greater access to formal financial systems, promoting inclusion.

During the COVID-19 pandemic, UPI further proved its value by enabling swift and contactless digital payments, which helped reduce virus transmission while maintaining economic activity. Several million accounts received government relief payments through UPI, particularly women, farmers, and the elderly.[iv] UPI's link to bank accounts made it an ideal platform for distributing social welfare benefits securely and transparently. Financial regulators have also encouraged UPI as a channel for faster, more transparent processes in insurance claims and loan disbursements, enhancing access to financial entitlements for millions. In addition, UPI's integration with India's Open Credit Enablement Network (OCEN) and likely amalgamation with the recently announced Unified Lending Interface (ULI)[v] holds immense potential for improving access to affordable credit through consent-based financial data sharing. The success of UPI as a public digital infrastructure underscores its role in promoting inclusion, formalisation, and resilience within India's financial ecosystem.

Furthermore, UPI enhances efficiency and lowers costs by fostering open competition among financial service providers operating on a shared platform. As a public good, UPI aligns innovation within the financial sector towards more inclusive and resilient outcomes. As demonstrated through various metrics, UPI's contribution to India's digital financial landscape is unparalleled. It has transformed how individuals and businesses interact with the financial services sector and laid the foundation for a more inclusive and robust financial ecosystem.

The broader implications of UPI's success extend far beyond India's borders (see Box 11.2.). Its open architecture, seamless workflows, and interoperability offer a model that other nations can adopt to accelerate global financial inclusion. Countries at various stages of developing their digital financial services can benefit from UPI's approach of unifying banks and financial services platforms under a public digital infrastructure strategy. This model can significantly enhance access to digital financial services, particularly in countries with widespread mobile phone penetration and robust digital identity systems.

BOX 11.2. UPI's GLOBAL JOURNEY: EXPANDING FRONTIERS IN DIGITAL PAYMENTS[vi]

India's UPI continues to expand its global presence, now making its way to the heart of Paris. The flagship store of Galeries Lafayette on Haussmann Boulevard has begun accepting UPI payments, a significant step in realising Prime Minister Narendra Modi's vision of globalising UPI. With UPI already active in seven countries, including Bhutan, France, Mauritius, Nepal, Singapore, Sri Lanka, and the UAE, this expansion is transforming how Indian travellers manage payments abroad. France's acceptance of UPI at iconic locations like the Eiffel Tower and Galeries Lafayette further underscores its potential to revolutionise international payments for tourists and businesses.

NPCI International Payments Limited (NIPL), a subsidiary of NPCI, is driving UPI's international expansion. By fostering partnerships with institutions like the Royal Monetary Authority of Bhutan and UAE's Mashreq Bank, NIPL enables seamless, secure, and real-time payments for Indian travellers while supporting the global modernisation of payment systems. NIPL's vision extends beyond just serving Indian users abroad; it offers technological expertise to help other countries develop their own real-time payment infrastructure. With UPI gaining acceptance in major destinations and businesses, it is reshaping international commerce, promoting financial inclusion, and creating a flourishing global payments ecosystem.

Thus, UPI's remarkable success in India serves as a blueprint for other nations seeking to enhance financial inclusion and digitise their payment systems. Its scalability, inclusivity, interoperability and efficiency underscore its potential as a global model for digital financial transformation.

11.3. ORIGIN AND GROWTH OF UPI

While UPI's achievements in advancing financial inclusion across users, use cases, and ecosystem stakeholders in India have been remarkable, its journey has not been without challenges. In its early years, UPI faced several obstacles that slowed its adoption and growth. A closer examination of the origins and initial development of UPI shows how it eventually transformed into a revolutionary digital payment system.

11.3.1. The Beginning of UPI's Journey (2016-2017)

UPI was officially launched in April 2016 by the NPCI, marking the start of a new era in India's digital payments landscape. However, the adoption of the system by banks and consumers took time to gain momentum. In June 2016, only 21 banks were live on the platform, allowing customers to use UPI services. As a result, no transactions were recorded during the first month of operation.

Throughout the remainder of 2016, growth in bank participation remained slow. By December 2016, the number of banks live on UPI had increased to 35, yet transaction volumes and values were still negligible. In that month, UPI processed just 1.99 million transactions, with a total value of ₹7.08 billion.[vii] These modest figures indicated the slow uptake among Indian consumers during the UPI's early phase, as many were still unfamiliar with digital payment systems.

Despite the slow start, UPI began to show signs of growth in 2017, driven in part by private sector banks recognising the platform's potential. These banks quickly developed their own UPI apps and started enrolling customers. As a result, the number of banks offering UPI services surged from 36 at the start of 2017 to 55 by August of the same year.[viii]

However, even with this increased participation from banks, transaction volumes and values remained relatively low. In September 2017, more than 1.5 years after UPI's launch, the system recorded 30 million transactions, totalling ₹53.26 billion in value.[ix] While this was a significant improvement compared to the previous year, it still reflected the challenges of consumer FinTech adoption. Despite the government's push for digital payments following the 2016 demonetisation, many consumers were still slow to embrace UPI.

The early phase of UPI's journey demonstrates the challenges any new technological innovation faces in a market dominated by traditional financial habits. Yet, this period also laid the foundation for UPI's later success. As more banks joined the system and consumers became aware of UPI's convenience and security, the platform began to gain momentum, setting the stage for exponential growth in the years to come.

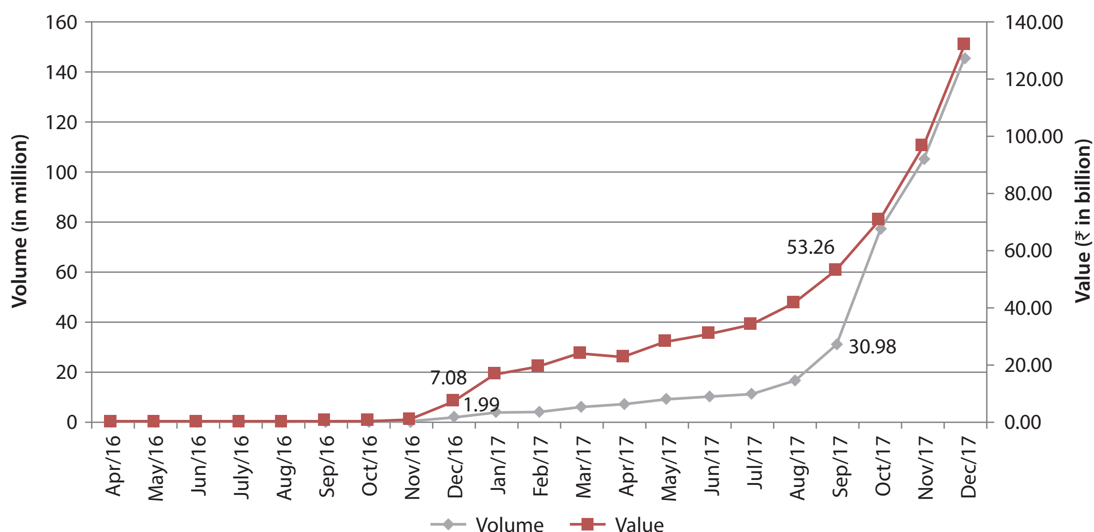

Figure 11.1. Beginning of the UPI Journey from 2016 to 2017

Source: NPCI, https://www.npci.org.in/what-we-do/upi/product-statistics

11.3.2. 2018: A Turning Point for UPI Adoption

The year 2018 marked a decisive shift in the adoption of UPI among Indian consumers. After a slow start, UPI began to experience substantial growth, with transactions showing strong month-on-month upward trends. This acceleration was driven by a combination of factors: banks and FinTech companies aggressively promoting UPI through various incentives and the integration of UPI into popular third-party apps such as Paytm, PhonePe, and Google Pay. These platforms significantly broadened access to UPI, making it easier for millions of consumers to embrace digital payments in their daily lives.

By April 2018, monthly transaction volumes had risen to 190.08 million. Just a few months later, in September 2018, this number more than doubled to over 405.87 million transactions. The total value of these transactions also saw remarkable growth, jumping from ₹270.22 billion in April 2018 to about ₹598.35 billion by September.[x] This sharp increase in volume and value firmly established UPI as a preferred payment method for a wide range of uses, from peer-to-peer transfers to merchant payments, especially for smaller-value transactions that were previously dominated by cash.

The rapid adoption of UPI was not limited to consumers. The number of banks supporting the platform also grew significantly between 2017 and 2018, ensuring more people could access UPI's benefits. In January 2018, only 71 banks were live on UPI, but by October 2019, this number had nearly doubled to 141,[xi] encompassing virtually all major consumer banks in India. This expansion in bank participation helped address the growing demand for digital payment solutions, providing the necessary infrastructure for UPI to scale.

The combination of FinTech innovation, third-party app support, and the rapid expansion of bank partnerships established UPI as a robust and scalable digital payment system. The growth seen in 2018 solidified UPI's role in processing frequent, low-value transactions, creating a solid foundation for its continued rise in India's digital economy. That year was a watershed moment in UPI's journey, transforming it from a promising new technology into a mainstream payment method accessible to millions of users nationwide.

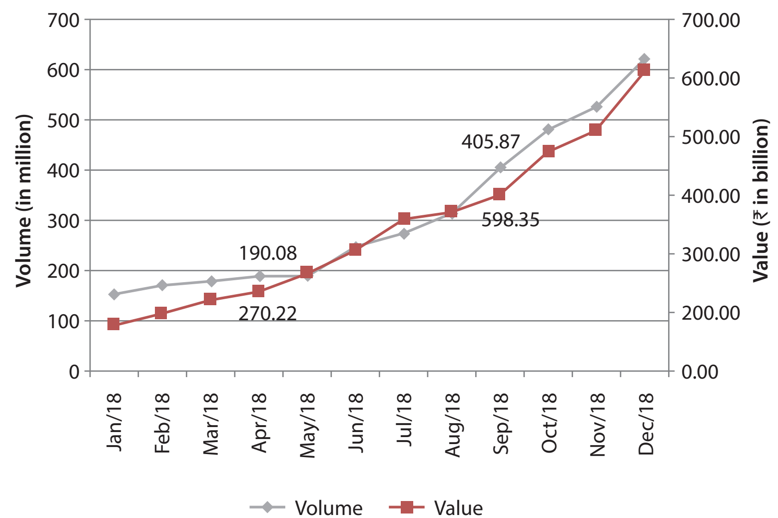

Figure 11.2. Picking Up Steam (2018 Onwards)

Source: NPCI, https://www.npci.org.in/what-we-do/upi/product-statistics

11.3.3. Surpassing Milestones through the Power of Network Effects (2019–2022)

The period from 2019 to 2022 was transformative for UPI, marked by explosive growth driven by network effects. As more banks, merchants, and third-party apps adopted the platform, UPI gained immense traction nationwide, solidifying its position as India's leading digital payment system. The network effect, where each additional user increases the value of the service for others, played a pivotal role in pushing UPI past several significant milestones during these years.

By January 2019, UPI was already processing an impressive 672.75 million transactions per month, with a total value of ₹1,099.32 billion. However, this was only the beginning of UPI's mainstream success. By October 2019, the platform had crossed 1.148 billion monthly transactions, with a transaction value of ₹1,913.60 billion.[xii] This rapid growth showcased UPI's rising dominance in digital payments as consumers, businesses, and banks increasingly embraced the system.

11.3.3.1. Resilience Amidst the Pandemic

The onset of the COVID-19 pandemic in 2020 presented a unique challenge, temporarily disrupting UPI's growth. In April 2020, during the nationwide lockdown, monthly transactions dipped below 1 billion for the first time in several months, totalling 999.57 million transactions with a corresponding value of ₹1,511.41 billion.[xiii] This decline reflected the broader economic slowdown as physical mobility and spending were restricted. However, UPI's decline was short-lived as its inherent advantages—contactless, digital, and secure payments—became even more relevant during the pandemic.

As lockdown measures eased, UPI bounced back quickly. By August 2020, monthly transactions surged to 1.62 billion, marking a remarkable recovery in just a few months. By March 2021, the platform was handling 2.73 billion transactions per month, with the total transaction value crossing the ₹5,000 billion mark.[xiv] This recovery was driven by broader acceptance of UPI among both merchants and consumers, all of whom increasingly preferred digital payments over cash due to health and safety concerns.

11.3.3.2. Crossing Major Milestones: 2021–2022

From 2021 through 2022, UPI continued to break records, firmly establishing itself as India's most widely used digital retail payments platform. By mid-2022, UPI had overtaken credit and debit cards in both transaction volume and payment processing value. The sheer number of transactions processed each month demonstrated UPI's growing dominance, with 5.40 billion transactions recorded as early as March 2022.[xv] This level of usage not only reflected UPI's ease and accessibility but also highlighted its role in advancing financial inclusion across the country.

11.3.4. Consistent Growth Phase (July 2022 Onwards to July 2024)

The period from July 2022 to July 2024 witnessed steady and consistent growth, building upon the rapid expansion witnessed between 2018 and 2022. This era reflects the mainstream acceptance of digital payment systems, which has fuelled substantial, double-digit percentage increases in both usage and transaction value over the past two years.

At the start of this phase in July 2022, monthly transactions stood at approximately 6.28 billion. By July 2024, this number had more than doubled, soaring to 14.43 billion transactions. This represents an absolute growth of 8.15 billion transactions in just 24 months, illustrating the impressive scale and pace of adoption. This growth indicates not only the increasing integration of digital payments into everyday life but also the expanding trust that both consumers and businesses have in these systems.

Moreover, the total value of transactions processed has seen an equally remarkable rise. In July 2022, the monthly transaction value stood at ₹10.63 trillion. By July 2024, this figure had surged to ₹20.64 trillion, nearly doubling in just two years.

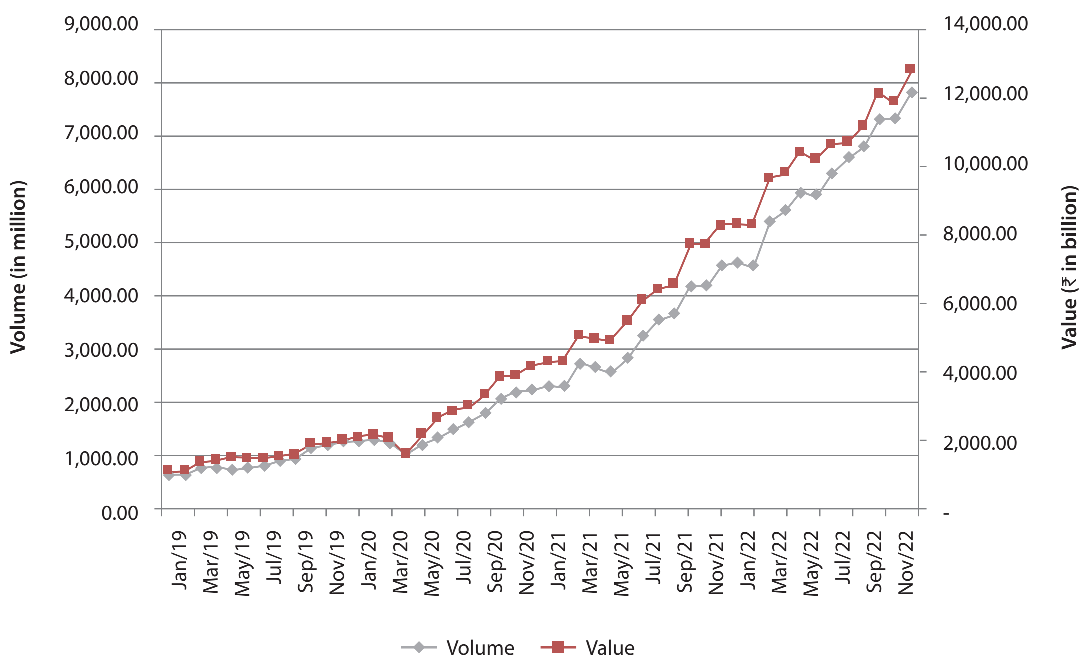

Figure 11.3. Surpassing Milestones through Network Effect from 2019–2022

Source: NPCI, https://www.npci.org.in/what-we-do/upi/product-statistics

This sharp increase reflects both the expanding economic activity facilitated by the UPI payment and the increasing role of the system in transaction across sectors.

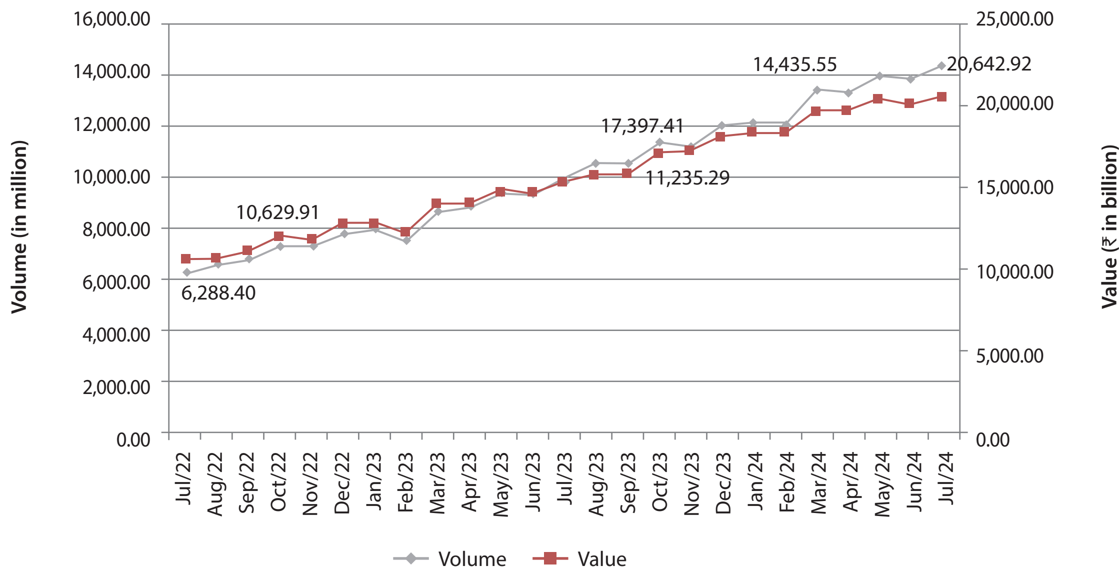

Figure 11.4. Consistent Growth Phase (2022 Onwards July 2024)

Source: NPCI, https://www.npci.org.in/what-we-do/upi/product-statistics

The widespread adoption of UPI has been further bolstered by the rapid expansion of participating banks (Figure 11.5.). By July 2024, more than 605 banks[xviii] were live on UPI, covering nearly all major consumer and regional banks in the country. This broad network of banks, combined with growing merchant adoption, has enabled UPI to extend its reach beyond metropolitan cities into tier 2 and 3 cities, and even rural areas. As more consumers in smaller towns and rural regions gained access to UPI the platform played a crucial role in digitising payments across India's diverse geography.

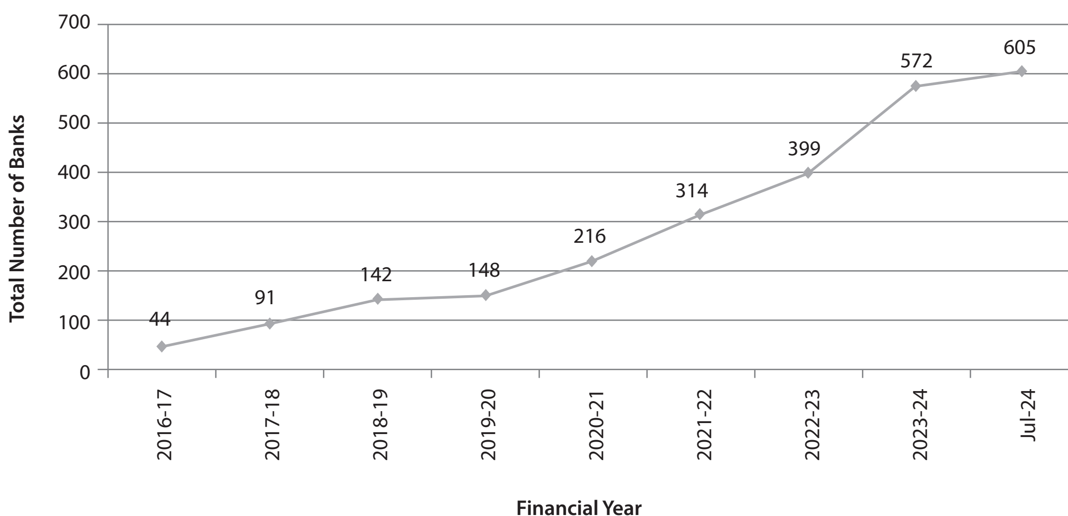

Figure 11.5. Total Number of Banks Live on UPI From FY 2016-17 to July 2024

Source: NPCI, https://www.npci.org.in/what-we-do/upi/product-statistics

The combination of rising transaction volumes and values showcases the robustness and reliability of the digital payment infrastructure, with month-on-month growth becoming a hallmark of this period. This consistent upward trajectory underscores how digital payments have cemented their role as a critical part of the financial ecosystem, enhancing efficiency, accessibility, convenience and transparency for users across various sectors. Ultimately, the period from July 2022 to July 2024 represents a significant chapter in the evolution of the UPI system, with robust growth reinforcing the mainstream acceptance and critical importance of digital payments in the modern economy.

11.3.5. UPI's Annual Turnover in RBI's Payment System Retail Segment

No discussion on the UPI would be complete without highlighting its annual turnover within the RBI Retail Payment System. The table below lists UPI's transaction volume and value data, both in absolute terms and as a proportion of the RBI Retail Payment System on a yearly basis.

As evident from Table 11.1. above, the volume of transactions in the retail payment segment has seen dramatic changes over the past five years. Specifically, the data suggest that UPI has emerged as a key player, rapidly increasing its dominance within the RBI Payment System. In 2018–19, UPI recorded 5,391.50 million transactions, representing 45.51% of the retail payment (credit transfers) segment. This was already a considerable share for a payment method introduced only a few years earlier. By 2019–20, UPI's volume more than doubled to 12,518.60 million, capturing 60.68% of the market, showcasing its growing acceptance and ease of use among the Indian population. This upward trend continued, with UPI accounting for 22,330.70 million transactions in 2020–21, marking 70.25% of the retail payments volume. UPI's exponential growth became even more pronounced in the subsequent years. In 2021–22, the volume surged to 45,956.10 million, accounting for 79.52% of the total retail payment transactions. By 2022–23, the figure increased to 83,714.40 million, grabbing an 85.10% share, and by 2023–24, UPI dominated the retail payment landscape with an incredible 131,129.47 million transactions (31 March 2024), holding 88.24% of the total volume. The data from this period underscores how UPI has become virtually synonymous with digital (credit transfer) payments in India's retain segment, growing from a promising innovation to the primary channel for digital transactions.

Just as transaction volumes have grown, the total value of payments has also seen remarkable increases, with UPI playing an increasingly important role in retail payment values (See Table 11.2.).

In 2018–19, UPI transactions were valued at ₹8,769.71 billion, representing just 3.36% of the total value of retail payments. However, UPI's growth was rapid. By 2019–20, the transaction value more than doubled to ₹21,320 billion, representing 7.47% of the retail payment value. In 2020–21, UPI accounted for ₹41,040 billion, which was 12.25% of the total value of retail (credit transfer) payments.

In the following years, UPI's growth in transaction value became even more impressive. By 2021–22, UPI transactions were valued at ₹84,160 billion, accounting for 19.70% of the retail

Table 11.1. UPI Annual Turnover in RBI Payment System Retail Segment Data – Volume (in million) and Percentage Share[xix]

Item	FY 2018–19	FY 2019–20	FY 2020–21	FY 2021–22	FY 2022–23	FY 2023–24
UPI	5,391.50[xx] (45.51)	12,518.60 (60.68)	22,330.70 (70.25)	45,956.10 (79.52)	83,714.40 (85.10)	131,129.47 (88.24)
Credit Transfers	**11,848.10 (100.00)**	**20,629.70 (100.00)**	**31,786.80 (100.00)**	**57,793.50 (100.00)**	**98,369.50 (100.00)**	**148,610.69 (100.00)**
Total - Retail Payments	**24,247.30 (22.24)**	**34,893.30 (35.88)**	**44,218.00 (50.50%)**	**72,468.90 (63.41)**	**114,413.80 (73.17)**	**164,823.37 (79.56)**
Total Payments	**24,383.90 (22.11)**	**35,044.00 (35.72)**	**44,377.20 (50.32)**	**72,676.70 (63.23)**	**114,656.30 (73.01)**	**165,093.39 (79.43)**
Total Digital Payments	**23,260.20 (23.18)**	**34,002.60 (36.82)**	**43,706.80 (51.09)**	**71,976.80 (63.85)**	**113,947.60 (73.47)**	**164,430.18 (79.75)**

Note: Figures in the parentheses indicate percentages of UPI to Payment System Turnover.
FY– Financial Year. All data is as of the end of March.
Source: RBI Annual Report 2020–21, 2021–22, 2022–23, and 2023–24

Table 11.2. UPI Annual Turnover in RBI Payment System Retail Segment Data – Value (₹ in billion) and Percentage Share[xxi]

Item	FY 2018–19	FY 2019–20	FY 2020–21	FY 2021–22	FY 2022–23	FY 2023–24
UPI	8,769.71 (3.36)	21,320.00 (7.47)	41,040.00 (12.25)	84,160.00 (19.70)	139,150.00 (25.29)	199,950.86 (29.60)
Credit Transfers	**260,904.71 (100.00)**	**285,570.00 (100.00)**	**335,040.00 (100.00)**	**427,280.00 (100.00)**	**550,120.00 (100.00)**	**675,428.59 (100.00)**
Total - Retail Payments	**362,713.03 (2.42)**	**386,380.00 (5.52)**	**414,860.00 (9.89)**	**523,940.00 (16.06)**	**659,040.00 (21.11)**	**791,494.61 (25.26)**
Total Payments	**1,719,594.90 (0.51)**	**1,697,940.00 (1.26)**	**1,470,860.00 (2.79)**	**1,810,520.00 (4.65)**	**2,158,500.00 (6.45)**	**2,500,361.31 (8.00)**
Total Digital Payments	**1,637,134.25 (0.54)**	**1,619,690.00 (1.32)**	**1,414,580.00 (2.90)**	**1,744,010.00 (4.83)**	**2,086,870.00 (6.67)**	**2,428,237.99 (8.23)**

Note: Figures in the parentheses indicate percentages of UPI to Payment System Turnover.
FY– Financial Year. All data is as of the end of March.
Source: RBI Annual Report 2020–21, 2021–22, 2022–23, and 2023–24

segment's (credit transfer) total payment value. In 2022–23, UPI transactions reached ₹139,150 billion, representing 25.29% of the total. By 2023–24, UPI handled transactions valued at ₹199,950.86 billion (31 March 2024), commanding an even more significant share of 29.60% of the total retail payment value. The data from 2018–19 to 2023–24 illustrate an extraordinary transformation in India's payment system, driven mainly by UPI's meteoric rise. UPI has not only increased its transaction volume and value but has also become the leading platform for retail payments in the country. The steady growth in both the volume and value of total retail and digital payments reflects the increasing reliance on UPI (in particular) and digital platforms (in general) for everyday financial transactions.

Overall, the above data suggest that India's payment ecosystem is becoming more digital, efficient, and inclusive, with UPI leading the way and shaping the future of financial transactions. It also paints a clear picture of a robust and expanding digital economy, where UPI continues to dominate, and digital payments play an increasingly central role in India's financial infrastructure.

11.4. LESSONS FROM THE UPI EXPERIENCE: TRANSFORMING DIGITISATION & FINANCIAL INCLUSION IN INDIA

The success of UPI has revolutionised the digital payments and financial inclusion landscape in India. With its seamless, user-centric design and widespread adoption, UPI offers valuable lessons that can be applied to other digital platforms and technologies globally. Its rapid growth and integration into everyday life were made possible through careful design, collaboration, and innovation. Below are the key takeaways from UPI's journey, categorised into different themes to highlight its comprehensive approach.

11.4.1. User-Centric Design and Experience

Lesson #1: A User-Centric Design is Crucial—UPI's user-centric approach is at the core of its success. By prioritising simplicity, UPI lowered entry barriers for new users. The introduction of the VPA simplified transactions by eliminating the need for complex bank details. This intuitive design empowered users, especially those unfamiliar with digital banking, to engage with digital payments. Clear, jargon-free interfaces further enhanced the user experience, making UPI accessible to a broad demographic.

Lesson #2: Persistent User Education and Awareness Are Important—UPI's success was also driven by continuous education campaigns. Large-scale advertising and outreach in multiple languages ensured that users were well-informed and confident in using the platform. As familiarity grew, adoption rates accelerated, underscoring the importance of ongoing education for new technologies.

Lesson #3: Seamless Integration with Everyday Life Is Necessary—UPI's integration into everyday transactions, such as paying bills or transferring money, made it indispensable. The platform's ease of use allowed it to seamlessly become part of users' daily routines, thereby accelerating its adoption. When technology fits into daily life effortlessly, its uptake naturally increases.

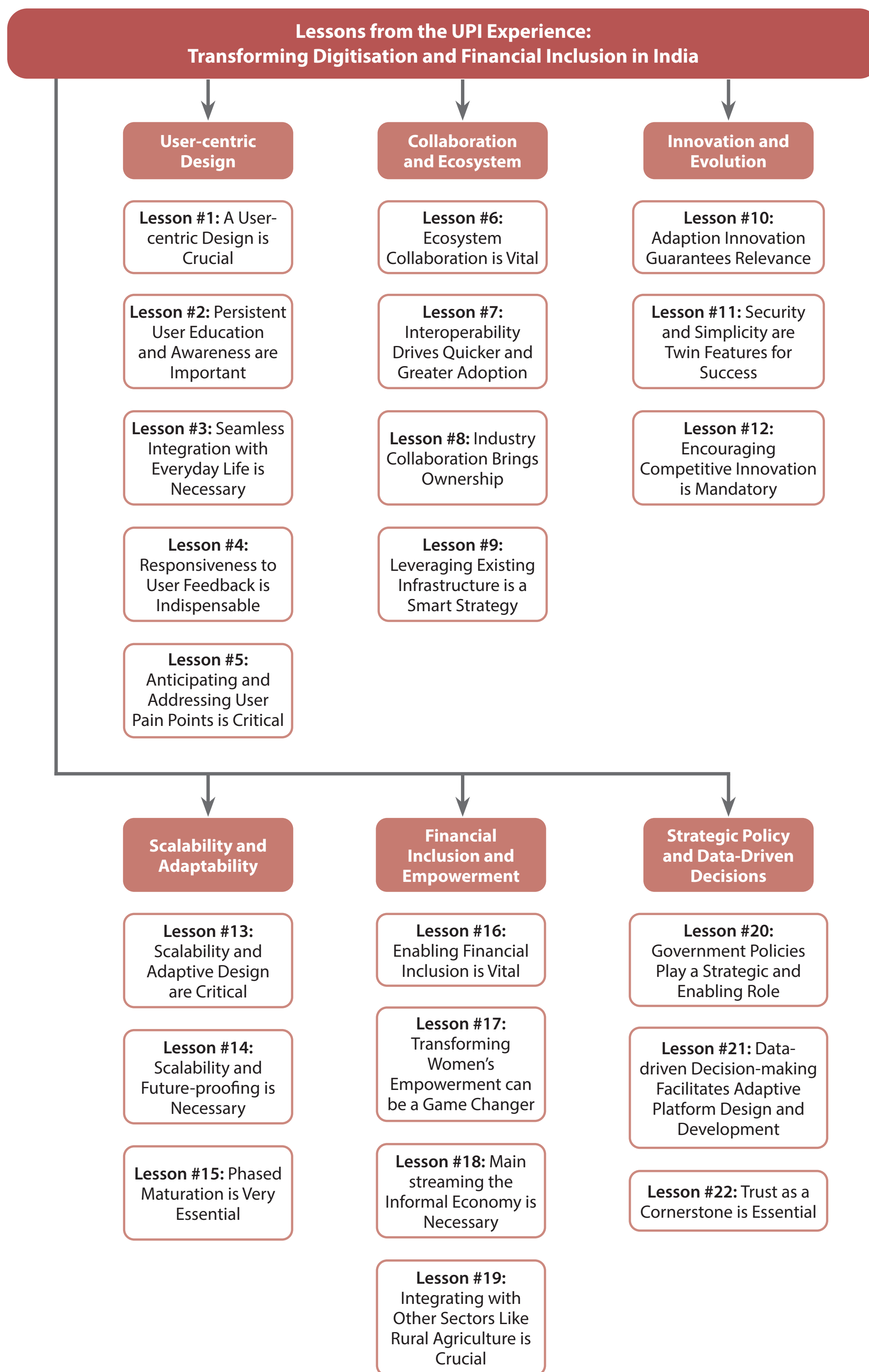

Figure 11.6. Lessons from the UPI Experience: Transforming Digitisation & Financial Inclusion in India

Lesson #4: Responsiveness to User Feedback Is Indispensable—UPI evolved based on user feedback, leading to features like higher transaction limits and recurring payments. This responsiveness kept the platform aligned with user needs, driving engagement and satisfaction. Listening to users is key to the long-term success of any technology.

Lesson #5: Anticipating and Addressing User Pain Points Is Critical—UPI proactively addressed common pain points such as complex bank transfers and the inconvenience of cash. By solving these issues quickly and effectively, UPI resonated with users, thereby fostering its rapid adoption. Understanding and resolving user feedback and frustrations is crucial to successful product design.

11.4.2. Collaboration and Ecosystem Integration

Lesson #6: Ecosystem Collaboration Is Vital—UPI's widespread adoption was driven by collaboration among government bodies, regulators, banks, FinTechs, merchants and other stakeholders. This cooperation allowed for a seamless consumer experience and ensured robust infrastructure, security, and user education. Collective effort is central to the success of any large-scale payment system like the UPI.

Lesson #7: Interoperability Drives Quicker and Greater Adoption—UPI's interoperability across banks and payment platforms played a phenomenal role in guaranteeing its success. Unlike many payment systems that lock users into specific providers, UPI allowed transactions across multiple banks, fostering a more inclusive and interoperable ecosystem. Open systems drive greater and quicker adoption because of their seamless interoperability.

Lesson #8: Industry Collaboration Brings Ownership—Collaboration between banks, FinTech companies, technology providers, and other stakeholders was essential to UPI's success. Banks integrated UPI into their apps, while FinTechs innovated to enhance user experiences—both these actions showcased enhanced ownership of the UPI platform by industry stakeholders. This multi-stakeholder cooperation fostered a robust ecosystem, underlining the need for collaboration in scaling new technologies.

Lesson #9: Leveraging Existing Infrastructure Is a Smart Strategy—UPI ingeniously built on India's existing banking and mobile infrastructure. By using the Immediate Payment Service (IMPS) backbone, UPI was able to offer real-time, 24/7 transactions without the need for building entirely new systems. This demonstrates how leveraging existing resources can accelerate the rollout of new technologies.

11.4.3. Innovation and Evolution

Lesson #10: Adaption Innovation Guarantees Relevance—UPI's continuous evolution, from its launch to UPI 2.0, underscores the importance of relentless innovation. The introduction of new features, improved security, and a refined user experience ensured that UPI remained competitive in the ever-changing digital payments landscape. Innovation is vital for staying relevant and adapting to growing user demands.

Lesson #11: Security and Simplicity Are Twin Features for Success—UPI's simplicity did not come at the expense of security. Its two-factor authentication system, which included mobile number verification and a UPI PIN, ensured secure transactions without creating cumbersome procedures. Balancing security and ease of use was key to building trust among users. Thus, while the UPI payment system is robust in terms of meeting cyber security threats such as Ransomware, Malware, DDOS, and zero-day attacks, none of this resulted in the UPI platform becoming complicated.

Lesson #12: Encouraging Competitive Innovation Is Mandatory—UPI's open architecture and standardised protocols enabled banks and third-party apps to build on the platform, encouraging competitive innovation. This led to diverse offerings and pushed service providers to innovate continuously and enhance user experiences across the ecosystem.

11.4.4. Scalability and Adaptability

Lesson #13: Scalability and Adaptive Design Are Critical—UPI was designed with scalability in mind, enabling it to handle millions of transactions during peak periods without compromising user experience. Its flexible architecture allowed for easy integration of new features and enhancements, ensuring UPI's continued relevance as user needs and technology evolved.

Lesson #14: Necessity of Scalability and Future-proofing—UPI could scale effortlessly as transaction volumes grew by building a future-ready platform. Its forward-looking architecture was designed to support ongoing innovation, ensuring it remained competitive as the digital payments landscape evolved. Future-proofing technology ensures long-term viability and growth.

Lesson #15: Phased Maturation Is Very Essential—UPI's growth was gradual but steady, showing that innovation and adoption take time. Once user familiarity and trust were established, adoption surged exponentially. This phased approach illustrates the importance of patience, continuous improvement, and user engagement for long-term success.

11.4.5. Financial Inclusion and Empowerment

Lesson #16: Enabling Financial Inclusion Is Vital— UPI played a critical role in helping achieve a larger goal—that is, promoting financial inclusion by providing digital financial access to low-income and rural populations. Leveraging initiatives like Pradhan Mantri Jan Dhan Yojana (PMJDY) and its own compatibility with basic smartphones, UPI reached underserved communities and integrated them into the formal banking system.

Lesson #17: Transforming Women's Empowerment Can be a Game Changer—UPI has significantly contributed to women's financial empowerment by providing them autonomy in managing their finances. Women, who once relied on male family members for cash transactions, can now independently receive payments and manage their money, fostering greater economic inclusion. See Box 11.3, which describes 'The UPI for Her Initiative'.

Lesson #18: Mainstreaming the Informal Economy Is Necessary—UPI has integrated the informal economy into the digital payments ecosystem, enabling small merchants, gig workers, and domestic staff to send and receive digital payments. This shift has reduced cash dependence and helped informal workers access formal credit systems, improving their financial prospects.

Lesson #19: Integrating with Other Sectors Like Rural Agriculture Is Crucial—UPI's integration with direct benefit transfer (DBT) systems has enabled rural farmers to receive subsidies and payments directly into their bank accounts, reducing reliance on cash. This financial empowerment has helped bring rural agriculture into the digital (payment) ecosystem fold, promoting broader financial inclusion.

11.4.6. Strategic Policy and Data-driven Decisions

Lesson #20: Government Policies Play a Strategic and Enabling Role—Government policies like PMJDY and post-demonetisation efforts played a critical role in UPI's widespread adoption. These initiatives laid the groundwork for digital financial inclusion, proving that regulatory support is vital to the success of emerging technologies.

BOX 11.3. THE UPI FOR HER INITIATIVE

The UPI for Her initiative, launched by NPCI and Women's World Banking, aims to enable 200 million women to adopt digital payments. This initiative focuses on two primary user personas: *Cautious Balancers,* who are hesitant because of security concerns, and *Fence Sitters*, who are familiar with digital payments but need more motivation to engage. Strategies such as UPI-Prepaid Payment Instruments (PPIs) and UPI Merchant Offerings can nudge these women towards greater digital engagement.

To scale UPI adoption, the initiative emphasises 'phygital' onboarding, combining physical and digital methods to guide women through the transition. Building trust and confidence is crucial, particularly through safety assurances and community engagement marketing. Partnerships with local community networks, influencers, and gender-sensitive outreach strategies play a critical role in addressing barriers like security concerns and lack of awareness. These efforts are especially effective in overcoming restrictive gender norms and encouraging the inclusion of women micro-entrepreneurs in the digital payments ecosystem.

Continuous engagement and inclusive design are pivotal to sustaining women's participation in digital payments. Providers are encouraged to invest in user-friendly interfaces, offer ongoing support, and collect gender-disaggregated data to better understand women's needs. With early users making up to 10 transactions a month, targeted outreach and education can transform women's financial behaviours, unlocking significant economic growth opportunities. The UPI for Her initiative provides a roadmap for financial inclusion, empowering women and fostering their increased participation in India's digital economy.

Source: Paraphrased from *'UPI for Her Enab1ing Digita1 Payments for Women in India August 2024', by NPCI, UPI, Women's World Banking and Global FinTech Fest, (August 2024).*

Lesson #21: Data-driven Decision-making Facilitates Adaptive Platform Design and Development—UPI's development was heavily guided by data insights. Continuous monitoring of user behaviour allowed for informed decision-making, leading to features like UPI 2.0. Data-driven strategies ensure that platforms and payment systems evolve in line with user demands and market trends.

Lesson #22: Trust as a Cornerstone Is Essential—Building user trust was central to UPI's widespread adoption. Transparent processes, immediate transaction notifications, and robust security measures instilled confidence among users. Backing from the RBI further reinforced this trust, highlighting the importance of credibility in financial technologies.

UPI's eight-year journey exemplifies the power of user-centric design, collaboration, continuous innovation, and scalability. It has transformed India's digital payments landscape by focusing on financial inclusion, leveraging existing infrastructure, and maintaining a steadfast commitment to security and user experience. The lessons learned from UPI's success offer valuable insights for other platforms striving for similar impact. The combination of thoughtful design, strategic policy support, and data-driven innovation serves as a blueprint for the future of digital finance globally.

11.5. CHALLENGES CONFRONTED BY UPI

That said, despite its advantages, UPI faces some challenges, too. These have been summarised in Table 11.3., along with solutions being tried by NPCI. Other strategies to overcome these challenges are also suggested in the table:

Furthermore, to address these and other challenges, future research into UPI trends could

Table 11.3. Challenges and Solutions

Challenge	Description	Current State	Suggested Solutions	Remarks
Battling Digital Ignorance	Digital and process literacy are critical issues, particularly in rural areas. Despite the growing use of UPI, a significant portion of the rural population is still not fully equipped to understand or use digital payment processes. This digital literacy gap hinders UPI's seamless adoption across the country.	Efforts are underway to address these literacy challenges as UPI evolves into a more inclusive platform, offering features such as voice-led systems that help bridge the gap. However, progress has been gradual, and a considerable digital divide remains.	Implement generative AI-driven, voice-led systems with built-in safeguards to make the payment process more accessible to digitally illiterate users. These systems should be complemented by ongoing, on-the-go digital literacy programmes to ensure users become comfortable with UPI over time.	Generative AI-powered voice systems, particularly in vernacular languages, can cater to rural users who may struggle with digital interfaces. These systems can guide users through the payment process, ensuring security and efficiency. Additionally, mobile literacy programmes that educate users while they interact with the system can build confidence and trust in UPI.
Network Infrastructure	Internet connectivity is still poor in many rural areas. While urban areas enjoy better internet infrastructure, rural regions face significant challenges due to weak or non-existent connectivity, limiting the effectiveness of UPI. LEO (Low Earth Orbit) satellites are being advocated as a means to extend reliable internet access to these underserved areas.	The integration of LEO satellites to provide internet access in remote areas is still nascent. While satellite internet holds promise, the current state of infrastructure leaves many rural areas without adequate connectivity.	The use of LEO satellites for internet access in remote areas is seen as a potential game-changer. These satellites can provide uninterrupted connectivity to rural regions, ensuring that more people have access to digital payment systems like UPI.	The adoption of LEO satellites would not only extend internet access to underserved areas but also ensure a more resilient payment system. By integrating this technology, remote areas can overcome the connectivity barrier, significantly boosting UPI adoption. Public and private sector collaboration is essential to accelerate this rollout.

Challenge	Description	Current State	Suggested Solutions	Remarks
Navigating the Digital Minefield	Phishing and scam attempts are on the rise. As the use of digital payments increases, so too does the risk of fraudulent activities. Many users, especially those new to digital payments, are susceptible to phishing, scams, and fraudulent attacks, highlighting the need for robust security mechanisms and enhanced user awareness.	There is an ongoing focus on improving literacy and scam prevention mechanisms. Digital literacy programmes, combined with existing two-factor authentication, are vital in protecting vulnerable users. However, scams still pose a significant threat, requiring more aggressive measures.	Enhancing two-factor authentication and expanding digital literacy efforts, particularly for vulnerable populations such as the elderly or first-time users, will be critical. More comprehensive awareness campaigns about phishing and scam risks are also necessary.	Security enhancements must include regular updates to authentication protocols and user awareness programmes. Interactive voice-led conversational and generative AI-driven digital literacy tools can be developed to educate users on how to recognise and avoid scams. Government and industry collaboration can improve fraud detection systems.
Systemic Vulnerabilities	System malfunctions occur sometimes due to a high user base. The overwhelming number of UPI transactions puts significant pressure on the system's infrastructure, leading to potential downtimes and slowdowns. This creates a risk of system overload, making it crucial to invest in scaling the infrastructure to handle increasing loads while maintaining reliability.	Ongoing investments and strategies are being implemented to scale the infrastructure to support the growing user base. Technologies such as predictive maintenance and decentralised systems are being explored, but systemic vulnerabilities persist as the UPI network grows.	Scaling infrastructure, encouraging the use of alternative systems during downtimes, implementing predictive maintenance protocols, and exploring the potential of (large-scale adoption of) blockchain for decentralisation are critical solutions to address systemic vulnerabilities.	In addition to scaling existing infrastructure, UPI can benefit from diversifying its technological base. Encouraging the use of alternate payment systems during downtimes and researching blockchain-based solutions for secure, decentralised payment infrastructures can enhance system robustness.

benefit from several critical analyses that provide deeper insights. A demographic analysis could examine UPI adoption and usage across various age groups, income levels, and geographical locations, identifying the segments driving growth. Comparisons between adoption curves in urban versus rural areas, younger versus older users, and neo-bank customers versus legacy bank users would offer valuable insights. A use case analysis could further explore the distribution of different types of UPI transactions, such as merchant payments, peer-to-peer transfers, bill payments, and mobile recharges, highlighting which use cases are being adopted more rapidly, and whether they are high-frequency transactions like recharges or larger-ticket use cases like investments and insurance purchases. Cross-country benchmarking could also provide valuable comparisons of UPI's growth trajectory with other real-time payment systems globally, such as the United Kingdom's (UK's) Faster Payments and the European Union's Single Euro Payments Area (EU's SEPA) Instant, revealing gaps and opportunities for further development.

Additionally, a platform concentration analysis could assess the split between bank-owned apps and third-party platforms like Google Pay, PhonePe, and Paytm, offering insights into potential concentration risks and the diversification of payment processors handling UPI transactions. Together, these analyses would shed light on customer behaviours, product gaps, and strategic opportunities, shaping UPI's next phase of innovation in India. Moreover, the potential of conversational and generative AI-led voice payments, a separate but crucial element, also warrants further exploration.

11.6. CONCLUSION

India's UPI has revolutionised financial inclusion, but key policy areas remain to ensure equitable and sustainable access. Three main policy directions are proposed for the RBI, NPCI, and UPI: enhancing

digital literacy and user comfort through full-fledged conversational and generative AI-led payments, expanding access to high-volume use cases like credit and pensions, and bolstering long-term resilience through privacy protections and climate financing principles. These initiatives aim to address the barriers that still limit full participation, particularly for underserved groups like women, the elderly, and differently abled users, by improving interface localisation, offline access, and inclusivity.

UPI's evolution presents a global blueprint for scalable digital financial services, emphasising core principles like interoperability, decentralisation, and real-time transactions. By driving financial inclusion, the platform has demonstrated how techno logy can empower underserved populations, foster economic growth, and improve societal well-being. UPI's potential for global adoption, particularly in developing nations, is vast, offering secure, low-cost digital financial services that can transform economies and uplift marginalised communities. Exporting UPI globally could accelerate progress on Sustainable Development Goals (SDGs), promoting financial inclusion, economic resilience, and gender equality. By establishing UPI International, supported by global institutions and the private sector, the platform's success can be replicated across emerging markets, creating inclusive financial ecosystems. As the originator of UPI, India is uniquely positioned to lead this initiative, driving global financial inclusion and bridging economic gaps worldwide.

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xix RBI, 'Annual Report 2020-21, 2021-22, 2022-23, and 2023-24', https://www.rbi.org.in/Scripts/AnnualReportMainDisplay.aspx

xx There is a very minor (non-material) difference between RBI and NPCI data for annual UPI Value and volume data. This table has data from the RBI Annual Report, various years, with regard to payment system data.

xxi RBI, 'Annual Report 2020-21, 2021-22, 2022-23, and 2023-24', https://www.rbi.org.in/Scripts/AnnualReportMainDisplay.aspx

A Decade (2014–2024) of Digital Financial Inclusion: Key Pillars of and Lessons from the Indian Experience

Ramesh Srivatsava Arunachalam

12

12.1. INTRODUCTION

India's decade-long journey towards financial inclusion from 2014 to 2024 represents a historic transformation of how a developing country can overcome deep-rooted financial exclusion. It is a story of ambition, vision, and commitment that spanned across government, financial institutions, technology providers, civil society, and many other stakeholders. This journey, characterised by the introduction of digital public infrastructure and strategic financial programmes, sought to address a multitude of challenges facing the unbanked and underbanked population. Financial exclusion was not merely an issue of access to bank accounts but a complex interplay of identity, access to financial services, transaction costs, and regional disparities. India's response was both holistic and innovative, focusing on addressing these key challenges by integrating technology, policy, and financial sector reforms.

At the heart of this transformation were pivotal initiatives such as Aadhaar, the Pradhan Mantri Jan Dhan Yojana (PMJDY), the Unified Payments Interface (UPI), the Aadhaar Enabled Payment System (AePS), National Electronic Fund Transfer (NEFT), Immediate Payment System (IMPS), Real-time Gross Settlements (RTGS), Direct Benefit Transfer (DBT) schemes (315 of them) and so on. These programmes laid the groundwork for a more inclusive financial ecosystem, allowing millions of previously underserved citizens to access financial services for the first time. Table 12.1. offers a broad-level comparison of UPI, AePS, and NEFT/IMPS, the key payment mechanisms for not-so-high value payment transfers.

But India's journey did not stop there. The development of more advanced frameworks, such as the Open Credit Enablement Network (OCEN) and the Open Network for Digital Commerce (ONDC), aimed to address the remaining gaps—particularly in access to credit and digital commerce for marginalised businesses and communities.

Table 12.1. Comparison of AePS, UPI, and NEFT/IMPS

Feature	AePS	UPI	NEFT/IMPS
Target Audience	Extreme urban poor, peri-urban poor, remote rural	Urban, peri-urban, some rural	Bank account holders, internet-connected users
Authentication	Aadhaar-based biometric (fingerprint, iris, face)	Mobile phone, PIN, biometric	Bank account, internet-based, sometimes mobile
Infrastructure Required	Micro-ATMs, business correspondents	Smartphones, internet connectivity	Bank accounts, internet banking
Primary Transaction Type	Cash withdrawals, balance inquiry, deposits	Peer-to-peer digital transfers	Bank transfers
Inclusivity	High (focus on underserved and rural)	High, but limited to smartphone users	Moderate (requires internet and banking)

India's approach has thus been underpinned by a strong vision of inclusion, evident in its focus on leveraging technology to tackle the fundamental barriers of financial inclusion—identification, service access, and cost efficiency. By providing a unified digital identity system through Aadhaar, expanding financial access with Jan Dhan accounts, and enabling seamless digital transactions through UPI and AePS, India has made significant strides in (digital) financial inclusion. However, the path has not been without challenges, and despite the remarkable progress, crucial lessons emerge regarding the complexities of financial inclusion, particularly in a country as diverse as India. As this chapter unfolds, each of these initiatives are explored in depth and described together with corresponding lessons learned, challenges faced, and future prospects for financial inclusion in India.

12.2. DIGITAL PAYMENTS AS A DRIVER OF INDIA'S SHIFT TOWARDS A CASHLESS ECONOMY

India's payment system has witnessed a rapid and transformative shift towards digital payments in recent years, with digital transactions increasingly capturing a larger share of the total payment ecosystem, both in terms of volume and value. This shift is driven by platforms such as UPI, NEFT, IMPS, and National Automated Clearing House (NACH), which have collectively revolutionised the way financial transactions are conducted. Tables 12.2. and 12.3. and Figures 12.1. and 12.2. offer insights into this development.

12.2.1. Digital Payments (Volume) as a Proportion of Total Payments

In FY 2018–19, digital payments accounted for 95.39% of the total payment volume. By FY 2023–24, this figure had risen to nearly 99.60%, underscoring the deep penetration of digital platforms within the Indian economy. This substantial increase in digital transaction volume reflects the widespread adoption of platforms such as UPI, which rose from handling 45.51% of retail payment (credit transfers) volume in FY 2018–19 to 88.24% in FY 2023–24. While NEFT and IMPS remain essential for high-value transfers, their proportion of total volume has declined in favour of UPI. NEFT's share decreased from 19.57% to 4.89%, while IMPS dropped from 14.79% to 4.04% over the same period. The dominance of UPI, driven by its ease of use and mobile integration, is evident in the exponential growth of digital payment volume.

Table 12.2. **Annual Turnover in the RBI Payment System, Retail Segment–Volume (in million) and Percentage Share**[i]

Item	FY 2018–19	FY 2019–20	FY 2020–21	FY 2021–22	FY 2022–23	FY 2023–24
AePS (Fund Transfers)	1.10 (0.01)	1.00 (0.00)	1.10 (0.00)	1.00 (0.00)	0.60 (0.00)	0.39 (0.00)
Aadhaar Payment Bridge System (APBS)	1,494.90 (12.62)	1,674.70 (8.12)	1,437.30 (4.52)	1,257.30 (2.18)	1,789.80 (1.82)	2,588.82 (1.74)
Electronic Clearing Service (ECS) Cr	5.4 (0.05)	1.80 (0.01)	0.00 (0.00)	0.00 (0.00)	0.00 (0.00)	0.00 (0.00)
IMPS	1,752.90 (14.79)	2,579.20 (12.50)	3,278.30 (10.31)	4,662.50 (8.07)	5,653.30 (5.75)	6,005.34 (4.04)
NACH Cr	883.40 (7.46)	1,110.00 (5.38)	1,646.50 (5.18)	1,875.80 (3.25)	1,926.70 (1.96)	1,622.73 (1.09)
NEFT	2,318.90 (19.57)	2,744.50 (13.30)	3,092.80 (9.73)	4,040.70 (6.99)	5,284.70 (5.37)	7,263.95 (4.89)
UPI	5,391.50 (45.51)	12,518.60 (60.68)	22,330.70 (70.25)	45,956.10 (79.52)	83,714.40 (85.10)	131,129.47 (88.24)
Credit Transfers	**11,848.10 (100.00)**	**20,629.70 (100.00)**	**31,786.80 (100.00)**	**57,793.50 (100.00)**	**98,369.50 (100.00)**	**148,610.69 (100.00)**
Total–Retail Payments	24,247.30	34,893.30	44,218.00	72,468.90	114,413.80	164,823.37
Total Payments	24,383.90	35,044.00	44,377.20	72,676.70	114,656.30	165,093.39
Total Digital Payments	**23,260.20**	**34,002.60**	**43,706.80**	**71,976.80**	**113,947.60**	**164,430.18**

Note: Figures in the parentheses indicate percentages of each component to total credit transfers (retail segment), FY–Financial Year, Source: RBI Annual Report 2020–21, 2021–22, 2022–23, and 2023–24

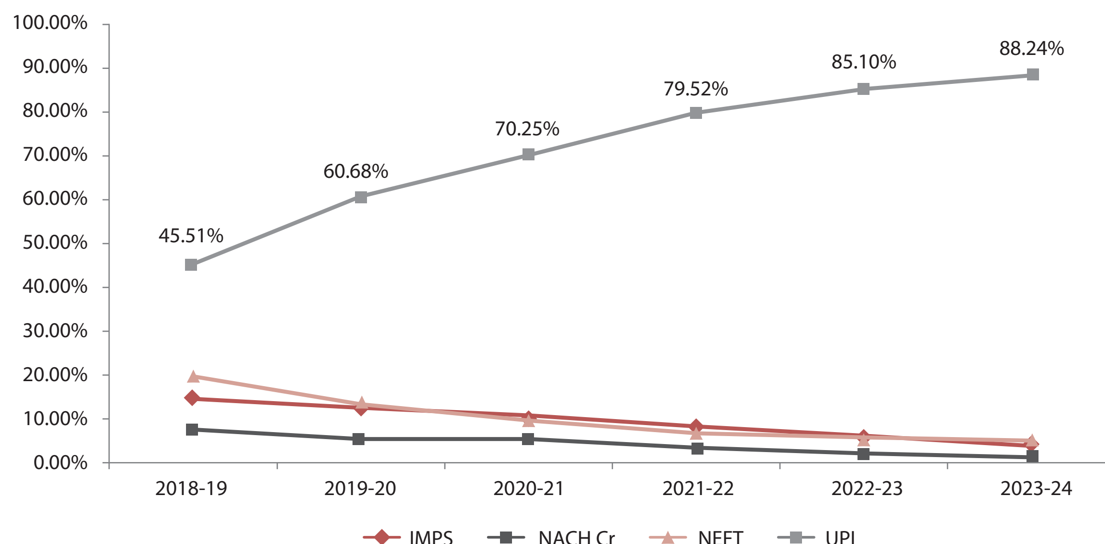


Figure 12.1. Annual Turnover in the RBI Payment System, Retail Segment, Credit Transfers Volume Percentage Share

12.2.2. Digital Payments (Value) as a Proportion of Total Payments

In terms of value, digital payments as a proportion of total payments have also shown considerable growth. In FY 2018–19, digital payments made up 95.20% of the total payment value, rising to 97.12% by FY 2023–24. UPI, initially accounting for only 3.36% of total transaction value in FY 2018–19, grew to handle 29.60% of the total value by FY 2023–24, indicating its increasing use for both small

Table 12.3. Annual Turnover in the RBI Payment System, Retail Segment–Value (in ₹ billion) and Percentage Share[ii]

Item	FY 2018–19	FY 2019–20	FY 2020–21	FY 2021–22	FY 2022–23	FY 2023–24
AePS (Fund Transfers)	5.01 (0.00)	5.00 (0.00)	10.00 (0.00)	10.00 (0.00)	0 (0.00)	2.61 (0.00)
APBS	862.26 (0.33)	990.00 (0.35)	1,110.00 (0.33)	1,330.00 (0.31)	2,480.00 (0.45)	3,907.43 (0.58)
ECS Cr	132.35 (0.05)	50.00 (0.02)	0.00 (0.00)	0.00 (0.00)	0.00 (0.00)	0.00 (0.00)
IMPS	15,902.57 (6.10)	23,380.00 (8.19)	29,410.00 (8.78)	41,710.00 (9.76)	55,850.00 (10.15)	64,956.52 (9.62)
NACH Cr	7,296.73 (2.80)	10,370.00 (3.63)	12,170.00 (3.63)	12,820.00 (3.00)	15,440.00 (2.81)	15,251.04 (2.26)
NEFT	227,936.08 (87.36)	229,460.00 (80.35)	251,310.00 (75.01)	287,250.00 (67.23)	337,200.00 (61.30)	391,360.14 (57.94)
UPI	8,769.71 (3.36)	21,320.00 (7.47)	41,040.00 (12.25)	84,160.00 (19.70)	139,150.00 (25.29)	199,950.86 (29.60)
Credit Transfers	**260,904.71 (100.00)**	**285,570.00 (100.00)**	**335,040.00 (100.00)**	**427,280.00 (100.00)**	**550,120.00 (100.00)**	**675,428.59 (100.00)**
Total–Retail Payments	362,713.03	386,380.00	414,860.00	523,940.00	659,040.00	791,494.61
Total Payments	1,719,594.90	1,697,940.00	1,470,860.00	1,810,520.00	2,158,500.00	2,500,361.31
Total Digital Payments	**1,637,134.25**	**1,619,690.00**	**1,414,580.00**	**1,744,010.00**	**2,086,870.00**	**2,428,237.99**

Note: Figures in the parentheses indicate percentages of each component to total credit transfers (retail segment).
FY–Financial Year, Source: RBI Annual Report 2020–21, 2021–22, 2022–23, and 2023–24

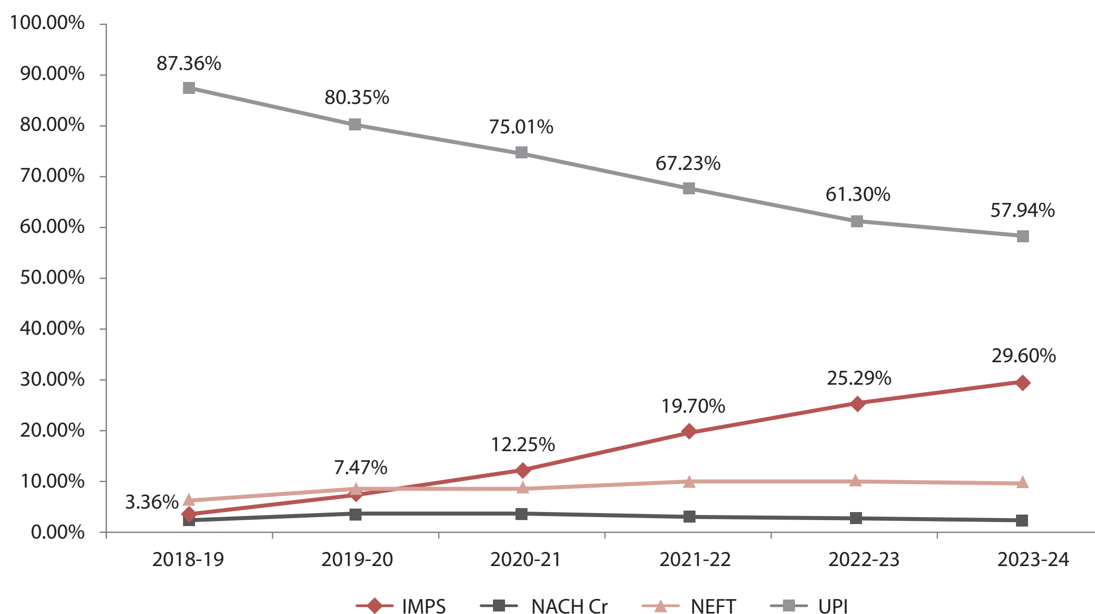


Figure 12.2. Annual Turnover in the RBI Payment System, Retail Segment, Credit Transfers, Value Percentage Share

and high-value transactions. NEFT, while still the dominant player in transaction value, saw its share decrease from 87.36% to 57.94% during this period. Despite this decline, NEFT remains vital for large-scale transfers, especially in the corporate and government sectors. IMPS, which is known for its real-time transfers, saw modest growth in its share of transaction value, maintaining a significant role in instant, higher-value retail transactions.

12.2.3. Drivers of Digital Payments Growth

The rise in digital payments can be attributed to several key drivers:

1. **UPI's Ubiquity and Convenience:** UPI has become the preferred digital payment platform, offering easy, real-time transactions with minimal friction. Its integration with mobile applications and widespread acceptance across merchants and consumers has significantly boosted its growth in both volume and value.
2. **NEFT and IMPS in High-Value Transfers:** While UPI dominates the lower-value, high-frequency transactions, NEFT and IMPS remain crucial for high-value payments. NEFT is particularly favoured for larger corporate and government payments, even as its share has declined due to UPI's rise.
3. **Financial Inclusion Initiatives:** Government initiatives, such as linking Aadhaar with bank accounts and promoting financial inclusion through PMJDY have enabled millions to participate in the digital economy. UPI's seamless integration with these initiatives has further accelerated its growth.
4. **Mobile and Internet Penetration:** The proliferation of smartphones and affordable internet access has made digital payments accessible to a wider population, especially in rural and semi-urban areas, driving a shift away from cash transactions.

The rapid growth in digital payments highlights the transformation of India's financial ecosystem. Digital payments now form a critical part of the country's economy, reflecting growing consumer trust, increased financial inclusion, and the effectiveness of platforms like UPI, NEFT, and IMPS. As the proportion of digital payments continues to rise, India is increasingly becoming a cashless economy, supported by a robust and evolving digital infrastructure based on several key pillars as outlined below.

12.3. PRADHAN MANTRI JAN DHAN YOJANA (PMJDY): THE FIRST PILLAR DRIVING DIGITAL FINANCIAL INCLUSION

Launched in 2014, PMJDY is one of the most ambitious financial inclusion programmes in the world, aiming to provide universal access to banking services. Prior to this initiative, a significant portion of India's population, particularly in rural areas,

was unbanked or underbanked. Many of these individuals relied on informal financial systems for saving, borrowing, and making transactions, which left them vulnerable to financial instability and exploitation. PMJDY sought to change this by ensuring that every household in India had access to a bank account, creating a financial foundation for individuals to save, access credit, and receive government benefits directly.

By 2024, PMJDY had achieved remarkable success, with over 531.5 million bank accounts opened since its launch (see Table 12.4.). These accounts were not just basic savings accounts but were integrated with a suite of financial services, including overdraft facilities, micro-insurance, and access to pensions. For many, this represented their first interaction with the formal financial system. The programme also placed a special focus on women (see Figure 12.3.), rural residents, and low-income households, ensuring that financial services reached the most marginalised segments of society. PMJDY played a critical role in empowering these individuals by providing them with a safe place to save money and access financial tools that could improve their economic well-being (Figures 12.4. and 12.5.).

One of the key features of PMJDY was its integration with India's growing digital payment ecosystem, particularly through the Aadhaar biometric system and the UPI. Accounts opened under PMJDY could be easily linked to Aadhaar and mobile numbers, enabling users to make digital transactions seamlessly. This integration allowed individuals to participate in India's booming digital economy, enabling them to receive payments, pay bills, and transfer money digitally. The convergence of banking, digital identity, and mobile technology created a powerful financial ecosystem that further enhanced PMJDY's benefits, helping account holders access a wide range of services with minimal barriers. PMJDY also played a pivotal role in supporting India's government welfare programmes, particularly through the DBT system. By linking PMJDY accounts to government welfare schemes, the programme ensured that subsidies, pensions, and other benefits were transferred directly to beneficiarie's bank accounts. This not only increased the efficiency of welfare distribution but also reduced the scope for corruption and fraud. The direct transfer of benefits helped improve financial security of millions of households, particularly in rural areas, where access to welfare benefits had historically been plagued by delays and inefficiencies. By creating a more transparent and accountable system, PMJDY helped build trust in both the banking system and government welfare programmes. However, PMJDY has not been without challenges. A majot issue has been account dormancy, as many newly opened accounts saw little to no activity after their initial use. Addressing this will be critical to ensuring the long-term success of PMJDY. Nevertheless, the programme's achievements in bringing millions of people into the formal financial system mark a significant milestone in India's journey towards financial inclusion.

Table 12.4. PMJDY Achievements from March 2015 to August 14, 2024

End March	No. of PMJDY Accounts	No. of PMJDY Accounts (Male)	No. of PMJDY Accounts (Female)	No. of PMJDY accounts (Rural/ Semi-urban)	No. of PMJDY Accounts (Urban/ Metro)	Deposit Amount (in ₹ billion)	Average Deposit in Account (in ₹)	Number of RuPay Debit Card Issued (in million)
March 2015	147.2	71.5	73.9	86.8	58.6	156.70	1,065	131.50
March 2016	214.3	103.7	110.5	131.7	82.6	356.72	1,665	177.50
March 2017	281.7	136.7	144.9	168.7	113.0	629.72	2,235	219.90
March 2018	314.4	148.5	166.0	185.2	129.2	784.94	2,497	236.50
March 2019	352.7	165.3	187.4	209.0	143.7	961.07	2,725	279.10
March 2020	383.3	178.5	204.8	226.3	157.0	1,184.34	3,090	293.00
March 2021	422.0	188.2	233.8	278.5	143.5	1,455.51	3,449	309.00
March 2022	450.5	199.8	250.8	300.7	149.9	1,664.59	3,694	316.20
March 2023	486.5	216.0	270.5	324.5	162.0	1,988.44	4,087	329.40
March 2024	519.5	230.5	289.0	345.8	173.6	2,325.02	4,476	333.50
August 14, 2024	531.3	–	–	–	–	2,312.36	4,352	361.40

Source data from https://pib.gov.in/PressReleaseIframePage.aspx?PRID=2049231, and https://dea.gov.in/sites/default/files/AR%20English%202023-24%20Final%20%28with%20cover%29.pdf

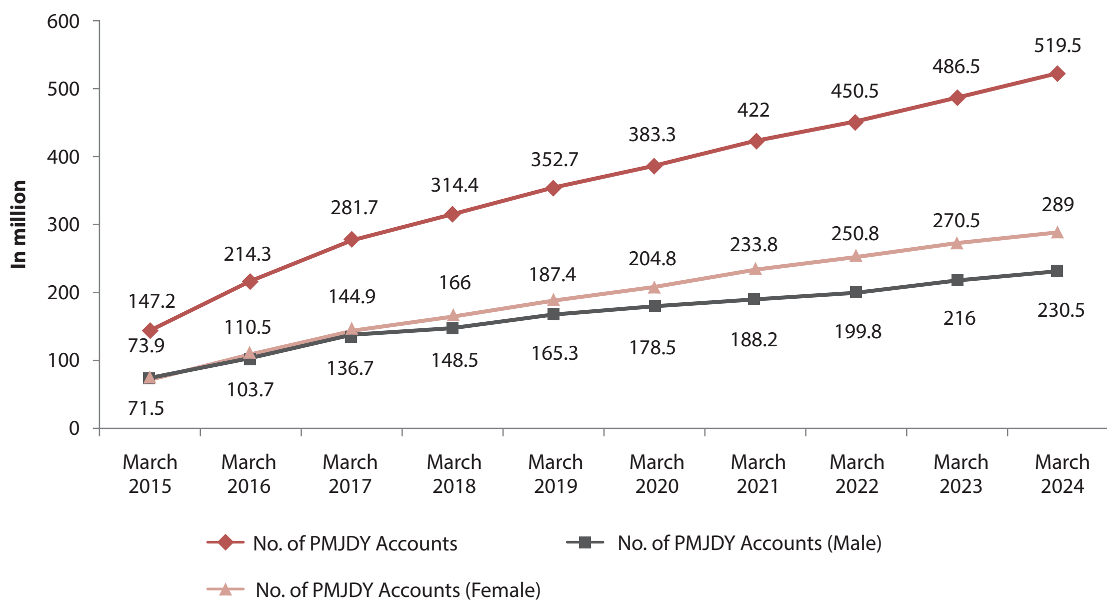


Figure 12.3. Total Number of PMJDY Accounts, by Male/Female, March 2015 – March 2024

Source: PIB, Pradhan Mantri Jan Dhan Yojana (PMJDY) — National Mission for Financial Inclusion — completes a decade of successful implementation

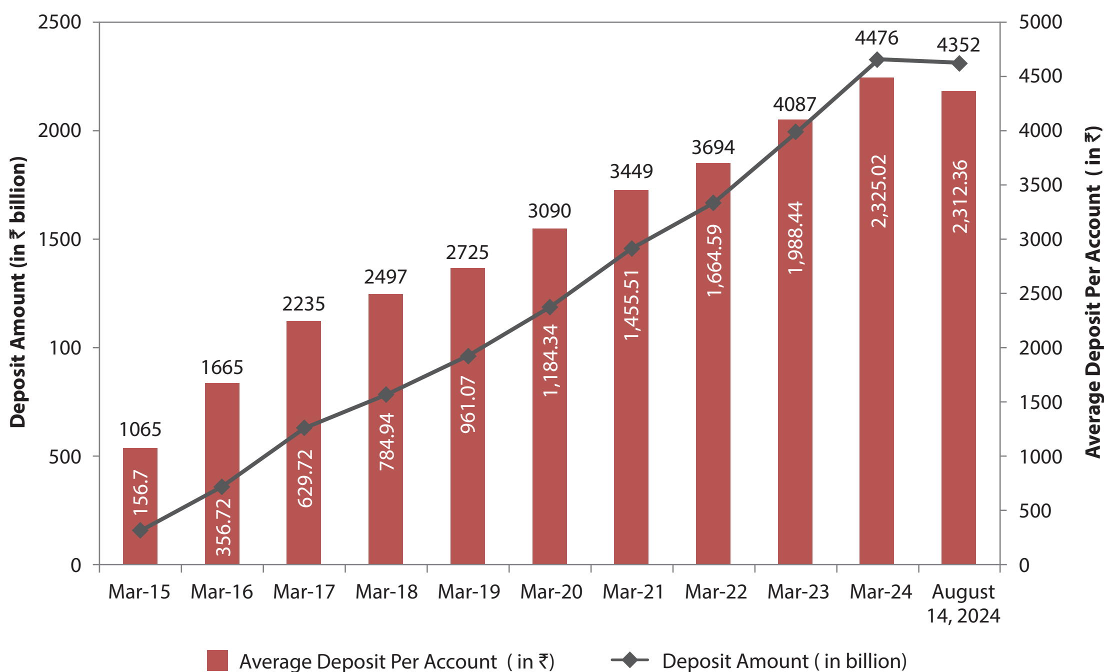


Figure 12.4. Deposit Amount & Average Deposit/Account, PMJDY, March 2015 – August 14, 2024

Source: PIB, Pradhan Mantri Jan Dhan Yojana (PMJDY) — National Mission for Financial Inclusion — completes a decade of successful implementation

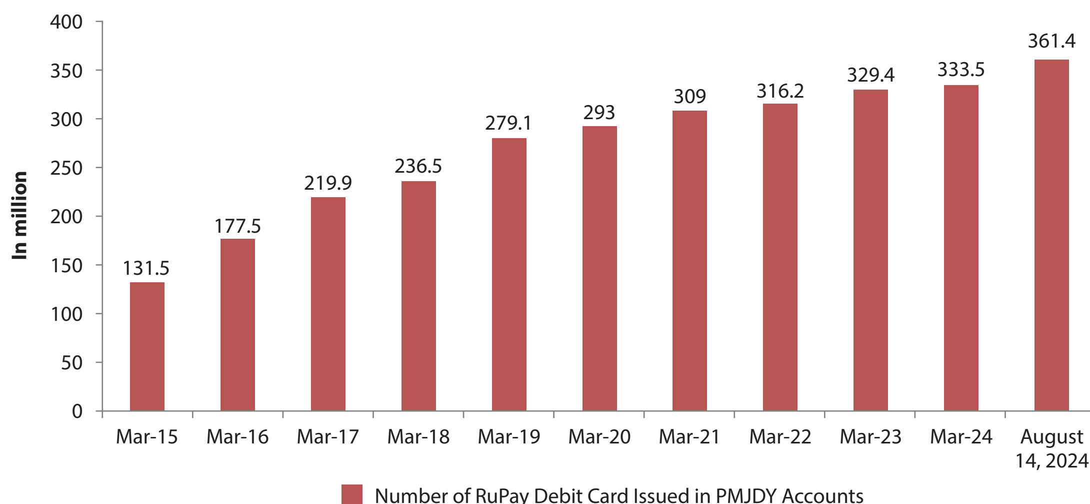


Figure 12.5. RuPay Card Issued, PMJDY Account Holders, March 2015 - August 14, 2024

Source: PIB, Pradhan Mantri Jan Dhan Yojana (PMJDY) — National Mission for Financial Inclusion — completes a decade of successful implementation

12.4. AADHAAR, A SECOND PILLAR DRIVING DIGITAL FINANCIAL INCLUSION

Introduced in 2009, the Aadhaar system has become a cornerstone of financial inclusion in India. By 2024, Aadhaar had achieved near-universal coverage, with over 99% of the adult population enrolled in the system. Aadhaar's 12-digit unique identification number, linked to biometric data such as fingerprints, iris scans, and photographs, provides a verifiable identity to millions of people who previously lacked formal documentation. This was particularly important for marginalised populations in rural areas, where identification had historically been a significant barrier to accessing formal financial services. Aadhaar provided these individuals with a legal identity used to open bank accounts, access welfare benefits, and participate in the formal economy.

One of Aadhaar's key uses in financial inclusion was its integration into the banking system through AePS. This system allowed individuals to perform basic banking transactions such as withdrawals, deposits, and balance inquiries using only their Aadhaar number and biometric authentication. AePS bridged the last-mile connectivity gap for millions of rural citizens by allowing access to banking services through micro-ATMs and banking correspondents. This was particularly valuable in remote areas with limited traditional banking infrastructure, giving individuals access to banking services without the need for a physical debit or credit card. AePS has thus played a crucial role in democratising financial access, especially in regions historically underserved by formal banking systems. Figures 12.6., 12.7., 12.8. and Box 12.1. list Aadhar's significant achievements in driving digital financial inclusion in India.

Aadhaar has also become central to the delivery of government welfare programmes through the DBT system. By linking beneficiaries' Aadhaar numbers to their bank accounts, the government has been able to transfer subsidies, pensions, and other welfare payments directly to individuals, effectively reducing corruption, eliminating middlemen, and ensuring that welfare payments reach the intended recipients fully and promptly. The Aadhaar-DBT model is explored further in a subsequent section.

Beyond financial services, Aadhaar laid the foundation for broader digital inclusion. By providing a verifiable identity, Aadhaar opened access to a range of digital services, including mobile banking, digital payments, and e-commerce platforms. It has also spurred innovation in financial technology (FinTech), such as credit scoring systems based on alternative data, and digital lending platforms offering loans based on Aadhaar-linked transaction histories. As India's digital economy continues to grow, Aadhaar remains a critical component of the country's financial infrastructure, enabling individuals to participate in a digitally interconnected world. In this way, Aadhaar not only transformed financial inclusion but also catalysed India's broader digital revolution.

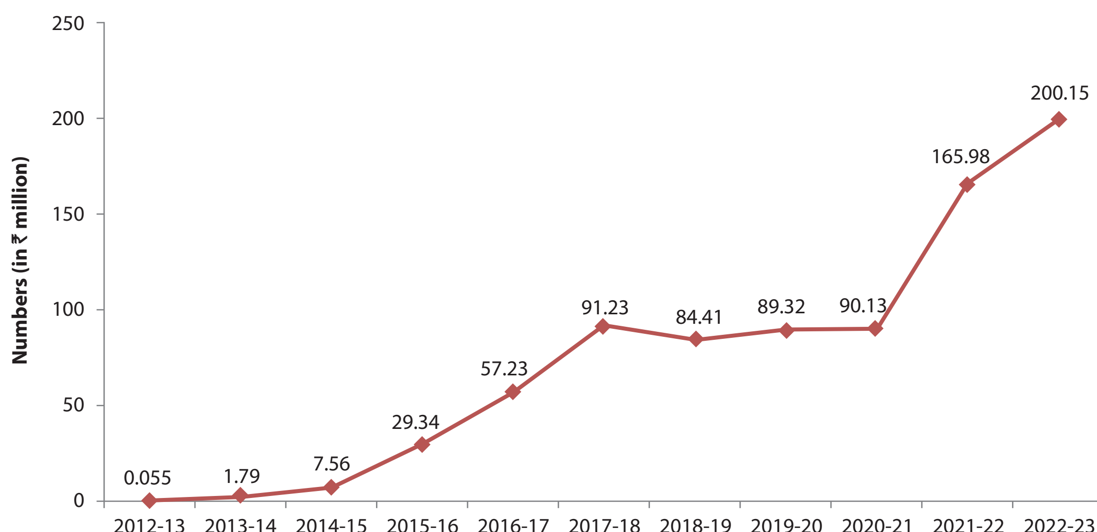


Figure 12.6. Year-wise Aadhaar Updation
Source: UIDAI, Annual Report 2022–23

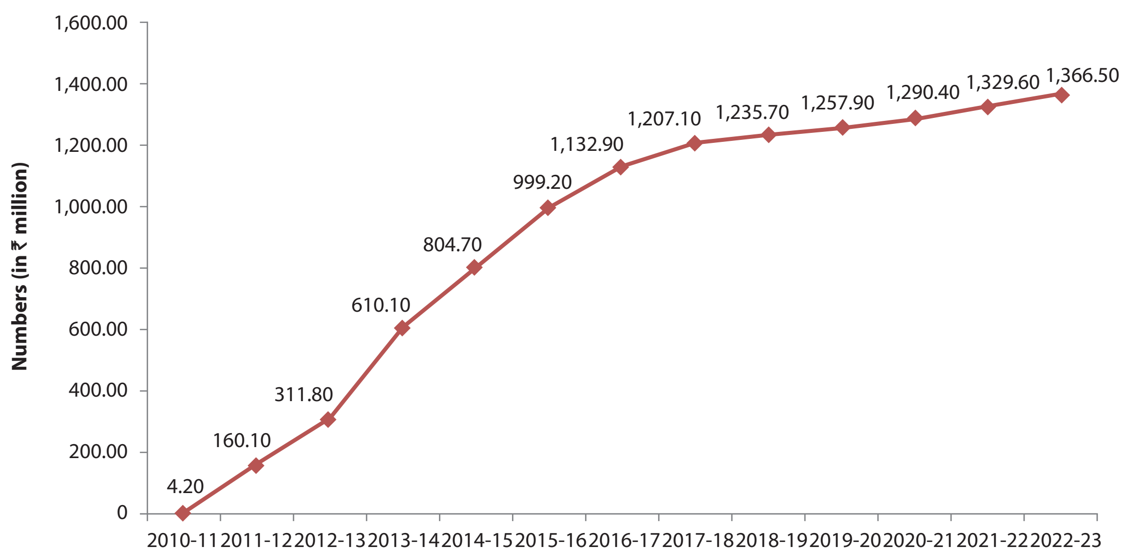


Figure 12.7. Cumulative Aadhaar Generation from September 2010 to March 2023
Source: UIDAI, Annual Report 2022–23

BOX 12.1. AADHAAR UNLOCKED: BRIDGING MILLIONS TO FINANCIAL INCLUSION AND A DIGITAL INDIA

As of October 12, 2024, India's population stood at 1.454 billion, according to Worldometer's analysis of the latest United Nations data,[iii] specifically from the U.N. Department of Economic and Social Affairs – Population Division, as part of the "World Population Prospects: The 2024 Revision." On the same date, the UIDAI[iv] reported that a total of 1.383 billion Aadhaar cards had been generated, covering 95.11% of the total population as on that date). This highlights the vast reach of the Aadhaar system.

The growth in Aadhaar-based authentication and e-KYC (electronic Know Your Customer) transactions in India has been remarkable. In 2012–13, only 2.4 million Aadhar transactions were recorded, but by 2022–23, this number had surged to 22,919.7 million, reflecting the rapid adoption and integration of Aadhaar across various services. Cumulatively, authentication transactions grew from 2.4 million in 2012–13 to an impressive 94,864.8 million by 2022–23. Similarly, e-KYC transactions, which began in 2013–14 with just 0.10 million, witnessed exponential growth, reaching 3,229.7 million in 2022–23. Cumulative e-KYC transactions increased from a mere 0.10 million in 2013–14 to 14,702.2 million by 2022–23. This data illustrates the increasing reliance on Aadhaar for identity verification and e-KYC processes, showcasing its critical role in streamlining services and enhancing the efficiency of digital transactions across sectors in India. The consistent rise year year-over-year demonstrates the importance and widespread usage of Aadhaar authentication and e-KYC in facilitating secure and quick identity verification for millions of Indians.

The data further highlight the expansion of Aadhaar-linked financial services in India, demonstrating its role in facilitating banking and benefit transfers. Since May 2014, when 67 million Aadhaar numbers were linked to bank accounts, this figure grew substantially to 770.3 million by March 2023, reflecting Aadhar's deeper integration into India's financial ecosystem.

AePS transactions at Bank Mitras also saw remarkable rise, growing from 5 million in May 2014 to 16,704.1 million by March 2023. This surge highlights the importance of AePS as a secure, efficient way to conduct financial transactions, particularly in rural areas through Bank Mitras.

The number of benefit transfer transactions to Aadhaar-linked bank accounts increased significantly. In May 2014, 71 million benefit transfers were recorded, a number that skyrocketed to 10,772.4 million by March 2023. This increase underscores the importance of Aadhaar's role in delivering subsidies, welfare benefits, and financial aid directly to beneficiaries' bank accounts, ensuring transparency and efficiency in government programmes.

The total value of transactions via the Aadhaar Payment Bridge System (APBS) also increased dramatically, rising from ₹45.93 billion in May 2014 to ₹8,685.51 billion by March 2023. This growth reflects Aadhaar's pivotal role in enabling large-scale financial transactions, driving financial inclusion, and streamlining the distribution of benefits in India.

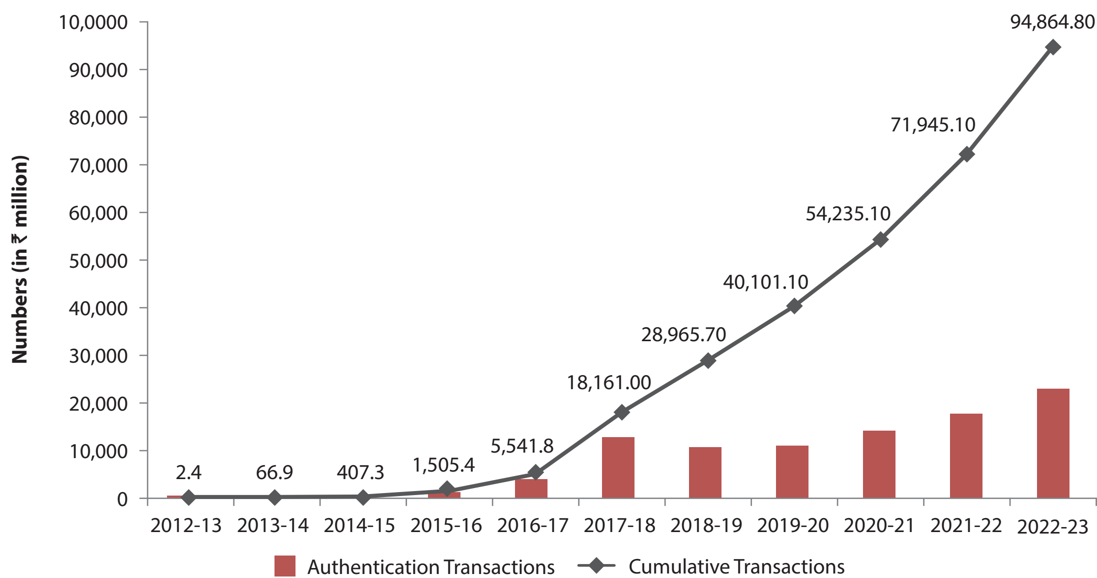


Figure 12.8. Year-wise Aadhaar Authentication Transactions and Cumulative Transactions

Source: UIDAI, Annual Report 2022–23

12.5. UNIFIED PAYMENTS INTERFACE (UPI): THE THIRD PILLAR DRIVING DIGITAL FINANCIAL INCLUSION

The introduction of the UPI by the National Payments Corporation of India (NPCI) in 2016 marked a significant shift in the way financial transactions were conducted in the country. UPI enabled instant, real-time payments across banks and platforms, allowing users to transfer money, pay bills, and make purchases with remarkable ease. Requiring only a smartphone and eliminating the need for remembering complex details like account numbers or IFSC codes, UPI's accessibility quickly established it as the preferred method for digital payments in India, fostering widespread adoption.

Beyond personal convenience, UPI had a profound impact on small businesses, street vendors, and rural communities, many of whom previously had limited access to formal banking services. Prior to UPI, accepting digital payments often required costly infrastructure like point-of-sale (POS) machines, which many small businesses could not afford. UPI changed this by allowing even the smallest vendors to accept payments via QR codes or mobile numbers. As a result, UPI significantly boosted digital financial inclusion and grassroots economic activity. Between July 2022 and July 2024, monthly UPI transactions more than doubled from 6.28 billion to 14.43 billion, with transaction values nearly doubling from ₹10.63 trillion to ₹20.64 trillion. This growth demonstrates the increasing role UPI plays in driving both economic participation and financial inclusion. A more detailed discussion on UPI and its impact on digital financial inclusion is given in Chapter 11 of this report.

12.6. AADHAAR ENABLED PAYMENT SYSTEM (AePS): THE FOURTH PILLAR DRIVING DIGITAL FINANCIAL INCLUSION

India's digital transformation has also been propelled by innovative platforms like AePS.[v] Leveraging India's Aadhaar biometric infrastructure, AePS has enabled millions of underserved citizens to participate in the digital economy, often in areas where UPI's reach is limited. Since its inception, AePS has grown significantly, from 42.67 million transactions worth ₹479.09 million in FY 2015–16 to over 5,533 million transactions in FY 2023–24, amounting to ₹3,148,773.8 million, underscoring its essential role in the financial lives of India's most vulnerable populations (Figure 12.9. and Table 12.5.). This growth is a testament to AePS's ability to reach populations that other digital platforms have struggled to penetrate.

The growth in off-us transactions—*those conducted using other banks' infrastructure*—reflects AePS's increasing interoperability. By FY 2023–24, off-us transactions accounted for 44.45% of the total, underscoring the expanded reach and convenience that AePS has brought to users in remote and underserved areas. This interoperability reduces users' dependency on their parent banks and increases access to banking services through business correspondents (BCs) and micro-ATMs, enabling financial access across a fragmented banking ecosystem.

While AePS has significantly advanced financial inclusion, it faces challenges, particularly regarding static biometric authentication. Traditional biometric methods, such as fingerprint scanning, can sometimes fail due to issues like worn fingerprints, physical damage, or moisture, which are particularly common in labour-intensive and rural populations. Such challenges have led to transaction failures, causing frustration for users relying on AePS for their daily banking needs (see Box 12.2).

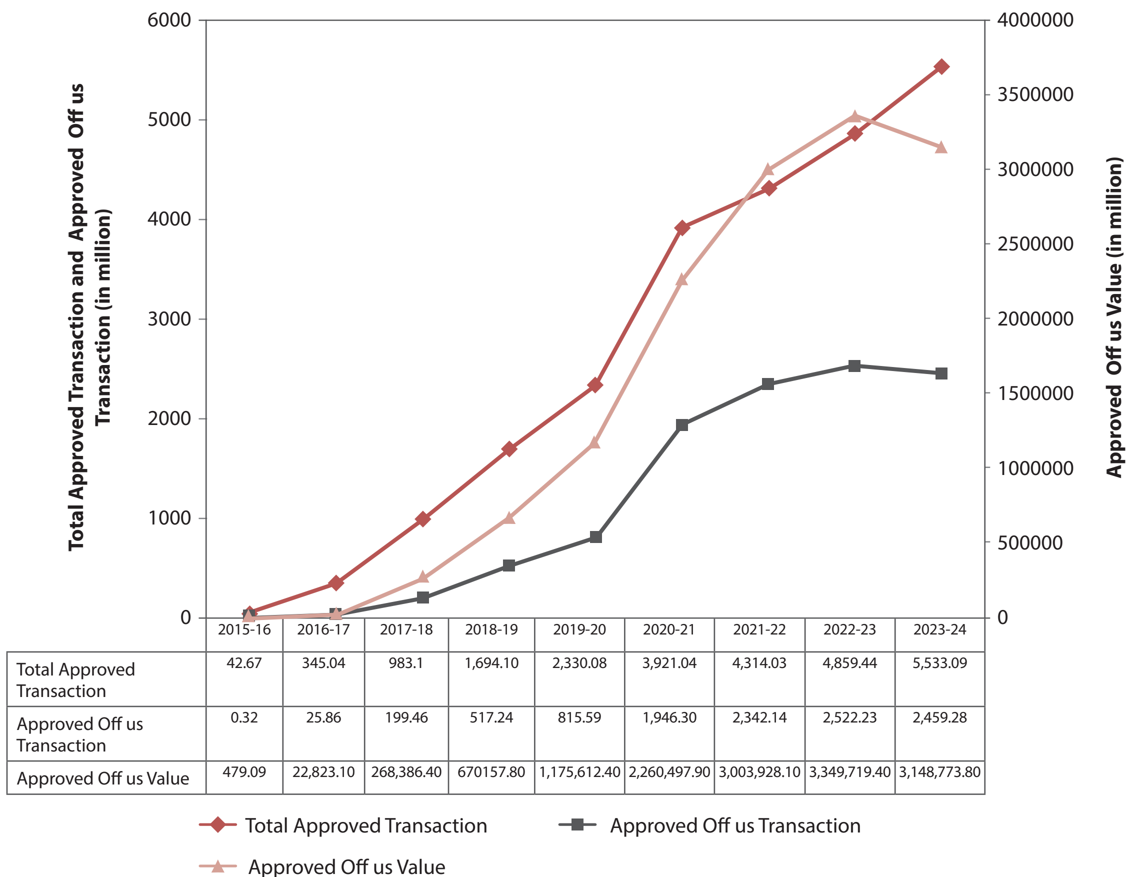
BOX 12.2. AePS FAILURE RATES

AePS experienced higher failure rates during its initial years (2016–2018) as the infrastructure and technology were still developing.[vi] Technical glitches and limited user awareness often contributed to unsuccessful transactions.[vii] However, since 2018, the success rates have improved significantly. Approved e-KYC[viii] transactions rose from 3.46 million in FY 2015–16 to 467.64 million in FY 2023–24. Similarly, Demo Auth[ix] transactions, which reflect system reliability, increased from 5.42 million in FY 2015–16 to 89.14 million in FY 2023–24.

Several improvements have contributed to this success, including certification of device vendors, enhanced security through digitally signed XML-based specifications, and upgrades to micro-ATM software. While adaptive biometrics could further reduce failures due to worn fingerprints or environmental factors, regular updates on failure rates and system performance are crucial to building user trust and promoting wider AePS adoption.

To address these challenges, adaptive alternative biometrics[x] is emerging as a solution. Unlike static biometrics, which rely on a single authentication mode (usually fingerprints), adaptive alternative biometrics dynamically adjust based on the quality of the biometric input. For instance, if a user's fingerprint is unclear, the system can switch to alternative authentication methods like IRIS scans or facial recognition. This flexibility can significantly reduce failure rates and improve the overall user experience. As these technologies become more widespread, they will further strengthen AePS's ability to provide reliable and inclusive financial services, especially in underserved regions. By integrating adaptive biometric systems, AePS is positioning itself to overcome the technological barriers that have historically affected its functionality in extreme environments. This development also aligns with Reserve Bank of India's (RBI's) recent efforts to introduce self-KYC options using adaptive biometrics, offering a more inclusive and resilient banking system.

In summary, AePS is uniquely equipped to serve populations that are often excluded from digital financial services. By using biometric verification for transactions, it ensures that even those with low literacy or without smartphone access can still engage with the banking system. Thus, AePS has revolutionised access to financial services for underserved and remote populations in India, complementing the urban and peri-urban reach of UPI. With continuous advancements in biometric technology, AePS is well-positioned to expand its role in digital financial inclusion, offering secure, reliable, and accessible banking services to those who need them most.



	2015-16	2016-17	2017-18	2018-19	2019-20	2020-21	2021-22	2022-23	2023-24
Total Approved Transaction	42.67	345.04	983.1	1,694.10	2,330.08	3,921.04	4,314.03	4,859.44	5,533.09
Approved Off us Transaction	0.32	25.86	199.46	517.24	815.59	1,946.30	2,342.14	2,522.23	2,459.28
Approved Off us Value	479.09	22,823.10	268,386.40	670157.80	1,175,612.40	2,260,497.90	3,003,928.10	3,349,719.40	3,148,773.80

Figure 12.9. AePS Total Approved Transaction, Approved Offus Transaction and Approved Offus Value from 2015–16 to 2023–24

Source: https://www.npci.org.in/what-we-do/aeps/product-statistics

Table 12.5. Aadhaar Enabled Payment System (AePS) (in million)

Financial Year	Total Approved Transaction	Approved Offus Transaction	Approved Offus Value	Approved BHIM Aadhaar Pay Transaction	Approved BHIM Aadhaar Pay Value	Approved Onus Transaction	Successful eKYC	Approved Demo Auth – Authenticated
2015–16	42.67	0.32	479.09	0	0	42.35	3.46	5.42
2016–17	345.04	25.86	22,823.1	0	0	319.21	47.61	31.81
2017–18	983.1	199.46	268,386.4	1.96	780.69	781.69	156	639.7
2018–19	1,694.1	517.24	670,157.8	6.78	8,154.70	1,170.1	152.74	136.33
2019–20	2,330.08	815.59	1,175,612.40	9.09	13,033.09	1,505.42	89.56	34.48
2020–21	3,921.04	1,946.3	2,260,497.9	16.08	25,794.4	1,958.69	150.65	39.1
2021–22	4,314.03	2,342.14	3,003,928.1	22.8	61,132.70	1,949.12	243.55	76.02
2022–23	4,859.44	2,522.23	3,349,719.4	21.42	67,924.4	2,315.549	340.43	57.34
2023–24	5,533.09	2,459.28	3,148,773.8	19.4	61,254.6	3,054.41	467.64	89.14

Source data from https://www.npci.org.in/what-we-do/aeps/product-statistics

BOX 12.3. CATALYSTS OF FINANCIAL INCLUSION: THE UNSUNG HEROES BEHIND AePS

Business Correspondents (BCs)[xi] have emerged as the unsung champions driving the extraordinary growth of AePS, especially in India's most remote and underserved regions. With relentless dedication, these frontline warriors have brought the power of digital banking to the doorsteps of millions, transcending geographic and infrastructural boundaries. Armed with micro-ATMs and local expertise, BCs have not only facilitated seamless cash deposits and withdrawals but also become the trusted guides for first-time users navigating biometric authentication. By empowering small merchants to embrace low-cost, secure digital transactions, BCs have redefined convenience, ensuring the most remote corners of the country are part of the financial revolution. While there have been some operational issues with BC operations, by and large, their contribution to extending financial services to the last mile deserves recognition.

Adding further momentum to this transformation, the sprawling network of **Common Service Centres (CSCs)** has amplified AePS's reach like never before. Functioning as vital BC hubs with over 58.86 million locations across India,[xii] CSCs have woven a vast web of micro-ATMs and digital access points. This has ensured that even the most isolated villages can access essential financial services, bridging the urban-rural divide. Together, BCs and CSCs have laid the foundation for a digitally inclusive India, setting the stage for ubiquitous, resilient, and accessible banking for all.

12.7. SPECIALISED COMPLEMENTARY INITIATIVES AS THE FIFTH PILLAR OF DIGITAL FINANCIAL INCLUSION

12.7.1. BBPS

Platforms like Bharat BillPay System (BBPS) showed how targeting specific issues, such as bill payments, can drive financial inclusion in focused areas, illustrating the effectiveness of addressing particular pain points.

12.7.2. The Account Aggregator Framework

The Account Aggregator (AA) framework demonstrates how empowering users with control over their financial data can unlock new services and improve credit access, emphasising the potential of data empowerment in financial services.

Table 12.6. Bharat BillPay Central Unit

Financial Year	Number of Biller	Transaction Volume (in million)	Transaction Value (in ₹ billion)
2018–19	1238	73.39	90.99
2019–20	1,876	145.71	216.76
2020–21	119,691	276	429.74
2021–22	243,563	668	1,139.70
2022–23	244,319	1,097	1,906.60
2023–24	256,608	1,387	3,069.50
2024–25	87,649	646	1,890.78

Source data from https://www.bharatbillpay.com/statistics/

Introduced by the RBI in September 2016 through its Master Direction on Non-Banking Financial Company (NBFC)—Account Aggregator (Reserve Bank) Directions, the AA network marked a transformative shift in India's financial ecosystem. As a Non-Banking Finance Company, AA facilitated seamless sharing of financial data between institutions, with the explicit consent of the customer. The AA framework empowered individuals to control how and where their financial information was shared, ensuring no data was transferred without their direct approval. Participation in the AA system was fully voluntary, providing consumers with a secure and transparent method to manage their financial data—an essential feature in today's digital financial landscape.

The AA framework opened opportunities for entities to register as Financial Information Providers (FIPs) or Financial Information Users (FIUs). FIPs included banks, NBFCs, insurance companies, and pension funds, while FIUs were entities regulated by financial sector authorities that consumed this data to offer tailored services. This robust infrastructure enhanced the flow of information between financial institutions, simplifying processes like loan applications, investments, and financial planning. By 2024, the RBI had granted registration to fourteen companies as AAs, reflecting the system's growing traction. This development paved the way for more streamlined and efficient handling of financial information, a critical element in advancing digital financial inclusion in India.

By June 2024,[xiii] the AA ecosystem had made significant progress in market adoption. A total of 94 financial institutions operated as both FIPs and FIUs on the platform, with 60 onboarded solely as FIPs and 353 as FIUs only. The platform enabled over 2.12 billion financial accounts for data sharing via the AA system, and 77.27 million users had linked their accounts. This rapid growth underscores the AA framework's pivotal role in advancing digital financial inclusion by granting millions of individuals greater access to financial services. By facilitating secure, efficient data sharing, AA enables underserved populations to access credit, insurance, and other essential services, contributing to India's broader goal of inclusive, tech-driven financial empowerment.

12.7.3. Open Credit Enablement Network (OCEN)

The Open Credit Enablement Network (OCEN)[xiv] is at the forefront of digital financial inclusion in India, providing innovative solutions to address limited access to formal credit. Historically, small businesses, farmers, and low-income individuals have faced challenges in securing loans due to a lack of formal credit histories or collateral. Traditional financial institutions often struggle to assess the creditworthiness of these groups. OCEN addresses this gap by creating an open, interoperable framework that enables FinTech companies, banks, and other financial service providers to use alternative data sources—such as transaction history, real-time cash flows, and behavioural patterns—to evaluate creditworthiness. This approach expands access to credit for individuals and businesses excluded from the traditional financial system, contributing to India's broader goals of digital financial inclusion.

One of OCEN's most impactful features is its ability to use alternative data to assess creditworthiness, creating new opportunities for small businesses, rural entrepreneurs, and underserved populations. By leveraging digital payments, transaction histories, and other financial activities, OCEN provides new pathways to formal

credit access. Its integration with existing digital platforms such as UPI and Aadhaar further strengthens its impact, enabling individuals to apply for loans more efficiently and allowing lenders to make quick assessments based on real-time data. Although OCEN has made significant strides in reshaping the credit landscape in India, challenges remain. Ensuring that marginalised populations can fully participate in the digital credit ecosystem, overcoming barriers such as digital literacy, and addressing concerns around data privacy will be essential to realising OCEN's full potential in driving digital financial inclusion.

By fostering competition and innovation among lenders, reducing borrowing costs, and expanding access to underserved markets, OCEN is transforming India's financial ecosystem. Its ability to empower small businesses and low-income individuals to invest in their operations and scale their activities contributes to broader economic growth. As OCEN continues to evolve, its role in promoting digital financial inclusion will be crucial in creating a more inclusive, resilient, and dynamic financial environment across the country.

12.7.4. Open Network for Digital Commerce (ONDC)

The Open Network for Digital Commerce (ONDC) is a revolutionary initiative aimed at democratising access to digital commerce in India while promoting digital financial inclusion. Launched to create an open, decentralised marketplace, ONDC empowers small and medium-sized enterprises (SMEs) with tools to compete with larger e-commerce players. Unlike traditional platforms dominated by a few large corporations, ONDC levels the playing field by enabling any business to list its products and services across multiple platforms, helping small businesses gain traction that is often limited on major e-commerce sites due to high fees and restrictive policies. Furthermore, ONDC's integration with digital financial services, such as UPI, ensures that these businesses can access critical financial tools, promoting greater financial inclusion as they expand their digital presence. By 2024,[xv] ONDC had already facilitated over 25 million retail orders from more than 242,475 sellers across 806 districts, driving both digital commerce and financial inclusion.

For small businesses, especially those located in rural areas, ONDC offers a transformative opportunity to engage with the digital economy without requiring significant upfront investments. Its open-source technology allows businesses to list their products easily, access new markets, and connect with consumers well beyond their local areas. This is particularly important for businesses that have historically been excluded from digital commerce due to high platform fees, limited logistics access, or the complexities of digital payments. By reducing these barriers, ONDC not only enhances business opportunities but also strengthens digital financial inclusion through access to UPI, digital loans, and insurance services. As a result, small businesses can maintain control over their pricing, terms, and customer relationships while integrating into the broader financial ecosystem. In its first year of operation, by 2024, ONDC supported over 693,000 sellers and service providers, processed more than 12.4 million orders, and provided a pathway for digital financial inclusion for businesses across India.

ONDC is also reshaping the competitive landscape by encouraging greater innovation within the digital commerce space, with direct implications for digital financial inclusion. Its open, interoperable framework promotes the development of new tools and services that enhance both customer experience and operational efficiency for businesses. For instance, businesses using ONDC can seamlessly integrate digital payment systems like UPI, access logistics solutions, and benefit from financial services such as loans and insurance—tools that are pivotal for financial inclusion in underserved areas. This integration of commerce and financial services creates a cohesive ecosystem that supports business growth and enables greater access to digital financial services for businesses of all sizes. ONDC's mission to raise e-retail penetration from 4.3% to its full potential aligns with its vision of ensuring that financial inclusion reaches even the most marginalised communities. With over 113 network participants, ONDC reached a daily peak of 25,000 retail orders and 36,000 mobility rides in 2024,[xvi] making significant strides in promoting financial inclusion across India's vast entrepreneurial landscape.

12.7.5. Direct Benefit Transfers

The DBT system has dramatically advanced digital financial inclusion in India, especially when comparing its early and most recent data. In 2014–15, DBT facilitated the transfer of ₹389.26 billion, marking the beginning of a reform aimed at streamlining welfare distribution. A key feature of DBT is its integration with Aadhaar-linked bank accounts, which incentivised millions of people—especially those in rural and underbanked areas—to open accounts through PMJDY. This initiative

Table 12.7. Financial Year-wise Direct Benefit Transfer

Financial Year	Total Direct Benefit Transfer (in ₹ billion)	Total Number of Transactions (in billion)	Number of Schemes	Ministries	Estimated Gains (in ₹ Billion)
2019–20	3,816.31	4.38	315	53	Cumulative up to March 2022 – 2848.67
2020–21	5,525.27	6.03	315	53	
2021–22	6,302.64	7.17	315	53	
2022–23	7,163.96	6.93	315	53	April 2022 to March 2023 – 636.96 Cumulative up to March 2023 – 3,485.64
2023–24	6,913.59	10.06	315	53	
2024–25	716.80	0.92	315	53	

Source: https://dbtbharat.gov.in/

provided a gateway for individuals who had previously been excluded from the formal financial system, granting them access to banking services. By 2023–24, the scale of DBT had grown substantially, transferring ₹6,913.59 billion through over 10.06 billion transactions. This remarkable increase highlights DBT's critical role in promoting digital financial inclusion. Over the years, the number of non-unique beneficiaries increased from 108 million in 2013–14 to 1799 million by 2021–22,[xvii] showcasing the system's effectiveness in expanding access to financial services. For many beneficiaries, this was their first introduction to formal banking, allowing them to engage in savings, credit, and insurance—services previously beyond their reach.

In addition to expanding access, DBT has significantly accelerated the adoption of digital payment technologies among recipients. The direct-to-account model eliminated intermediaries, fostering familiarity with digital financial tools such as mobile banking, ATMs, and online transactions. This has reduced the cost of accessing financial services and bridged the urban-rural financial divide. More importantly, DBT has helped build long-term financial literacy, empowering beneficiaries to manage their finances better and gain trust in formal financial systems. Overall, DBT has been pivotal in fostering digital financial inclusion and reshaping how India's most vulnerable populations engage with the economy.

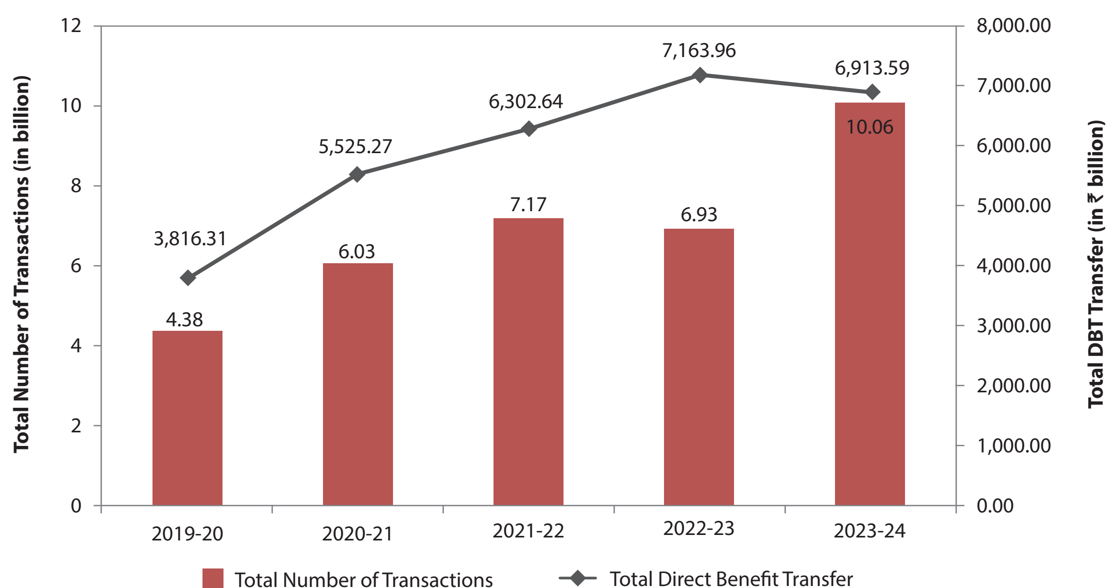


Figure 12.10. Total Number of Transactions and Total Direct Benefit Transfer from 2019–20 to 2023–24
Source: https://dbtbharat.gov.in/

12.7.6. Unified Lending Interface (ULI)

A key initiative in advancing digital lending is the Reserve Bank's pilot project on the Unified Lending Interface (ULI),[xviii] previously known as the Public Tech Platform for Frictionless Credit (PTPFC). ULI is designed to enable lending institutions to offer seamless, end-to-end digital credit by utilising consent-based data and related services. The platform currently integrates approximately 50 different types of data services. In addition to banks and non-banking financial companies (NBFCs), efforts are being made to include cooperative credit institutions through NABARD. A full-scale rollout of ULI is expected in due course, with the 'New Trinity' of JAM, UPI, and ULI marking a transformative step in India's digital public infrastructure journey.

The ULI platform should facilitate the smooth, consent-based transfer of digital information, such as state land records, between data service providers and lenders. By streamlining the credit appraisal process, it is likely to significantly reduce the time taken to extend credit, particularly for smaller and rural borrowers. ULI will employ standardised APIs within a 'plug and play' architecture, allowing for easy access to information from various sources and minimising the need for complex technical integrations. This will ensure faster delivery of credit with reduced documentation requirements for borrowers.

By digitising access to both financial and non-financial data, which traditionally resided in separate silos, ULI aims to address the large unmet demand for credit, particularly in the agricultural and MSME sectors. Following the successful pilot phase, a nationwide launch of ULI is planned. Just as UPI revolutionised payments in India, ULI is expected to have a similarly transformative impact on the lending landscape. The combined power of JAM, UPI, and ULI should represent a revolutionary step forward in India's digital infrastructure journey.[xix]

12.8. CHALLENGES IN INDIA'S FINANCIAL INCLUSION JOURNEY

While India's financial inclusion journey has been remarkably successful, it has not been without challenges. One of the most significant challenges has been ensuring that financial inclusion efforts reach the most marginalised and underserved populations, particularly in rural areas. Despite widespread digital infrastructure, access to technology and digital literacy remains uneven across the country. Many rural communities still lack reliable internet access and the necessary digital skills to participate fully in the formal financial system. Addressing these disparities is crucial to ensuring that financial inclusion efforts are truly inclusive.

Another challenge has been the issue of account dormancy, particularly in the context of PMJDY. While millions of accounts have been opened, many remain inactive, with little to no financial activity. This is often due to a lack of financial literacy and awareness of how to use banking services effectively. Ensuring that newly banked individuals understand how to use their accounts and the benefits of participating in the formal financial system is critical to the long-term success of financial inclusion efforts.

Data privacy and security have also emerged as key concerns, particularly with the widespread use of Aadhaar and other digital platforms. As financial services become increasingly digital, the risk of data breaches, fraud, and cyberattacks increases. Ensuring robust safeguards to protect users' data and financial information is essential to maintaining trust in digital financial systems. Addressing these security challenges requires ongoing efforts to strengthen cybersecurity measures and educate users about protecting themselves from fraud.

12.9. KEY TAKEAWAYS FROM INDIA'S DIGITAL FINANCIAL INCLUSION JOURNEY

What then are the key takeaways from India's decade old digital transformation journey? These are given below:

Lesson #1: Visionary Leadership and Commitment are Essential for Driving Financial Inclusion

- **Sustained Commitment:** India's progress relied on strong leadership and unwavering commitment from top government officials. Prioritising financial inclusion and implementing consistent policies across sectors were vital to the country's progress.
- **Political Will:** Active political engagement ensured seamless collaboration among government agencies, private institutions, and financial organisations.

Lesson #2: Accurate Diagnosis of Financial Exclusion Enables Effective, Tailored Solutions

- **Understanding the Challenge:** India's deep financial disparities, especially in rural areas, required a comprehensive analysis to design effective interventions that addressed economic, regional, and infrastructural inequalities.

- **Localised Solutions:** Adapting global best practices to its unique geography and population diversity, proved effective.

Lesson #3: A Holistic Approach is Crucial for Comprehensive Financial Inclusion

- **Beyond Bank Accounts:** Financial inclusion extends beyond providing access to bank accounts, incorporating credit, insurance, pensions, and digital payments to create a robust financial ecosystem.
- **Comprehensive Strategy:** Addressing multiple aspects simultaneously allowed India to integrate basic banking services with social security schemes and initiatives for underserved communities.

Lesson #4: Leverage Technology to Expand Financial Services at Scale

- **Digital Platforms:** The use of Aadhaar, UPI, and other digital platforms drastically reduced costs, streamlined financial services, and expanded outreach to underserved populations. Technology became a game-changer in advancing inclusion.
- **Layered Digital Infrastructure:** The design of India Stack, with its presenceless, paperless, and cashless layers, demonstrated how a layered digital approach can drive scalable, effective financial inclusion across large populations.

Lesson #5: Focus on Underserved Segments to Drive Inclusivity

- **Women and Rural Populations:** By focusing on women and rural communities, India addressed historical gaps in financial access. Incentivising engagement through insurance and overdraft facilities prevented dormant accounts and promoted active participation.
- **Digital Identity and Access:** Aadhaar's universal digital identity reduced barriers to accessing financial services for marginalised populations, proving the importance of digital identity systems in driving inclusive growth.

Lesson #6: Public-Private Collaboration is Key to Scaling Financial Inclusion Initiatives

- **Public-Private Partnerships:** The collaborative efforts between government, private entities, and financial institutions were instrumental in delivering large-scale financial inclusion solutions. This joint approach drove India's success.
- **Regulatory Support for Innovation:** Regulatory sandboxes allowed fintech firms to innovate within controlled environments, encouraging product development without compromising system security.

Lesson #7: Incentivising Usage is Key to Sustaining Financial Inclusion

- **Incentives for Engagement:** Offering additional benefits like insurance and overdrafts helped keep accounts active and fostered user engagement. This incentivisation model was essential for preventing account dormancy.
- **Targeted Pain Points:** Platforms like Bharat Bill Payment System (BBPS) demonstrated that addressing specific financial needs, such as bill payments, can help drive broader financial inclusion.

Lesson #8: Fostering Innovation and Competition Enhances the Financial Ecosystem

- **Competition Drives Innovation:** Encouraging competition among banks, fintech firms, and other service providers promoted innovation and improved service quality, strengthening the financial inclusion ecosystem.
- Open APIs Enable Growth: Platforms like UPI, powered by open APIs, allowed developers to create a wide range of financial products, fostering rapid innovation and inclusion.

Lesson #9: Interoperability and Scalability are Critical for Broad Adoption

- **Interoperable Systems:** Seamless integration between various platforms and systems, such as UPI and Aadhaar, enabled widespread adoption of financial services, highlighting the importance of interoperability in financial inclusion.
- **Designed for Scale:** The infrastructure was built to handle billions of transactions, showcasing the importance of scalability in digital financial ecosystems.

Lesson #10: Balancing Financial Inclusion with Privacy and Security is Essential

- **Balancing Access and Privacy:** While expanding access through systems like Aadhaar, addressing concerns around data privacy and security was crucial to maintaining public trust in financial services.
- **Secure Data Empowerment:** Systems like the Account Aggregator empowered individuals to manage their financial data securely, ensuring privacy while promoting engagement with financial services.

Lesson #11: Bridging the Digital Divide Requires Hybrid Solutions and Financial Literacy

- **Hybrid Approaches:** Combining digital services with physical infrastructure, such as banking correspondents in rural areas, ensured

comprehensive financial inclusion. This hybrid model was essential in reaching underserved populations.

- **Investing in Financial Literacy:** Financial literacy efforts ensured that people not only gained access to financial services but also knew how to use them effectively, translating access into meaningful financial participation.

These key takeaways from India's financial inclusion journey can serve as guiding principles for other countries looking to replicate similar successes in addressing financial exclusion.

12.10. CONCLUSION: THE EVOLVING LANDSCAPE OF FINANCIAL INCLUSION: SHIFTING FOCUS TOWARD SUSTAINED IMPACT AND DEEPER ENGAGEMENT

India's financial inclusion journey from 2014 to 2024 has been transformative, bringing millions into the formal financial system. However, moving forward, the focus must now shift from mere access to encouraging meaningful usage. The first priority is encouraging citizens to actively use financial services, such as credit, insurance, and savings, by offering products tailored to specific needs. This includes gender-driven initiatives and AI-powered solutions that promote financial well-being. The second priority emphasises sustained engagement through deeper financial services that enhance resilience, particularly for underserved groups like women, rural populations, and small businesses. These services could include emergency funds and risk management tools to help citizens manage financial shocks.

Adapting to technological advancements forms the third priority. India must adopt a dynamic financial inclusion model by integrating emerging technologies like AI, blockchain, and IoT. However, it is critical to address challenges like algorithmic biases and ensure these innovations are accessible to all. The fourth priority, financial literacy, is vital for empowering citizens to navigate increasingly complex financial products and make informed decisions. Expanding financial literacy programmes will improve financial health and stability, enabling individuals to plan for emergencies, manage debt, and use digital tools effectively.

The final priorities focus on building resilience and strengthening cybersecurity. Crisis-ready financial products are crucial to withstand economic volatility from challenges like climate change and geopolitical instability. Additionally, with the expansion of digital financial services, safeguarding cybersecurity becomes essential to protect users from threats such as cyberattacks and ensure trust in the system. By addressing these evolving priorities, India can deepen its financial inclusion efforts, focusing on long-term financial health and resilience for all citizens.

ENDNOTES

i RBI, 'Annual Report 2020-21, 2021-22, 2022-23, and 2023-24', https://www.rbi.org.in/Scripts/AnnualReportMainDisplay.aspx

ii RBI, 'Annual Report 2020-21, 2021-22, 2022-23, and 2023-24', https://www.rbi.org.in/Scripts/AnnualReportMainDisplay.aspx

iii U.N. Dept. of Economic and Social Affairs - Population Division. World Population Prospects: The 2024 Revision. (Medium-fertility variant), Population of India (2024 and historical)

iv https://uidai.gov.in/aadhaar_dashboard/

v AePS has emerged as a key driver of financial inclusion for the extreme urban poor, peri-urban poor, and remote rural populations, where access to smartphones, mobile data, and internet connectivity is limited, while UPI has revolutionized digital payments primarily in urban, peri-urban, and some rural areas.

vi See https://dvararesearch.com/wp-content/uploads/2023/12/Transaction-failure-rates-in-the-Aadhaar-enabled-Payment-System-Urgent-issues-for-consideration-and-proposed-solutions.pdf

vii https://diri.isb.edu/en/community/blog-grid/analysis-of-failures-in-aadhaar-enabled-payment-system.html

viii Electronic Know Your Customer (eKYC) is a digital process where individuals' identities are verified electronically, typically for financial services or other business transactions.

ix Demo authentication is a process that matches a customer's demographic details with the UIDAI database. The demographic details include the customer's name, date of birth, and gender.

x Adaptive biometrics offers a dynamic solution for reducing failure rates in AePS transactions by selecting the most appropriate biometric modality based on real-time quality assessments. For instance, if a fingerprint scan is unclear, the device can instantly switch to an iris scan, while facial recognition can be used for senior citizens or individuals with faded fingerprints

without requiring re-registration. Machine learning algorithms continuously enhance liveness detection, safeguarding against spoof attacks. The Aadhaar ecosystem supports multiple authentication methods, including fingerprint, iris, and OTP, and NPCI has enabled face authentication for AePS. By integrating these modalities through adaptive algorithms, biometric devices can maintain high success rates, even in areas with poor connectivity, by storing authenticated credentials offline when necessary. This technology, aligned with open standards for national portability, maximizes the success of transactions and ensures continuity when primary biometrics fail. Recent regulatory moves, such as allowing self-KYC for low-risk customers, further complement this approach. The wider adoption of adaptive biometrics will make banking more inclusive and resilient, particularly in semi-urban and rural areas, fostering greater trust and usage of AePS.

xi The number of BCs as of March 2021 is reported as 1.84 million - https://ijcsacademia.com/index.php/journal/article/view/88

xii CSC's in rural areas are said to number 0.58 million, of which 0.46 million are in rural areas while 0.12 million are in urban areas – http://www.csc.gov.in

xiii Source Department of Financial Services, Ministry of Finance (Government of India), 'Account Aggregator Framework', https://financialservices.gov.in/beta/en/account-aggregator-framework

xiv https://ocen.dev/

xv https://opendata.ondc.org/retail

xvi https://opendata.ondc.org/retail

xvii https://dbtbharat.gov.in/

xviii Paraphrased from Das, Shaktikanta, (August 2024), 'FinTech Innovations for India @100: Shaping the Future of India's Financial Landscape (Address by Shri Shaktikanta Das, Governor, Reserve Bank of India - August 28, 2024 - at the Global Fintech Fest, Mumbai)', https://rbi.org.in/scripts/BS_SpeechesView.aspx?Id=1458

xix IndusInd Bank piloted the same in Maharashtra

Emerging Water and Sanitation Financing Innovations in India:
Challenges and Way forward

Dr. Natarajan Jeyseelan

13

13.1. INTRODUCTION

13.1.1. Need for WASH (Water, Sanitation and Hygiene) and Climate Smart WASH services

- Sustainable access to safe water, improved sanitation and good hygiene is not only a basic necessity for every individual in the world, but a key focus area for all stakeholders, because it adds more socio-economic development benefits to the community as a whole.
- Unsafe drinking water is the major cause of death of more than 1.5 million (WHO, 2022) people every year from diarrhea, most of them infants and children.
- Climate change will emerge as a key risk leading to frequent droughts and floods, which disrupt individual households and the communities at large.
- Lack of access to sanitation affects quality of life as people's productivity goes down and healthcare costs go up. School attendance girls drops and the safety of women and girl children going for open defecation is at stake.
- Lack of access to affordable equipment and education in hygiene practices leads to health issues and loss of life.
- Migration of people in large numbers from rural to urban centers creates pressure on Urban Local Bodies (ULBs) to provide continued access to water and sanitation to people in informal communities and slums.

To achieve SDG 6 – clean water and sanitation to all by 2030, WASH initiatives need to be accelerated.

13.1.2. SDG 6: Access to Clean Water and Sanitation

Out of the 17 Sustainable Development Goals (SDGs), SDG 6 focuses on improving water quality by reducing pollution, increasing water-use efficiency in all sectors and strengthening the participation of local communities in improving water and sanitation management.

13.1.3. How SDG 6 is Linked with Other SDGs?

SDG 6 is linked to the other SDGs i.e., some of the SDGs are impacted by the achievement of targets of SDG 6. Not achieving the targets under SDG 6 directly impacts the other SDGs like poverty, health, education, food security, gender equality, energy and climate change.

So, the achievement of SDG 6 should be viewed in a holistic way and not in isolation.

Table 13.1. SDG 6 Linkage with Other SDGs

SDG No.	SDG	Linkage with SDG 6
1	End poverty in all its forms everywhere.	Access to water, sanitation and hygiene improves the productivity of the vulnerable people and helps in poverty reduction.
2	End hunger, achieve food security and improved nutrition and promote sustainable agriculture.	More than 70% of water use is for agriculture. Efficiency in water use will increase the sustainability of agriculture, leading to food security.

SDG No.	SDG	Linkage with SDG 6
3	Ensure healthy lives and promote well-being for all at all ages.	Inadequate access to water and sanitation has an impact on the mortality rate for children under the age of five. Achieving sustainable access to safe water and sanitation could reduce the outbreak of diseases, as most diseases are water-borne ones.
4	Ensure inclusive and equitable quality education and promote lifelong learning opportunities for all.	Lack of toilets at schools affects the attendance and health of girl children. Access to water and sanitation in schools results in improvement of attendance rates in schools.
5	Achieve gender equality and empower all women and girls.	In households, where water facilities are not available, women and girls spend several hours every day collecting water. Those living without a toilet face a lot of difficulty in finding a safe place to defecate every day. Creating access to water and sanitation saves time for girls and women and this time can be deployed by them in their enterprise . Women face the risk of violence while defecating in the open and access to sanitation facilities can ensure their safety.
7	Ensure access to affordable, reliable, sustainable and modern energy for all.	Energy is used for extracting water for irrigation, treatment and distribution of drinking water. Water is used for hydel power production.
13	Take urgent action to combat climate change and its impacts.	Climate change results in frequent droughts, floods and cyclones, which put water management systems at risk as many people living in vulnerable areas are affected by natural disasters, especially floods.

13.1.4. Economic Impact of WASH

The Water and Sanitation services not only bring social returns but also huge economic returns. Every dollar invested in sanitation gives a return of USD 5.5 in benefits and every dollar invested in drinking water supply gives a return of USD 2.0 in benefits (WHO, 2012).

The Swachh Bharat Mission (SBM), or the Clean India Movement, a nationwide movement for improving access to sanitation programs, has created a tangible impact at the household level. An evaluation study on the impact of SBM (UNICEF, 2020) has revealed that SBM has led to cumulative economic damage of approximately ₹25,815 billion (US$361.85 billion) during the period 2014-15 to 2018-19.

13.2. EMERGING SCENARIO

13.2.1. Current Global Access to Water and Sanitation

The *Sustainable Development Goals Report 2024* reveals that only 17% of the SDG targets are on track, nearly half are showing minimal or moderate progress and progress on over one-third has stalled or even regressed. This progress was hampered mainly due to the impact of the COVID-19 Pandemic, displacements due to conflicts and wars and climate change risks.

BOX 13.1. ACCESS TO WASH BY 2030

At the current pace, in 2030, 2 billion people will still live without safely managed drinking water, 3 billion without safely managed sanitation and 1.4 billion without basic hygiene services.

— ***The Sustainable Development Goals Report 2024,*** **United Nations, 2024**

13.2.2. Access to WASH in India

SBM (Gramin) of the Government of India has scaled up the initiative of creating access to sanitation while the Jal Jeevan Mission (JJM) has created access to drinking water in rural India.

BOX 13.2. ACCESS TO WASH IN INDIA

- Over 149 million households have tap water connection.
- 119.2 million toilets built for improved sanitation.

SDG India Index Report 2024, **NITI Aayog, Government of India, 2024**

This level of massive creation of WASH infrastructure has transformed the WASH landscape in India but also thrown open the challenges for the maintenance of such infrastructure, for which funding is not available on a sustainable basis. India generates 72,368 Million Litres per Day (MLD) of urban wastewater while only 20,236 MLD is treated, which amounts to only 28% (NITI Aayog, 2022) of the total wastewater generated. This gap offers a huge scope for investments in creating Sewage Treatment Plant (STP) capacities.

Lending and equity investments have remained muted in the WASH Micro, Small and Medium Enterprises (MSME) space, which is reflected in estimates suggesting that majority of MSMEs lack access to suitable finance. There are over 0.2 Million MSMEs in WASH and together they have an annual debt demand of 200 Billion Less than 16 of this credit demand is currently formally financed.

13.3. DEMAND FOR WASH LOANS

13.3.1. Demand for Sanitation Loans

In India, the SBM was successfully implemented by the government and 100% open defecation free (ODF) status was achieved. Despite this the toilet upgradation needs itself is huge from the demand perspective. A demand study (Dalberg, 2020) reveals that the total market size for sanitation lending in India is ₹820 billion.

13.3.2. Demand for Water Loans

In India, water-related loans assume significance as water is a lifeline not only for agricultural activities but also for industrial activities, as well as for household needs. The demand for water-related activities like water desalinisation plants, water storage structures, flood and drought resilience works, disaster risk management, hydropower generation, water purification, water distribution activities, safe water enterprises like water ATMs, wastewater collection and treatment plants, modern Irrigation system (precision irrigation – micro irrigation, sprinkler and drip irrigation) and automatic irrigation system based on Internet of Things (IoT) and farm modernisation has increased. Climate resilient loan offerings like rainwater harvesting, solar powered pumps and deep borewells and other product offerings are also emerging to address climate change risks.

13.3.3. Demand for WASH – MSMEs

For ensuring access to WASH for all, a comprehensive approach is needed and intermediaries in the WASH value chain have to get their funding on time to help the ultimate WASH users. The MSMEs in the manufacturing and sale of units of sanitary fittings, roof fittings, pipe fittings, motors, cleaning materials, personal hygiene products, menstrual hygiene products, and circular economy sanitation – waste-to-wealth units offer more scope for financing options, which will also create job opportunities and economic growth in the local areas.

A study (Dalberg, 2021) on MSMEs, reported that there are over 0.2 Million MSMEs in WASH, and together they have an annual debt demand of 200 Billion. Less than 16% of this credit demand is being met from formal sources. Hence, there is a golden opportunity for lenders to unlock the potential for lending to WASH MSMEs in the years ahead.

Table 13.2. Demand for Sanitation Lending in India*

Sanitation loan market	No. of households in millions	Estimated demand ₹ in billion.
New toilet loans	6.2	140
Toilet repair	3.7	92
Toilet upgrades	23.5	588
Total sanitation demand in India	33.4	820

Source: Catalyzing Sanitation Lending in India: COVID-19 Update, Dalberg, Asian Development Bank and Water.org. October 2020.

Table 13.3. Segment-wise Total Market Size

Segment	Solutions	Segment maturity	Debt infusion	Equity infusion	Market size	5 year CAGR growth	Total market (2022-26)
Downstream part suppliers	Segment manufacture and install water system components such as pipes, tanks and taps	Highly fragmented (~70% is fragmented,)	High (CAPEX heavy)	Low (Low margins + Govt + rural focused)	150 - 200 Bn	11%	1000-1300 Bn

Segment	Solutions	Segment maturity	Debt infusion	Equity infusion	Market size	5 year CAGR growth	Total market (2022-26)
Water Monitoring and Metering Systems	Segment develops and deliver meter systems, sensors and monitoring systems	Start-ups, SMEs are piloting with state govts/ private players	Low (Asset light model)	Very high (PE/VC) have funded startups and evaluating other deals	3-5 Bn	40-50%	60-70 Bn
Decentralised water treatment and delivery	Small scale treatment and delivery of treat water	Well organised and new innovations coming in	High (CAPEX heavy) working capital requirements project financing	High (drinkwell, rite water)	30-50 Bn	7%	₹20,000 - 25,000
Toilet installation, operations and maintenance	Maintenance and installation of toilets at community/ corporates	Fairly organsed: Cashflows from corporates/ airports/malls New innovations like waterless urinals etc	Low (Less CAPEX intensive)	Medium (Increasing visibility)	₹16,000 - 17,000	3%	₹85,000 - 95,000
Sewer/Septic tank cleaners and transporters	Model shift from truck based to robotics system	Robotics overtaking manual tasks	Medium	Very high	25-30 Bn	10%	₹18,000 - 19,000
Faecal sludge treatment plants	Work with municipal/ state govt. to setup and run operations of FSTP	Organised and small sized enterprises. MSME presence through public private partnership (PPP) models.	Medium (CAPEX requirements 50% of project cost)	Low	₹2,500 - 3,000	25%	200-250 Bn
Sewage treatment plants and greywater treatment plants	Medium sized enterprises required to setup and maintain small scale STP infrastructure.	New innovative solutions like nature based, chemical solutions	High (CAPEX intensive)	High	₹16,500 - 17,000	0.18	1,300 - 1,400 Bn
Emerging solutions	Segment manufacture and operate bio-toilets, waterless urinals	Startups in this segment are organised and use of non-conventional materials	Low (smart low scale solutions)	High	₹7.5 - 8 Bn	32%	85-90 Bn
Deep technology solutions	Innovations like pipeline leakage detection through robotics/ artificial intelligence (AI)/ satellite solutions	Organised and use of innovative AI solutions	Low (AI driven solutions, Low CAPEX)	Very high			

13.3.4. Impact of Policies on Different Segments

The policy on smart metering is set to have a great impact on the water management system, as it will enable real-time monitoring, leak detection and two-way communication between the meter and the utility. The smart water metering market is forecast (Frost and Sullivan, 2024) to increase at a Compound Annual Growth Rate (CAGR) of 18.9% to $180.2 million by 2030.

On 7 October 2024, gazette draft rules by the Union Ministry of Environment, Forest, and Climate Change were announced, which mark a significant step in India's efforts to overhaul its Liquid Waste Management (LWM) system. The notification mandates that these new rules will be enforced starting October 2025, giving stakeholders a transition period of one year within which to comply.

The initial reuse targets for bulk water consumers—industries, institutions and large housing societies—are set at 20% for the 2027-28 period. These targets will rise to 50% by 2030-31. This will increase the demand for funds for installing and operating the treatment plants in a decentralised manner in rural areas.

13.4. SUPPLY OF WASH LOANS IN INDIA

In India, lending to the WASH sector is driven by the active involvement of Microfinance Institution MFIs, Small finance banks, and private sector banks.

During Financial Year (FY) 2023, the WASH loan disbursements have grown by 26.8% over FY 2022. For FY 2024, the disbursements have come down by 16.9%. The drop in disbursements in the overall microfinance sector is also noticed as the sector recorded a reduction of 30.70% in disbursement at the end of FY 2025 first quarter compared to the previous quarter. MFIs disburse 82% of total WASH loan disbursements in India and they lead in financing in this sector, while banks disburse 18% of total WASH loan disbursements.

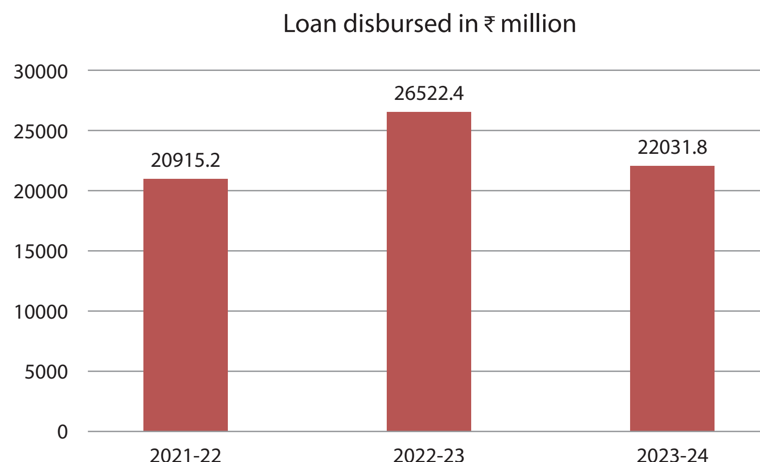


Figure 13.1. WASH Loan Disbursements in India
Source: Water.org. *FY for Water.org is Oct-Sep.

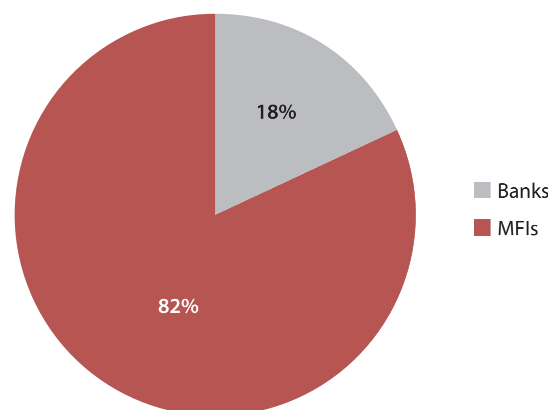


Figure 13.2. WASH Loan Disbursements during FY 2024
Source: Water.org

Over the last three years, WASH loans have been disbursed to 2.97 million people and the majority of borrowers are women, which benefiting 12.87 million household members. The number of loans disbursed has grown by 27% during FY 2022-23. However, during FY 2024, the number of loans disbursed has come down by 13.3%.

Table 13.4. Number of WASH Loans Disbursed and Members Benefitted

FY	No. of loans disbursed in millions	Members benefitted in millions
2021-22	0.88	4.07
2022-23	1.12	4.65
2023-24	0.97	4.15
	2.97	12.87

Source: Water.org.
Note: For Water.org the FY is from October–September.

13.4.1. Lending by Banks

With regard to WASH lending by banks, the momentum has been created by the active push from private sector banks and new-generation banks. Each bank has its own strengths by way of distribution of branch networks in remote rural areas or urban slums and its BC network to serve the people in the last mile. The disbursement of WASH loans by banks has come down by 24.4% during FY 2022-23. During FY 2024, the disbursements have further come down by 14.6%.

Table 13.5. Loan Disbursements to WASH by Banks

FY	Amount in ₹ million
2021-22	6,226.4
2022-23	4,704.2
2023-24	4,018.5

Source: Water.org.
Note: For Water.org the FY is from October–September.

Banks like ICICI bank build scale under WASH by partnering with government agencies like SLRMs, while Bank of India, Indian Bank, and Canara Bank primarily use non-governmental organisations (NGO) intermediaries to deliver WASH loans, as NGOs take up awareness creation, demand assessment, sourcing and monitoring the loan use and repayment follow up. The SRLMs in the states of Maharashtra, Madhya Pradesh and Odisha have disbursed around 250,000 WASH loans since 2018. Banks like IDFC First Bank lend to WASH as a group loan through self help group/ Joint liability group or lend as individual loan. State Bank of India and IDFC First banks give bulk loans to MFIs for on-lending to WASH purposes. As RRBs and cooperatives have excellent rural penetration, they lend for WASH directly through their SHGs or JLGs in their branches. Even though many public sector banks like Indian Bank, Bank of Baroda, Union Bank of India and several others have WASH loan products, they are yet to build a sizable WASH loan portfolio and they have a huge potential remaining unharnessed.

13.4.2. Lending by MFIs

MFIs take lead in lending to WASH sector as they are well-positioned with their last-mile delivery capability. The main demand for WASH loans comes from people at the bottom of the pyramid, and they prefer taking loans from MFIs rather than banks, as MFIs are easily accessible for them and offer loans to them without any security. The disbursement of WASH loans by MFIs recorded a quantum jump of 48.5% growth during FY 2022-23. During FY 2024, the disbursements have come down by 17.4%.

Table 13.6. Loan Disbursements to WASH by MFIs

FY	Amount in ₹ million
2021-22	14,688.8
2022-23	21,818.2
2023-24	18,013.3

Source: Water.org.
Note: For Water.org the FY is from October–September.

BOX 13.3. BATHROOM IN A BOX

Muthoot Microfin Ltd. MFI found that their clients in rural areas did not have access to quality and branded sanitaryware, and hence, the toilet structures did not last long. Muthoot Microfin Ltd. came out with an innovative concept called 'Bathroom in a Box' and entered into a tie-up with Hindware brand. 'Bathroom in a Box' is a pre-assembled, all-inclusive bathroom unit perfect for areas where building a traditional bathroom is difficult or costly. It is compact, easy to transport and can be quickly installed in various settings. This was well received by the clients and WASH portfolio grew fast and they have disbursed WASH loans to the tune of ₹2,600 million and the WASH portfolio stands at ₹670 million.

Satin Creditcare Network Limited (SCNL) is involved in WASH lending since 2014. Recently it piloted e-learning modules with support of Water.org for WASH training, especially targeting frontline Community Service Officers (CSOs). SCNL's frontline staffers have accessed all nine e-learning WASH training modules in Hindi. The response in the pilot in Bihar seems to be encouraging as already more than 500 loan officers have used these e-learning modules. This training for the field staff helped SCNL to fast-track the WASH portfolio build-up at the branches. SCNL now plans to expand the e-Learning offering to all branches and make it mandatory as part of induction training for all new joiners.

13.4.3. Lending by Non-Banking Finance Companies (NBFCs)

The NBFCs play a vital role in lending to the missing middles and to MSMEs who do not have access to the banking system due to lack of collateral or track record, or documentation. Of late, the NBFCs have streamlined their processes with digitalisation and started offering client-centric products and services with the shortest possible turnaround time. Select NBFCs have done extremely well in lending to the WASH sector.

BOX 13.4. 'WASH FINANCING' AS A FOCUS SEGMENT

Nabsamruddhi Finance Limited (NSFL), a subsidiary of National Bank for Agriculture and Rural Development (NABARD) identified WASH as a niche product in November 2020 and it received technical assistance support from Water.org in February 2022. WASH forms a part of NSFL's focus segment 'Green finance and Wellness'. It gives bulk loans to MFIs and NBFCs for financing for WASH needs. It has conducted WASH awareness camps in the field through the support of FINISH society. NSFL team participates in workshops and conclaves organised by Water.org, Sa-Dhan, Indian Sanitation Coalition and Dalberg. NSFL received the Sa-Dhan and Water.org Water and Sanitation (WASH) financing award 2022 under the category—Capital providers for water and sanitation lending. Up to 31 March 2024, NSFL has cumulatively lent ₹3,351 million to WASH through 29 partner institutions. In spite of not having a larger branch network in rural areas, NSFL has achieved the WASH penetration by really 'focusing on the wash as a focus segment'.

13.4.4. Lending by NABARD

NABARD introduced a special refinance support policy (NABARD, 2021) to increase the credit flow to the WASH sector from the banking sector. The refinance is to the tune of 95% of the eligible loan amount. Interest rate at 5.7% on quarterly and it is subject to change from time to time. With effect from 17 September 2024, the interest rate has been revised to 9.45% for NBFCs and MFIs, and 8.05% for RRBs in the schematic refinance policy for WASH. NABARD has mentioned in the refinance circular that a concessional refinance rate is given to lenders, it should be factored in while fixing the interest rate for the ultimate borrower by the lenders.

13.5. INNOVATIVE FINANCING MODELS IN WASH FINANCING

13.5.1. Innovative Financing Models

Innovative financing models are being evolved to address the investment gap in the WASH sector, as public finance alone will not be enough to achieve the SDG agenda. Instead of monitoring inputs and activities, the innovative instruments are Impact bonds, which will focus on monitoring outcomes and the payment will be based on outcome results. There are two kinds of impact bonds i.e., development impact bonds, when the outcome funder is a government, and social impact bonds, when the outcome funder is a donor agency or a philanthropic organisation. Blended finance is a combination of guarantee to derisk the in the project, grants, debts/equity and technical support offered under a collaborative arrangement by public and private investors and technical support agencies. The 4P model – public, private and people partnerships also offers good scope for replication.

13.5.2. Sanitation Impact Bonds (SIBs)

SIB is an innovative financial tool. ACTIAM & WASTE developed the proof of concept for SIBs. ACTIAM as a risk funder gave 3 million USD to Micro Credit in India for three years to provide liquidity to the MFI to lend to the WASH sector (for financing to 35,000 household sanitation systems). WASTE is the outcome funder, who paid the incentive to implement MFI Cashpor based on the outcome achieved. Finish Society provided technical assistance and acted as a facilitating agency. During the period 2019 to 2022, Cashpor disbursed WASH loans to 36,843 households. An evaluation (M-CRIL, 2022) of the outcomes of this SIB initiative revealed that 100% of members used the loan for sanitation purposes and 97% of members were using the toilets. SIBs shift the focus from inputs and activities to achieving the outcomes.

13.5.3. Blended finance— Water Access and Acceleration Fund (W2AF)

W2AF is a private equity fund (USAID, 2023) managed by Incofin with capital contributions from both private and public investors. This fund focuses on providing safe drinking water to 30 million people by 2030 in Africa and Asia. USAID has

given catalytic funding to enable a first loss tranche. The fund will invest in innovative water businesses that provide affordable safe drinking water to underserved populations. W2AF had received commitments for 36 million Euros at its first closing. In October 2023, W2AF invested 7.5 million Euro in Rite Water Solutions (India), a Nagpur-based company providing water solutions and managing 2,500 water treatment plants installed in 12 states. W2AF has a blended finance structure, an approach to use part of the public and private donor funds (for derisking) to attract capital from private investors.

13.5.4. Public, Private and People Partnership (4Ps)

Generally, in the development sector Public Private Partnership (PPP) is a common thing, wherein the government and private sector come together and deliver large-scale projects. In the WASH sector, for successful implementation of the projects, people's participation is the key. Hence, the 4Ps model will be an ideal option to ensure huge success in taking WASH to the grassroots level, in a decentralised manner, The Lighthouse Initiative of the Department of Drinking Water under the Ministry of Jal Shakti and Indian Sanitation Coalition implemented in association with corporates in 75 gram panchayats to make the villages ODF plus is a good example of the 4Ps model. The Lighthouse phase I report (Ministry of Jal Shakti and ISC, 2024) reveals that out of 75 gram panchayats, 30 have achieved the Lighthouse GP status, which maintains the highest standard of sanitation in their villages through community action and collaborative approach.

13.5.5. Green Finance

Green finance includes financing for climate adaptation, mitigation activities, energy efficiency, water management, pollution prevention, biodiversity conservation, circular economy initiatives and sustainable use of natural resources resulting in net carbon use reduction. In India, Small Industries Development Bank of India (SIDBI) promotes green finance through 13 banks/NBFCs by offering financial products, a partial risk-sharing facility and MSME cluster development.

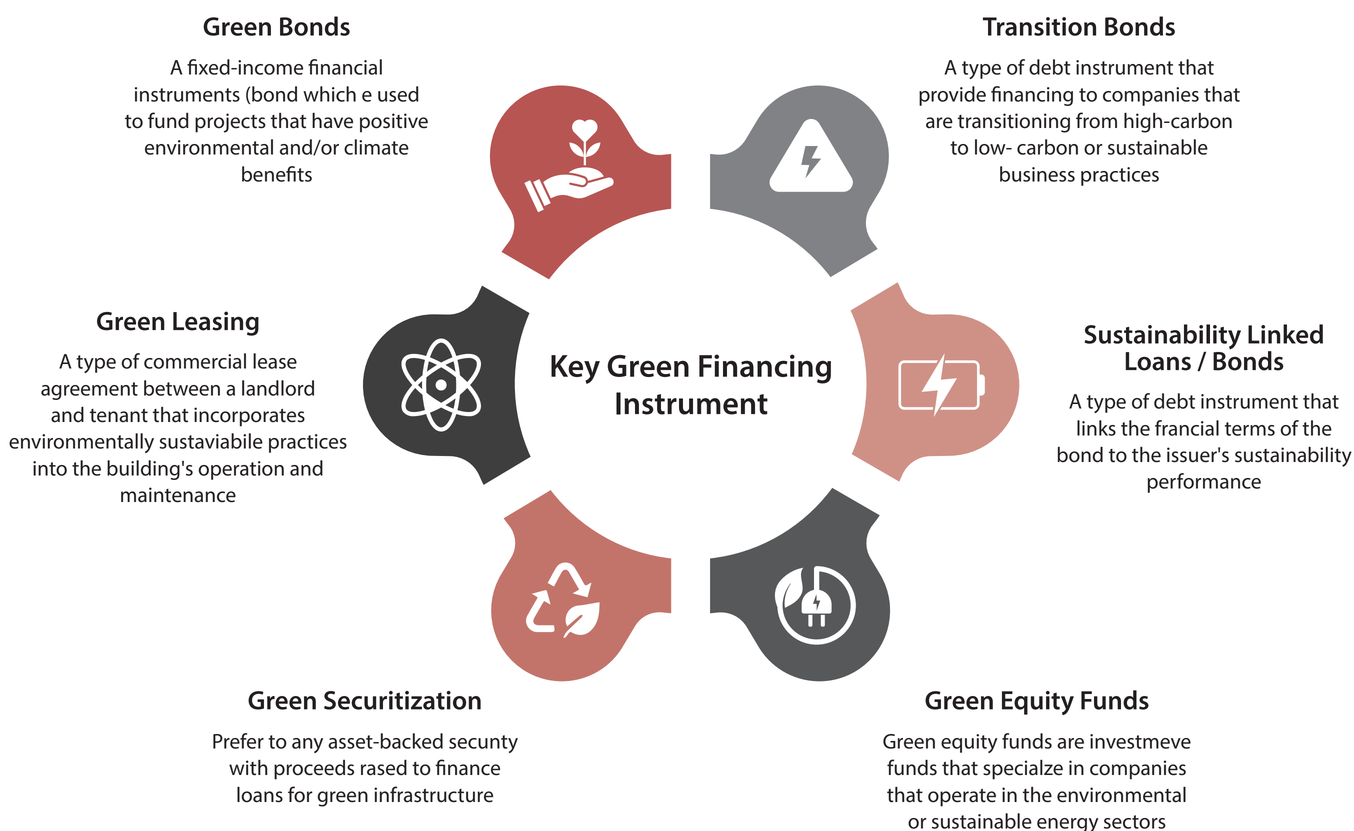


Figure 13.3. Green Finance Ecosystem

The green finance ecosystem consists of the issue of green bonds, transition bonds, green leasing, sustainability-linked loans/bonds, green securitisation and green equity funds. Other green finance initiatives have focused on energy efficiency and mobility. To harness the potential in WASH green finance, development banks like SIDBI and NABARD need to create more awareness programs. The government needs to come up with a long-term policy ensuring the stability of reforms and technology changes to overcome climate risks.

13.6. WASH LENDING – PRODUCT RANGES

13.6.1. WASH Loans to Individuals

A wide range of WASH loan products are offered to individuals (households) include new toilet (₹18,000–₹25,000), toilet-to-bathroom construction (₹33,000–₹5,000), toilet with septic tank and soak pit (₹45,000–50,000), toilet-cum-bathroom and septic tank and soak pit (₹70,000–₹75,000), toilet repair/upgrade (₹10,000–₹15,000), ccosan toilet (₹42,000–₹45,000), accessible family toilet for senior citizens, pregnant women and differently-abled people (₹50,000–₹60,000), piped water connection (₹8,000–₹12,000), piped water connection with pump (₹15,000–20,000), water purifier Candle model (₹3,000–₹6,000) and water purifier RO model (₹10,000–₹22,000). These unit costs are only indicative and subject to vary depending upon the design of the construction of the WASH based on structures, quality of the sanitaryware materials used, distance of the household from the markets, labour and material costs in the regions and type of purchase (whether individual or bulk purchase). Hence, the loan amount shall be fixed as a range (e.g., Union Bank of India and Bank of Baroda have fixed the loan limits for WASH as a minimum of ₹20,000 and a maximum of ₹100,000 and Indian Bank, a minimum of ₹20,000 and maximum of ₹300,000. This will give the flexibility to the borrowers to choose the required loan amount depending upon the WASH infra, they would like to go for.

13.6.2. WASH loans to MSMEs

WASH loans to MSMEs are thrust areas on which lenders should focus and come out with customised products. Banks may be already lending to these MSMEs as many of the WASH service providers in rural and semi-urban locations. These are MSMEs involved in operating water sourcing, water purification, water distribution, collection of septic tank waste, transport and disposal of the waste, downstream units like pumps and meters manufacturing, plumbing materials manufacture and distribution, sanitary-ware, cleaning materials and sanitary napkin making and servicing units and so on. However, they are not mapped under WASH financing to MSMEs and may not be reported exclusively. Hence, lenders shall segregate the data reporting for WASH lending to MSMEs so that they can build this portfolio and harness the full potential under this segment. For WASH MSMEs, there is scope for lending by banks for giving both term loans and working capital facilities.

A recent study (ADB, 2022) by Dalberg Advisors revealed that the financing needs of the WASH MSMEs fall into the 'missing middle', ranging from $15,000 to $600,000. Together, they have an annual debt demand of $2.6 billion. Yet, less than 16% of this WASH MSME capital demand is currently being met by formal finance providers. Equity investors have also been inactive within the water and sanitation sector in India, with less than $66 million invested over the last 10 years.

The major barrier to MSME lending by banks is the lack of collateral to offer to bank as security for their loans. MSMEs do not have formal records or registered with formal institutions and they do not have a credit score. MSMEs are not aware of various bank schemes. The government has come out with various schemes like Micro Units Development & and Refinance Agency' (MUDRA) loans and guarantee schemes to increase the lending to MSMEs. Development agencies shall organise workshops on WASH inviting MSMEs in the WASH supply chain and bankers, which will create an opportunity for both stakeholders to know about each other's needs.

13.6.3. WASH Products for Community-based Organisations

Certain WASH loan products are more suitable for lending to community-based organisations. The WASH social enterprises like water treatment plants or Water ATMs are mostly operated by water user associations. Under these categories, pilots have proven successful and lending to SHGs for operating Water treatment plants has been mainstreamed for scaling up the lending. 'i-Jal' (My Water) women's empowerment program (SWN, 2019) piloted by Safe Water Network in Medak district of Telangana state is a perfect example for this model, wherein SHGs managed the water ATMs successfully.

BOX 13.5. COMMUNITY WATER PURIFICATION PLANTS (CWPP)

APMAS, in collaboration with Water.org is implementing a WASH project in Andhra Pradesh and Telangana to promote community-led water, sanitation and hygiene initiatives. The project focuses on developing community-based water enterprises, encouraging women entrepreneurship and fostering community ownership. APMAS has facilitated CWPPs in Ananthapur, Prakasam and Krishna districts of Andhra Pradesh (two in rural areas and two in urban areas) with costs ranging from ₹2 to 9 lacs, depending on location and the community demand. These plants operate on a blended finance model, comprising government contribution, enterprise contribution (women entrepreneurs utilising group loans), bank loans or loans from Stree Nidhi and APMAS-WASH project contribution (grant). The CWPPs not only addressed the lack of access to purified drinking water, but also provided a lucrative business opportunity for women.

13.6.4. WASH Financing for Urban Local Bodies

13.6.4.1. Municipal bonds

Municipal bonds are instruments of debt issued by local bodies or specialised agencies to finance long-term capital expenditures (construction of water supply networks, stormwater drains and water treatment plants and so on). The investors who invest in the bond will get a specified amount of interest and will get the principal on the date of maturity. Government of India gives an incentive of ₹130 million for every ₹1,000 million raised through municipal bonds. In India, funds were raised through municipal bonds to the tune of 202 million USD (CWAS, 2024) for WASH projects between 2017 and 2023.

13.6.4.2. Green bonds

Green bonds are debt instruments that offer fixed income to investors and are used to fund projects with a positive environmental impact. Ghaziabad Municipal Corporation issued the green municipal bonds in 2021 and raised ₹1,500 million for the construction of a tertiary treatment plant (water recycling). Under Atal Mission for Rejuvenation and Urban Transformation (AMRUT) 2.0, the government offers incentives of ₹100 million to cities for the issuance of ₹1,000 million green bonds.

13.6.4.3. Water and Sanitation Pooled Funds (WSPF)

Big ULBs have better investment grade ratings and they can access the capital market and bank funding easily. But, small and mid-sized ULBs cannot access the capital market as they do not have strong balance sheet and streams of steady income. To address this issue, the Government of India approved a pooling facility. This involves creation of a special purpose vehicle to manage the pooled projects of small and mid-sized ULBs and avail finance from capital markets. The first of its kind was promoted in Tamil Nadu by Government of Tamil Nadu as Tamil Nadu Water and Sanitation Pooled fund.

The government should focus on making ULBs with strong balance sheets and steady income streams by ensuring continuity of the tax revenue policy reforms and strengthening the governance function at the ULBs level. This will enhance the appetite for banks to extend finance to ULBs.

13.6.4.4. Access to Green Climate Fund (GCF)

The GCF (Government of India, 2024) is a financial mechanism of the United Nations Framework Convention on Climate Change (UNFCCC) i established to help developing countries in achieving a paradigm shift to low-carbon pathways and increased climate-resilient development. It focuses on eight key results areas in climate mitigation and climate adaptation. In India, the Ministry of Environment, Forests and Climate Change drives this program and NABARD and SIDBI are Direct Access Entities (DAE). These DAEs can access and manage funds to undertake projects/programs funded by GCF. The ULBs can access GCF financing for mitigation and adaptation projects involving water supply, ground water recharge, waste water treatment and so on. The ULBs are not aware of the available GCF financing facilities and they do not have the capacity to design projects for GCF. Hence, ULBs can start climate action departments within their unit and these departments can network with DAEs and raise funds for projects aiming for low carbon emission and climate resilience.

13.7. WASH AND GENDER

13.7.1. WASH and Gender

Lack of access to water, sanitation, and hygiene impacts mainly women and girls due to biological and cultural factors. Improving WASH access to

expectant mothers reduces the chances of maternal mortality and children with low birth weight. Lack of access to WASH facilities at school or home school hurts children's education, especially for girls. Opportunities for study at home are lost when children have to spend time collecting water or finding a safe place to defecate or urinate in the open; this is a major problem for girls due to the associated burden of menstrual hygiene management. Girls and women are often vulnerable to harassment or violence when they have to travel long distances to bring water, use shared toilets, or go for open defecation. One study (Water.org, 2024) reveals that the attendance of students increased from 58% to 80% after the provision of WASH facilities at school. So, WASH interventions should be always planned with a gender perspective in mind.

BOX 13.6. PASSION FOR THE PRODUCT

Ms Purvi J. Bhavsar, MD and Co-founder of Pahal Financial Services Ltd. (PFSL) recalled her childhood memories in old city of Ahmedabad, where she had grown up in an environment of sharing a toilet by 25 people and sufferings of her mother in fetching water daily from a far-off place. This motivated her to give a push from the top to WASH financing. PFSL has disbursed ₹2,480 million as WASH loans and has built a WASH portfolio of ₹1,410 million, which constitutes 7% of their total loan portfolio as of March 2024, which is a great example of mainstreaming the product.

13.7.2. WASH and Livelihoods

With access to WASH facilities at home, women need not spend more time traveling to bring water and this time saved shall be utilised for productive work at home or farm, which will improve the productivity of the livelihoods. Improved access to water can enable a woman to increase the area under cropping and help improve her family's food security. Women's involvement in managing the community-based water purification plants will lead to their empowerment. Study (Water.org, 2024) reported that for every year a girl stays in a school where WASH facilities are taken care of, her income as an adult is expected to increase by 20%. Access to WASH will improve the livelihoods of vulnerable communities.

13.8. CLIMATE SMART WASH

13.8.1. Impact of Climate Change on Water and Sanitation

Too little, Too much, and Too dirty water have become the order of the day due to the climate change-induced risks. Too little (frequent droughts), too much (floods) and too dirty water (effluent water getting mixed with water bodies without being treated) cause a big economic impact and disrupt vulnerable people and their livelihoods. Hence, climate-resilient water and sanitation products and services should get attention of lenders.

13.8.2. Climate-resilient WASH Products

That 39% (WWF-India, 2019) of the Indian Bank's portfolio is exposed to sectors that face high levels of operational water risks. Climate-resilient WASH products have the potential to mitigate the climate

BOX 13.7. PRODUCT INNOVATION–A CONTINUOUS JOURNEY IN SANGHAMITHRA RURAL FINANCIAL SERVICES (SRFS)

SRFS started WASH financing in 2011 with technical assistance and support of Water.org. First, it started with the basic WASH loan products viz., toilet construction, water tap connection, water filter, water storage tank, water pump. Then, SRFS had a setback in their earlier offering i.e., financing toilet construction without water facility, the toilets remained unused. Hence, SRFS introduced a WASH combo product of toilet construction plus water connection to the toilet. The demand also came from the community for renovation and upgrades–for replacing tiles, roofs or doors, or converting to western-style toilets, or converting as accessible to differently-abled persons and elders. SRFS launched the WASH loan product of roof rain water harvesting (RRW) in Kolar district of Karnataka. SRFS's WASH loan portfolio stands at ₹300 million, which is 10% of its total loan portfolio. SRFS's continuous journey of product innovation deserves a big applause.

change risk for the financial institution's portfolio. For example, let us assume that the bank has lent for agricultural activities, which is always risky as most of our agriculture depends upon monsoon. This agricultural portfolio can be made climate resilient if the bank chooses to fund climate resilient water management technology integration in its funding such as financing for micro irrigation like drip irrigation or sprinkler when financing for agriculture, will mitigate the climate change risk in the portfolio.

The common climate resilient WASH products include solar-powered water pumps, rooftop rainwater harvesting systems, faecal sludge management systems, wastewater treatment plants, flood resilient ecosan toilets and borewell powered by solar panels. The MSMEs involved in offering these climate resilient WASH products have a huge impact on climate resilience and they need to be nurtured through special lending schemes.

Some financial institutions like Nabsamruddhi Finance Limited have already launched climate-resilient WASH products for rooftop rainwater harvesting and many MFIs/banks are designing climate-resilient WASH products.

13.9. TECHNICAL ASSISTANCE FOR PROMOTING WASH LENDING

13.9.1. Water.org

Water.org has been instrumental in building the WASH lending market in India since 2005. Water.org offers market-driven financial solutions to end the global water and sanitation crisis by collaborating directly with financial institutions (primarily through MFIs and banks) that serve people at of the bottom of the pyramid. It also works with development agencies, governments and other partners to influence public policy and practice changes that make more funds available for water and sanitation solutions, at local, national and global levels. Water.org extends support through technical assistance, capacity building, IEC materials and training. It also helps financial institutions design and operationalise water and sanitation lending.

13.9.2. FINISH Society

The Financial Inclusion Improves Sanitation and Health (FINISH) Society based in Lucknow has done pioneering work in water and sanitation. The FINISH Society promoted sanitation structures at the household level through microfinance by MFIs and banks. It continues to scale up WASH in communities program, with a focus on ODF sustainability, retrofitting, regular usage and safe technology of toilets.

13.9.3. India Sanitation Coalition (ISC)

The ISC follows a multi-stakeholder approach to find sustainable solutions for sanitation by partnering with corporates, NGOs, financial institutions, government, donors, bilateral and multi-lateral organisations and WASH Specialists. Light House Initiative (LHI) is a joint initiative by ISC, government and the corporate sector.

Table 13.7. Technical Assistance Provided by Water.Org

Some of the TA programs provided by water.org	Why is it required ?
Valuation and Forecasting Support	Without proper valuations and forecasting, SMEs can't approach investors for fund raising. Even debt partners need to understand future cashflows projections for underwriting.
Development of financial modules on MSME financing instruments/schemes/ subsidies via intermediaries.	Startups are not aware of Central and State Govt. subsidies, incentives and MSME schemes available for WASH segment.
Customized impact assessment to quantify the impact on climate/water and gender	Impact focused funds require quantification of impact
Pilot support to select MSMEs that are investable and create an impact at household level.	Pilot support with utilities helps MSMEs to establish proof of concept. Successful pilots translate in future orders from utilities.
ESG support	ESG frameworks are important to sustainable investing
Marketing/IEC support	
Networking support/ business expansion support	

13.10. REGULATORY POLICY SUPPORT FOR WASH LENDING

13.10.1. Regulatory Policies of RBI

Recognising the need for giving a push to the WASH sector financing by banks, RBI brought the WASH finance under the Priority Sector Lending (PSL) category in 2015. Bank loans to the social infrastructure sector as per limits (RBI, 2020) prescribed below are eligible for priority sector classification.

13.10.2. A Part of RBI Circular 2020

13.10.1.1. Social infrastructure

Clause 13.1: Bank loans up to a limit of 50 million per borrower for setting up schools, drinking water facilities and sanitation facilities including construction/refurbishment of household toilets and water improvements at household level, etc. In the case of Urban cooperative banks, the above limits are applicable only in centres having a population of less than one lakh.

Clause 13.2: Bank loans to MFIs extended for on-lending to individuals and also to members of SHGs/JLGs for water and sanitation facilities subject to the criteria laid down in paragraph 21 of these Master Directions, not applicable to RRBs, UCBs and SFBs.

However, RBI has not mentioned any sub-limits for WASH lending within the priority sector like how RBI has given sub-limits for agriculture i.e., 18% to direct agriculture.

IN 2021, RBI gave permission for SHG loans given under NRLM to be used by them for the construction of toilets. This helped NRLM, which has a wider network of SHGs across India expand the WASH lending to SHGs.

13.10.3. Regulatory Policy of Securities and Exchange Board of India (SEBI)

The regulations (SEBI, 2015) have been notified by SEBI for the issue and listing of Municipal Debt Securities. The main clauses include the following.

- The issuer has not defaulted in repayment of debt securities or loans obtained from banks or financial institutions, during the preceding three hundred and sixty-five days.
- The issuer shall obtain a credit rating from at least one credit rating agency registered with the board, which shall be disclosed in the offer document or placement memorandum, as applicable.
- The issuer has surplus income as per its income and expenditure statement in any of the immediately preceding three financial years
- The minimum subscription shall not be less than 75% of the issue size. If non-receipt of the minimum subscription, all application money should be refunded within 12 days from the closure of the issue.

SEBI regulations created an enabling atmosphere for the ULBs to raise resources from the capital market.

13.11. LESSONS FROM THE EXPERIENCE/OBSERVATIONS

- Even though there is a myth among lenders that the demand for toilet loans is saturated due to the announcement of 100% ODF status, the field situation indicates that more demand is coming for toilet repairs and upgrades of WASH facilities e.g., adding water connection and adding a bathroom.
- Awareness programs on WASH lending are being organised at first for clients and staff but afterwards it is not continued. The awareness programs should be repeated at least once every half year to help in demand generation.
- Public sector banks shall post an Exclusive Product Manager-WASH at their head office to mainstream the WASH product in their regular line of business like how private sector banks do it. Public sector banks shall design exclusive WASH loan products to drive portfolio growth.
- The units of manufacturing, selling and servicing in the WASH sector have not been integrated across its value chain like what happened in the solar energy space and this integration in the solar energy sector enabled increased adoption of renewable energy sources. Following the model of the solar energy sector, exclusive players/intermediaries shall dive in to integrate the manufacturing, selling and servicing units in the WASH value chain, so that WASH lending is scaled up.
- Some banks have restricted the WASH loan products only for their existing customers who have availed of the income generation loan as a first loan. WASH loan is not perceived in the right perspective by many bankers and they think that WASH loan is a consumption loan. The bank's head office should not classify WASH loans as consumption loans. But, should be deemed to be an income-enabling loan. WASH loan enables access to water and sanitation in the household, resulting in increase in productivity

and reduction in health costs for the members of the household.

- There is a misconception that WASH loan needs are a one-time affair. Only conventional WASH loan products are offered by financial institutions. WASH needs more operational and maintenance needs. Financial institutions shall come out with innovative WASH loan products that will cover both the capital cost for installing the WASH facilities and the operational and maintenance costs for managing them as usable assets.
- For WASH loan products, components like awareness creation, technical support for designing and building WASH structures and monitoring the end use of the loan are to be ensured while designing the product launch. For these non-financial services, lenders can take the support of development agencies offering technical assistance services or NGOs or Community-Based Organisations (CBOs), federations of SHGs operating in their areas.
- The Lighthouse Initiative aims to ensure the sustainable management of solid and liquid wastes in villages with the active involvement of the village-level WASH committee. SHGs played a vital role in managing the solid and liquid waste management facilities. As the community depended upon convergence funding, there were some delays in receiving the funds. Hence, a huge opportunity is available for banks to step in to finance SHGs for sustainable management of waste-to-wealth units.

13.12. RISKS IN WASH LENDING

13.12.1. Policy Risk

Water, sanitation and hygiene are basic services that come under state laws. Even though the government of India may introduce certain policy reforms for the WASH sector, their ultimate implementation depends upon the state government's acceptance of such reforms. Hence, the convergence between central and state is always a challenging one, WASH policy risks are significant which limits commercial finance. A partnership with a multi-lateral organisation will mitigate this risk to a certain extent.

13.12.2. Financial Viability Risk

The major water and sanitation-related projects are handled by ULBs and their revenue streams are 3Ts viz., taxes, tariffs and transfers. These 3Ts are outside the control of these ULBs and the sudden changes in this mix of 3Ts affect the financial viability of the WASH projects. For example, a simple change may be a reduction in the tariff for the water utilities will drastically reduce the income stream of the unit and it may become financially unviable. The technical support providing agency shall insist on the government signing a commitment not to alter the 3Ts during the project implementation period.

13.12.3. Climate Change Risk

The climate change risk is the most important and impacting risk as it will lead not only to economic loss but also to disrupting livelihoods and social aspects like displacement of vulnerable people and large-scale migration. The lenders can focus on promoting climate-resilient WASH products.

13.12.4. Credit Default Risk

This is the inherent risk to any lending by financial institutions. Hence, lenders should evolve suitable due diligence/processes so as to filter out the credit default risk at the sourcing stage itself to the extent possible. For example, WASH loans to individual households being a low value loans, instead of giving as an individual loan, the SHGs/JLGs or federations of SHGs/JLGs or NGO or BC partners may be involved in sourcing the right borrowers and following up with them for recovery also.

13.12.5. WASH Infra Operational Risk

WASH assets are rarely transferable, rarely appreciated in value, and also provide limited handover/exit benefits to investors. WASH infra assets have a possibility for operational risk. The instruments like credit guarantee by government or multi-lateral organisations will mitigate this risk.

13.13. CHALLENGES AND WAY FORWARD

13.13.1. Demand Side

Table 13.8. Challenges and Way forward (demand side)

Sl.no	Challenges	Way forward and Recommendations.
1	Awareness of the WASH loan product availability to clients is very low.	Awareness programs (on the lines of e-learning pilots tested by Satin Creditcare Network Ltd. in Bihar) targeting the group members can be scaled up by the lenders in partnership with the WASH-promoting organisations.

Sl.no	Challenges	Way forward and Recommendations.
2	As the officers at the branch level are often transferred, the newly joined branch staff are not aware of the potential of WASH lending.	Training of trainers programs for RSETIs shall be organised regularly once a half year with the technical support of promoting organisations like Water.org as they have developed a lot of training materials for bankers. RESETIs shall mainstream WASH modules in their regular training programs and conduct one program every quarter for the specified persons (WASH) of BCs partners, office-bearers of the federation of SHGs and new branch staff so that the demand creation process will be on an ongoing basis.
3	Climate change risk is impacting and resulting in a huge loss to the livelihoods of the poor and disrupting people.	NABARD shall initiate a multi-stakeholder approach involving state governments, local NGOs and agricultural universities and research institutes to identify the vulnerable districts and shall take up a project to promote the adoption of climate resilient water products through CBOs.
4	Water treatment plants are maintained by ULBs. Their governance structure and lack of professional management of plants make them unattractive for banks to fund WASH maintenance needs.	The government should improve the capacity of ULBs in terms of its governance structure to ensure a process-oriented and transparent approach also the water treatment plant management may be entrusted to a special purpose vehicle (SPV) with a dedicated professional team, which will help the WASH projects turn as bankable units.
5	Developments have taken place in the use of technology for WASH—i.e., robotics in sewage cleaning and IoT (Internet of Things) in monitoring toilet cleaning and so on. These are all capital-intensive and require huge funding for scaling up.	Awareness level about the use of technology in WASH is limited. These high-end technology use— demos can be arranged to disseminate the information to a larger number of people so that it will increase the demand for such products. Technology adoption will also result in improved efficiency of WASH infra and will help in real-time monitoring of the use of assets.
6	Funding support for promoting organisations like NGOs and CBOs has stopped for promoting WASH after achieving the 100% ODF status. Hence, training programs are limited.	NABARD shall take the lead responsibility and nominate a few NGOs at the district level under the umbrella support of large promoting organisations like APMAS, PRADAN, DHAN Foundation to conduct the WASH training at least every quarter or half year to make the WASH lending as a demand-driven program.

13.13.2. Supply-side Challenges

Table 13.9. Challenges and Way forward (supply side)

Sl.no	Challenges	Way Forward and Recommendations.
1	Dedicated capital for WASH is missing to promote WASH lending by small MFIs, which have more access to remote villages, where the need is more for WASH lending.	A dedicated WASH promotion fund shall be created at NABARD/SIDBI to make available the relatively cheaper loan capital to small and medium MFIs to lend to WASH and WASH-related MSMEs.
2	Banks are not giving priority to WASH lending even though it is under the PSL category as per the RBI classification.	RBI shall fix a sub-limit for WASH lending within the PSL category like how it has fixed for agriculture (18% of Adjusted Net Bank Credit or ANBC). Even a 1% of ANBC to be achieved by banks by FY 2027 and 2% by FY 2030, will go a long way in achieving SDG 6–Clean Water and Sanitation for all.
3	In the NABARD's refinance circular, there is a mention that as a concessional refinance rate is given to banks, it should be factored in while fixing the interest rate for the ultimate borrower by the banks. However, many banks offer WASH loans at the same rate	Even though the interest rate is deregulated, RBI/NABARD/SIDBI shall prescribe a certain basis point reduction – maybe 0.25% or 0.5% as a benchmark for WASH loans, so that banks and MFIs will offer WASH

Sl.no	Challenges	Way Forward and Recommendations.
	as they do lending for income generation loans. A higher cost of capital at around 24% may prevent vulnerable people from taking the loan. However, they only live in vulnerable areas and are more susceptible to all climate-related risks that are induced by water.	loans at a lower rate (cheaper by 0.25% or 0.5%) than their normal income generation loans.
4	Public sector banks with a wider network of rural branches have not given enough thrust to the WASH sector lending.	RBI shall include the WASH lending performance by banks in their regular review of Managing Directors and Chief Executive Officers of banks so that the top management's focus will be on WASH.
5	WASH-related MSMEs have huge loan demand and most of them remain invisible to the banks and financial institutions.	SIDBI shall organise meetings wherein it brings together both WASH MSME owners and banks and also ensure technical support through promotional agencies like Water.org.
6	Mega WASH projects involve multiple stakeholders and they need blended finance. Still blended finance is new to commercial banks.	Apex training institutes like BIRD, CAB, and NIBM can organise training programs for senior bankers on blended finance with the support of multi-Lateral organisations, development finance institutions, and impact investors.
7	Banks and financial institutions are hesitatant to give out water and sanitation loans, as these loans are small in value and are unsecured.	The government of India can create a guarantee fund for WASH lending like how it has done for MUDRA loans or loans to FPCs . This will encourage the banks and financial institutions to take risks to lend to the WASH sector.
8	Senior bankers in the public sector banks are not aware of the latest innovations in the WASH field or of the players in the WASH ecosystem, which prevents them from entering into partnerships with innovative bankable ventures.	Public sector banks may nominate their senior executives to the WASH sector level meets/ conferences/workshops organised at the national level/international level, so that the senior team will be exposed to the latest developments in the WASH sector and they can seize the partnership opportunities to increase the WASH lending.
9	NABARD provides refinance to NBFCs, MFIs, state cooperative banks and RRBs for WASH lending, but not for commercial banks.	NABARD shall include commercial banks also as eligible institutions to get refinance facilities at an attractive rate for their WASH lending.
10	The agriculture sector uses nearly 72% of total water withdrawal and the financial institutions cannot make an impact at the community level if the climate-resilient products are offered only at the individual level.	Financial institutions shall partner with FPCs to implement the climate-resilient WASH product solutions on a cluster level so that this will create an impact at the community level. Later financial institutions may scale up this cluster approach to other clusters.

13.14. CONCLUSION

In India, SBM Grameen and Jal Jeevan Mission (JJM) have led to the massive creation of WASH infrastructure, which has transformed the WASH landscape in India, but it also throws open the challenges for maintenance of such WASH infrastructure, for which funding is not available on a sustainable basis. Even though the demand study (Dalberg, Asian Development Bank and Water.org, 2020) reveals that the total market size for sanitation lending in India is ₹ 820 billion, financial institutions are yet to harness this huge unmet demand. To improve the ecosystem for scaling up the WASH lending by financial institutions, 16 specific recommendations have been suggested from the feedback received during the key informants' interviews and these will address both the demand side and supply side challenges and help the financial institutions build the WASH portfolio in the years ahead, and will impact the society at large, especially it will make the vulnerable people climate resilient.

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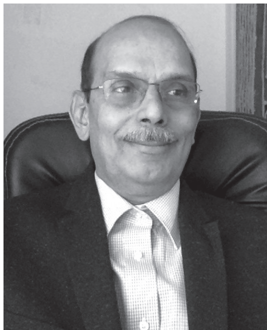

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The Inclusive Finance India Report is a comprehensive and well-researched document on cumulative progress made in India towards reaching the ambitious goal of universal Financial Inclusion. The report covers a review of the performance of diverse institutional structures and delivery models in inclusive finance – the commercial banks, the new specialized banks, Co-operative Banks, non-banking finance companies, self-help groups, microfinance institutions, banking agents and fintechs.

The report covers the initiatives in the digital technology that help overcome last-mile delivery challenges and provides an overview of the new initiatives and breakthroughs in digital financial inclusion. This publication tracks the performance of programmes and schemes of the Government to promote Financial Inclusion, as well as contributions and new initiatives of the ecosystem players such as investors, academic and research institutions, large apex institutions and regulators. This edition of the report also provides an overview of specialized areas of Artificial Intelligence and its relevance to the Financial Inclusion, Unified Payment Interface (UPI), Green Finance, Gender aspects in Financial Inclusion, update on MSME, Micro-Insurance and Pensions. Also, dashboard on Financial Inclusion (Antardrishti) and water and sanitation financing are the critical chapters in this edition of Inclusive Finance India Report.

The report aims to inform the policy development process on inclusive finance, highlight the positive impact of various institutions, models and initiatives and identify and highlight policy and practice gaps.

The report is authored by multiple experts in the sector and researchers engaged in the Financial Inclusion landscape. The Inclusive Finance India Report has earned its place at the top reference document on the annual trends and progress of financial inclusion covering as wide-ranging data-based analysis of all streams and models of financial inclusion; a must-have for every stakeholder interested and involved in Financial Inclusion in India.

ISBN: 978-81-955245-6-3

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