



BUILDING FOR RESILIENCE, INNOVATION, COOPERATION AND SUSTAINABILITY

DIGITAL PUBLIC INFRASTRUCTURE: ENABLING WOMEN-LED DEVELOPMENT

**Evidence from India and practical pathways for
BRICS cooperation on gender-responsive
Digital Public Infrastructure.**



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FOREWORD

A strategic report highlighting role of Digital Public Infrastructure in advancing inclusion, innovation, and sustainable economic growth.

India's BRICS Presidency in 2026 comes at a defining moment in the global digital transformation journey—one in which scale and speed must go hand in hand with inclusion, trust, resilience, and shared prosperity. Under India's Presidency of the BRICS Women's Business Alliance (WBA), this imperative assumes even greater significance, as digital innovation increasingly serves as a powerful enabler of women's economic participation, entrepreneurship, and leadership.

It is against this backdrop that Digital Public Infrastructure Enabling Women-Led Development takes shape. This knowledge paper examines how India's Digital Public Infrastructure (DPI) ecosystem is expanding women's access to financial services, public and private sector opportunities, skilling, healthcare, entrepreneurship, and economic participation. It also looks beyond digital access to the lived realities of adoption, recognising the structural, social, and economic factors that continue to influence women's participation in the digital economy.

India's DPI journey represents one of the most significant examples of interoperable digital infrastructure being developed and deployed at population scale. Over the past decade, India has built a broad ecosystem of platforms—including Aadhaar, UPI, DigiLocker, UMANG, PFMS, DIKSHA, and e-Sanjeevani—supporting digital identity, payments, document management, public service delivery, education, healthcare, and governance.

For millions of women, these digital public systems have helped improve convenience and accessibility, while creating new pathways to financial inclusion, public services, education, healthcare, skilling, entrepreneurship,

FOREWORD



and livelihoods. Secure digital identity, direct benefit transfers, access to essential documents, digital payments, and online services can strengthen women's economic agency and enable greater participation in the formal and digital economy.

India's experience also demonstrates that DPI is not simply a technological proposition. Its transformative potential depends on complementary investments in digital literacy, affordable connectivity, multilingual and accessible interfaces, online safety, data protection, and trusted digital services. Sustained collaboration among governments, industry, civil society, and communities will therefore be essential to ensuring that digital transformation is inclusive, responsible, and sustainable.

I would like to acknowledge EY, the Knowledge Partner to this publication, for its valuable contribution and for bringing rigorous research, analysis, and insights to this study. I also recognise the contribution of the Federation of Indian Chambers of Commerce and Industry (FICCI) and its partner organisations—including AFARM, PRADAN, ALVL Foundation, DigiSwasthya, Mushroom Development Foundation, various CSR Foundations, participating manufacturing units, and others—for supporting the mobilisation of diverse grassroots perspectives and experiences. Their collective efforts have enriched the study and strengthened its breadth and relevance.

As BRICS nations advance an agenda of inclusive and sustainable growth in an increasingly digital world, this knowledge paper offers valuable insights into how Digital Public Infrastructure can help translate policy ambition into greater opportunity for women. It underscores that when equity, accessibility, safety, trust, and inclusion are embedded from the outset, DPI can serve as a powerful bridge between public policy and women's economic empowerment.

I hope this publication contributes meaningfully to the BRICS dialogue, encourages greater exchange of knowledge and best practices among member countries, and catalyses deeper collaboration on inclusive digital transformation. Together, we can work towards a digital future in which every woman has the opportunity to participate, prosper, and lead.

Avarna Jain

Global Chairperson, BRICS Women's Business Alliance 2026





FOREWORD

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Digital Public Infrastructure (DPI) has emerged as one of the powerful development innovations of our time. By combining digital identity, interoperable payments, consent-based data exchange and sector-specific platforms, DPI is redefining how Governments, businesses and citizens interact. India's DPI journey demonstrates that open, trusted and scalable public digital rails can accelerate inclusion, improve service delivery, reduce transaction costs and unlock innovation at population scale.

This EY-FICCI report examines DPI through a gender lens, focusing on how digital systems can strengthen women's access to identity, finance, healthcare, education, livelihoods and public services. It places India's experience within the wider BRICS context, where emerging economies are seeking inclusive, resilient and locally relevant models for digital transformation.

India's DPI ecosystem, anchored in Aadhaar, UPI, DigiLocker, Direct Benefit Transfer systems and the Ayushman Bharat Digital Mission, shows how foundational infrastructure can move beyond digitisation to create measurable development pathways. These systems have enabled citizens to access financial services, receive public benefits directly, authenticate documents, transact digitally and engage with public services more efficiently. For women, these capabilities are especially significant because they can reduce dependence on intermediaries, improve access to entitlements, support financial inclusion and create new pathways for participation.

At the same time, access alone may not guarantee empowerment. The true promise of DPI lies in meaningful, safe and independent use. Women's ability to benefit depends on device ownership, digital literacy, affordability, privacy, trust, grievance redressal, social norms and institutional responsiveness. A gender-responsive DPI agenda must therefore look beyond platform scale and



transaction volumes to whether women can use digital services with confidence, control and dignity.

The BRICS grouping provides a timely platform to advance this agenda. BRICS nations share the scale of development challenges as well as the opportunity to design digital systems that are inclusive, interoperable and locally relevant. Collaboration can help countries exchange lessons on digital identity, payments, data governance, women-led enterprise, digital skilling, privacy safeguards and last-mile delivery models. It can also support common principles for responsible DPI adoption, ensuring that innovation is anchored in trust, inclusion and public value.

From EY's perspective, the next phase of DPI-led transformation will be shaped by three priorities. First, digital infrastructure must be designed with inclusion at its core, especially for women, rural communities and underserved groups. Second, public-private collaboration must translate digital rails into user-centric solutions that are simple, secure and accessible. Third, measurement must shift from enrolment and access to outcomes, including active use, service quality, women's control over digital resources and the ability of digital systems to improve everyday decision-making.

As digital infrastructure becomes central to the future of governance, markets and society, the imperative is clear: DPI must work for everyone. When designed responsibly and inclusively, it can bridge divides, expand opportunity and enable women to participate more fully in economic, social and civic life. This is the promise the report explores and the agenda that must guide the next decade of digital transformation.

We trust this report contributes to a deeper understanding of how DPI can become a catalyst for women-led development across India, BRICS and the Global South. Drawing on secondary research and primary insights from practitioners, implementing organisations and women beneficiaries, it offers evidence, case studies and policy insights for governments, industry leaders, development institutions, civil society and innovators working to build digital ecosystems that are efficient, scalable, equitable and empowering.

Rahul Rishi

Partner - EY



ABBREVIATIONS

Abbreviation	Full form
AA	Account Aggregator
ABDM	Ayushman Bharat Digital Mission
ABHA	Ayushman Bharat Health Account
AePS	Aadhaar Enabled Payment System
API	Application Programming Interface
BBPS	Bharat Bill Payment System
BC	Banking Correspondent
BRICS	Brazil, Russia, India, China, Egypt, Ethiopia, Indonesia, Iran, Saudi Arabia, South Africa and UAE
CBSE	Central Board of Secondary Education
CoWIN	COVID-19 Vaccine Intelligence Network
CSC	Common Service Centre
CGTMSE	Credit Guarantee Fund Trust for Micro and Small Enterprises
DBT	Direct Benefit Transfer
DEPA	Data Empowerment and Protection Architecture
DIKSHA	Digital Infrastructure for Knowledge Sharing
DPI	Digital Public Infrastructure
DPG	Digital Public Goods
ESIA	Unified System of Identification and Authentication
ESIC	Employees' State Insurance Corporation
EPFO	Employees' Provident Fund Organisation
FASTag	Electronic toll collection system using Radio Frequency Identification
FICCI	Federation of Indian Chambers of Commerce and Industry
FI-Index	Financial Inclusion Index
G2P	Government-to-Person
G2Px	Government-to-Person Payments Exchange
GDP	Gross Domestic Product
GST	Goods and Services Tax
JAM	Jan Dhan–Aadhaar–Mobile
KYC	Know Your Customer

Abbreviation	Full form
LGPD	Lei Geral de Proteção de Dados, Brazil's General Data Protection Law
MCM	Merit-cum-Means
MoSPI	Ministry of Statistics and Programme Implementation
MSME	Micro, Small and Medium Enterprises
NFHS	National Family Health Survey
NGO	Non-Governmental Organisation
NITI Aayog	National Institution for Transforming India
NPA	Non-Performing Asset
NSP	National Scholarship Portal
OCEN	Open Credit Enablement Network
ONDC	Open Network for Digital Commerce
OPD	Outpatient Department
OTR	One Time Registration
PIB	Press Information Bureau
PIPL	Personal Information Protection Law
PM eVIDYA	Pradhan Mantri eVIDYA
PM-JAY	Pradhan Mantri Jan Arogya Yojana
PMGDISHA	Pradhan Mantri Gramin Digital Saksharta Abhiyan
PMJDY	Pradhan Mantri Jan Dhan Yojana
PMMY	Pradhan Mantri Mudra Yojana
PMMVY	Pradhan Mantri Matru Vandana Yojana
PM SVANidhi	Pradhan Mantri Street Vendor's AtmaNirbhar Nidhi
POPIA	Protection of Personal Information Act (South Africa)
PPP	Public Private Partnership
RBI	Reserve Bank of India
RBIH	Reserve Bank Innovation Hub
RuPay	India's domestic card payment network launched by the National Payments Corporation of India
SC/ST	Scheduled Caste / Scheduled Tribe
SBP	Russia's Faster Payments System
SEBI	Securities and Exchange Board of India



Abbreviation	Full form
SHG	Self-Help Group
SIDH	Skill India Digital Hub
SIM	Subscriber Identity Module
ULI	Unified Lending Interface
Udyam	Official Government of India registration system for Micro, Small and Medium Enterprises
UMANG	Unified Mobile Application for New-age Governance
UPI	Unified Payments Interface
UIDAI	Unique Identification Authority of India



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EXECUTIVE SUMMARY



EXECUTIVE SUMMARY

DPI as an Architecture for Women's Empowerment

Evidence from India and practical pathways for BRICS cooperation

India's experience demonstrates that Digital Public Infrastructure (DPI) can advance women's empowerment most effectively as a connected inclusion architecture. Digital identity, bank accounts, payments, benefit transfers, authenticated records and sector platforms reduce procedural friction and expand choice; trusted frontline institutions translate access into regular use; and women-responsive design strengthens the conditions for safe, sustained and increasingly independent participation.

This report examines how India's DPI ecosystem is enabling women's access to financial services, public services and formal economic pathways, and identifies lessons that BRICS members can adapt to their own priorities and institutional contexts. It combines authoritative secondary evidence with insights from a select cohort of participants across nine purpose-built primary-research instruments covering women users and non-users, frontline facilitators, financial institutions, employers, healthcare providers, civil-society organisations and industry. Participating stakeholder groups were analysed separately using question-specific valid bases, allowing national trends to be interpreted alongside practical experience and institutional perspectives. The primary findings are exploratory and indicative rather than statistically representative.

What the evidence shows

Population-scale foundations are firmly established. NFHS-6 reports that 89.0% of women aged 15–49 have and themselves use a bank or savings account, up from 78.6% in NFHS-5; women's ownership and use of mobile phones increased from 53.9% to 63.6%, while the share who had ever used the internet rose from 33.3% to 64.3%. As of 10 June 2026, women represented 32.58 crore of 58.45 crore PMJDY beneficiaries. Together with the RBI Financial Inclusion Index reaching 67.0 in March 2025, these trends show an ecosystem progressing from account access towards broader usage and quality.

DPI is converting access into frequent, direct and more convenient use. Among participating women with valid service-use responses, a majority used UPI and DBT,



followed by digital services at least weekly. A large majority reported avoiding travel, and most participants able to compare transaction time reported a saving. Among participating DBT users, majority reported receiving the full amount without deductions and reported direct receipt without an intermediary as improvements over earlier methods. These indicative findings suggest that interoperable identity, account and payment rails can make routine transactions and benefit delivery more direct, accessible and time-efficient.

Trusted assistance multiplies the value of digital infrastructure. Participating Banking Correspondents and Banking Sakhis consistently reported increased demand for AePS services among women, while participating bank officials viewed BC/Sakhi networks as effective or highly effective. The same pattern was evident in digital health: participating eSanjeevani users generally found access easy or very easy, and those providing valid responses consistently reported a reduced need to visit a higher-level facility. These stakeholder perspectives indicate that DPI creates the service channel, while frontline facilitation helps make it usable, acceptable and capable of supporting greater independence after initial assistance.

DPI is also strengthening the administrative pathways surrounding work, enterprise and rights-linked services. A majority of participating manufacturing employers used Aadhaar-enabled onboarding or KYC, digital wage credit and EPFO/ESIC digital services; Majority of participating FICCI member companies reported active women-focused digital-empowerment initiatives. Among participating self-employed women and microentrepreneurs, most used UPI and all reported operating their bank accounts fully or mostly independently. Across the wider beneficiary cohort, large majority reported full or substantial account independence, high or very high financial confidence, and trust in data privacy and security. These exploratory findings indicate that DPI can lower procedural friction and expand access to resources and opportunities; employment, income, enterprise performance and household decision making remain wider outcomes shaped by DPI alongside skills, markets, mobility, care responsibilities and institutional context.

Priorities for India and BRICS

The next phase of India's DPI journey focuses on deepening the quality of participation, ensuring that women can use services regularly, safely and independently. National evidence continues to show rural urban differences in women's mobile access and internet exposure, while the primary research highlights



family support and trusted local hand-holding as practical adoption enablers. The report therefore identifies five priorities:

Five priorities for women-centred DPI	
01 Connected journeys Link identity, accounts, payments, transfers, records and sector platforms, with assisted and offline fallbacks.	02 Trusted assistance Equip Banking Sakhis, SHGs, health workers and frontline networks while supporting independent use.
03 Safety, privacy and control Embed local-language interfaces, usable authentication, fraud safeguards, account recovery and grievance redressal.	04 Economic opportunity Integrate credentials, skilling, employment, wage receipt, social protection, enterprise finance and markets.
05 Depth of participation Track regular use, successful completion, assistance required, trust, user control and grievance resolution — not scale alone.	Common design principle Move from access and scale toward meaningful, safe and independent participation by women.

Note: For BRICS, the practical opportunity is structured, country-led cooperation rather than a uniform technology model. Members can nominate national focal points, select priority women-centred service journeys, convene government–industry–civil-society partnerships, and use an Align– Demonstrate– Learn– Scale cycle to test solutions, exchange implementation evidence and scale those meeting agreed inclusion, safety and performance thresholds. This would translate India's experience into an adaptable BRICS agenda: connected digital rails, trusted delivery institutions and women-responsive design working together to expand meaningful participation and agency.



1 CHAPTER

The Transformative Power of India's Digital Public Infrastructure (DPI)

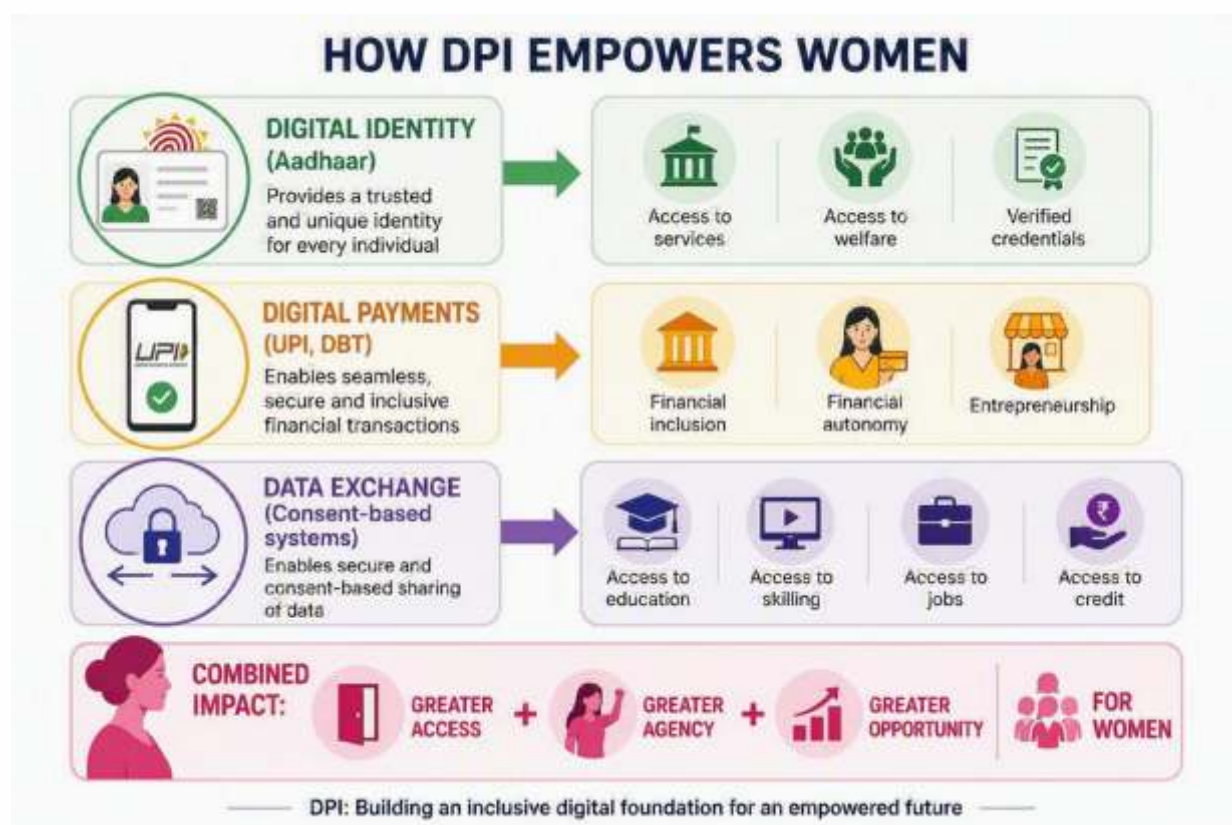


1 CHAPTER

The Transformative Power of India's Digital Public Infrastructure (DPI)

1.1 Introduction to Digital Public Infrastructure

Digital Public Infrastructure (DPI) is increasingly being recognized as a critical enabler of women empowerment. By providing trusted digital identity, inclusive payment systems, and secure mechanisms for data exchange, DPI helps address longstanding barriers that often limit women's access to public services, financial resources, education, employment, and entrepreneurship opportunities. In doing so, it strengthens and expands women's economic participation, and enables more equitable access to opportunities and benefits.



At its core, DPI refers to foundational digital systems that support and accelerate the delivery of services and functions across society, in both public and private sectors. These are typically large-scale, population-wide platforms that underpin digital public

services, such as, identity systems (e.g., India's Aadhaar), payment platforms (e.g., Unified Payments Interface or UPI), and data-sharing frameworks (e.g., Estonia's X-Road). DPI enables the efficient delivery of essential services at scale. A country's DPI ecosystem may be built using a mix of proprietary and open-source solutions, including Digital Public Goods (DPGs).

At the core of India's DPI ecosystem is India Stack, a comprehensive suite of open APIs and digital public goods that provides a robust foundation for innovation and service delivery. It enables governments, businesses, startups, and developers to build seamless, paperless, and consent-based digital solutions at scale. India Stack consists of three layers of open APIs: digital identity, payments, and data exchange. Together, these layers have transformed how services are accessed and delivered, fostering efficiency, transparency, and inclusion across sectors.

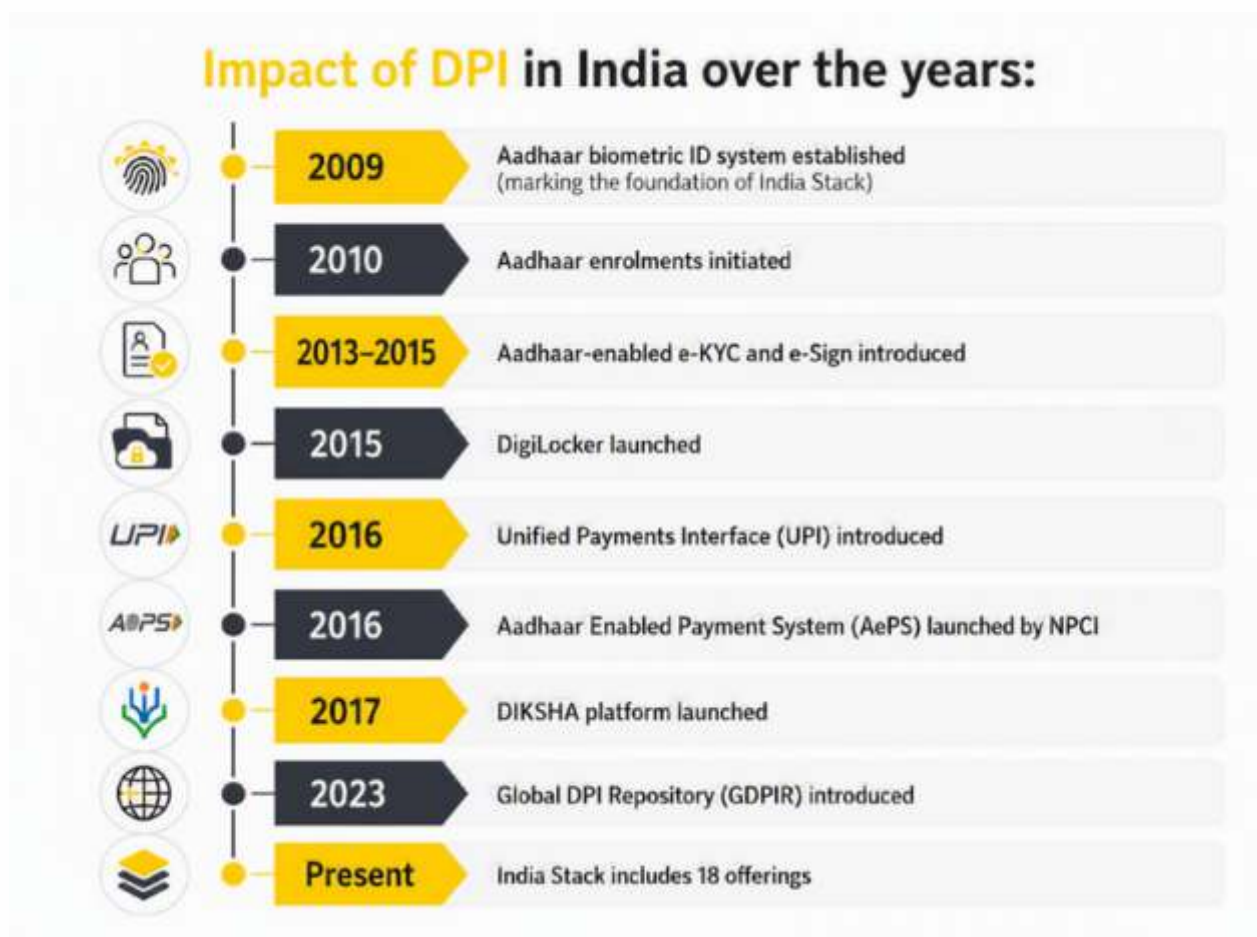
A prominent sector-specific application of DPI is the Skill India Digital Hub (SIDH), which serves the domains of skilling, education, employment, and entrepreneurship. Built on open-source, interoperable, and scalable principles, SIDH was launched in September 2023 by Hon'ble Minister Shri Dharmendra Pradhan and has been designated as India's DPI for these sectors. The platform offers key features such as digitally verified credentials for learners, personalized learning pathways and job matching, integration with government schemes, and access to industry-relevant courses. It currently hosts over 9 million users and provides more than 750 self-paced courses in 11 languages.

The transformative potential of DPI for women is already evident across India. Financial inclusion initiatives built on the DPI ecosystem have led to over 56 crore Jan Dhan accounts, with around 56 % owned by women¹, significantly improving access to formal banking. This has enabled direct benefit transfers (DBT) to reach millions of women efficiently, strengthening financial autonomy and reducing leakages. At the same time, digital platforms such as DIKSHA and SIDH are improving access to skills and employment opportunities. Additionally, platforms such as UPI continue to reduce structural barriers and enhance women's participation in the formal economy, supporting more inclusive growth

As countries seek inclusive and sustainable development pathways, DPI provides a powerful foundation for advancing gender equality alongside broader development goals. By expanding access, strengthening agency, and creating new opportunities for participation and growth, DPI is helping ensure that women are not merely beneficiaries of digital transformation but active contributors to it.

¹ <https://www.pib.gov.in/PressReleasePage.aspx?PRID=2161401®=48&lang=2>





1.2 Core Components of India's DPI

India's Digital Public Infrastructure (DPI) is built as a layered ecosystem of interoperable digital building blocks that enable trusted identity, seamless payments, secure data exchange, open digital networks, and citizen-centric service delivery at scale. Together, these components provide the foundation for inclusive and efficient digital services across sectors.

Digital Identity Layer

At the foundation of India's DPI is the Digital Identity Layer, anchored by Aadhaar, which provides residents with a unique and verifiable digital identity. Supporting services such as Aadhaar Authentication, eKYC, and eSign enable secure identity verification, paperless onboarding, and digital signing of documents. This layer establishes trust across the ecosystem and enables individuals to securely access government and private sector services.



Digital Payments Layer

Built on the identity foundation is the Digital Payments Layer, which has transformed how individuals and businesses transact digitally. Key components such as UPI, AePS, BBPS, RuPay, and FASTag enable instant payments, merchant acceptance, interoperable banking services, bill payments, and digital toll collection. Together, these platforms have accelerated financial inclusion and expanded access to formal financial services across urban and rural India.

Data Exchange Layer

The Data Exchange Layer enables secure, consent-based sharing of information between individuals and service providers. Platforms such as DigiLocker provide digital access to trusted credentials and documents, while the Account Aggregator framework and DEPA empower citizens to control how their financial and personal data is shared. Additionally, API Setu and open APIs facilitate interoperability across institutions, helping create a more efficient and user-centric digital ecosystem.

Open Networks and Ecosystem Enablers

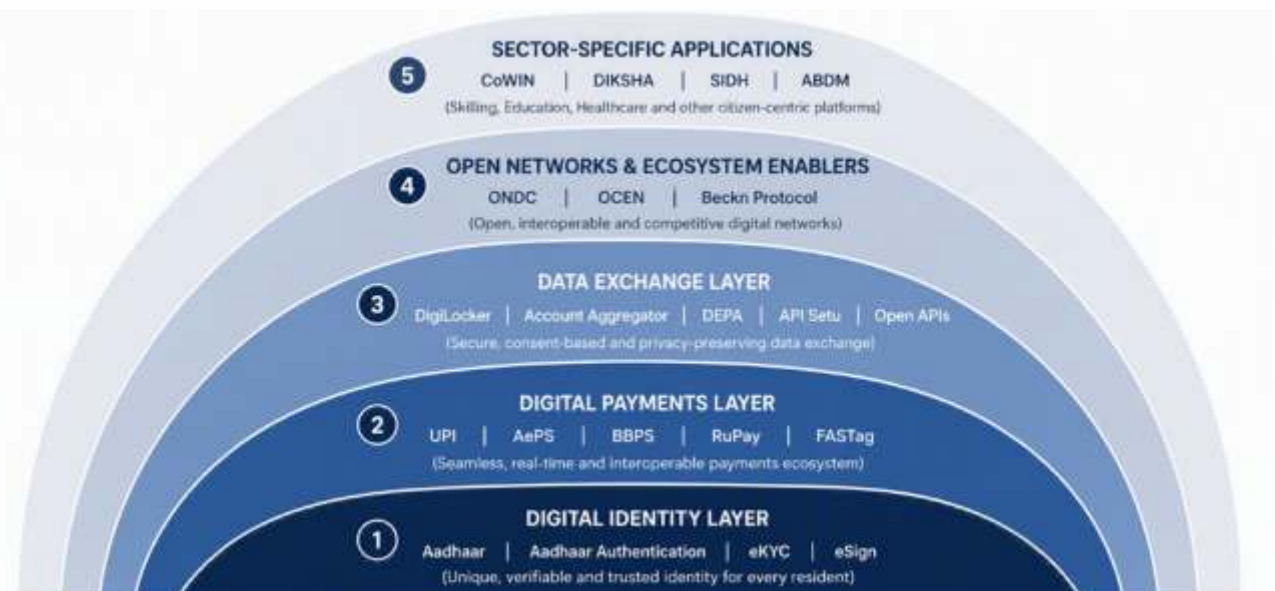
To promote innovation and ecosystem-wide participation, India has introduced open digital networks and protocols that allow multiple stakeholders to collaborate on common digital infrastructure. Initiatives such as ONDC, OCEN, and the Beckn Protocol enable interoperable commerce, digital lending, and ecosystem innovation, reducing dependency on closed platforms and creating new opportunities for businesses and entrepreneurs.

Sector-Specific Digital Platforms

Building on these foundational layers are sector-focused platforms that deliver services directly to citizens. Examples include CoWIN for healthcare and vaccination services, DIKSHA for digital education, Skill India Digital Hub (SIDH) for skilling and workforce development, and ABDM (Ayushman Bharat Digital Mission) for digital health. These platforms demonstrate how reusable DPI components can be leveraged across sectors to achieve scale, efficiency, and inclusion.



Figure X: India's Digital Public Infrastructure



Each layer of India's DPI contributes to women's social and economic empowerment. The Digital Identity Layer provides women with a trusted digital identity, enabling access to government programmes, financial services, and legal entitlements. The Digital Payments Layer supports direct benefit transfers, savings, entrepreneurship, and financial autonomy through secure digital transactions. The Data Exchange Layer gives women greater control over their personal records and facilitates access to services through consent-based data sharing. Open Digital Networks create new market and credit opportunities for women-owned enterprises and self-help groups. Finally, Sector-Specific Platforms expand access to healthcare, education, skilling, and livelihood opportunities, helping women participate more fully in the economy and society.

Underlying all layers are cross-cutting enablers including governance frameworks, security by design, privacy and user consent mechanisms, interoperability standards, cloud infrastructure, and scalability frameworks. These ensure that the ecosystem remains trusted, resilient, secure, and capable of supporting large-scale digital service delivery.

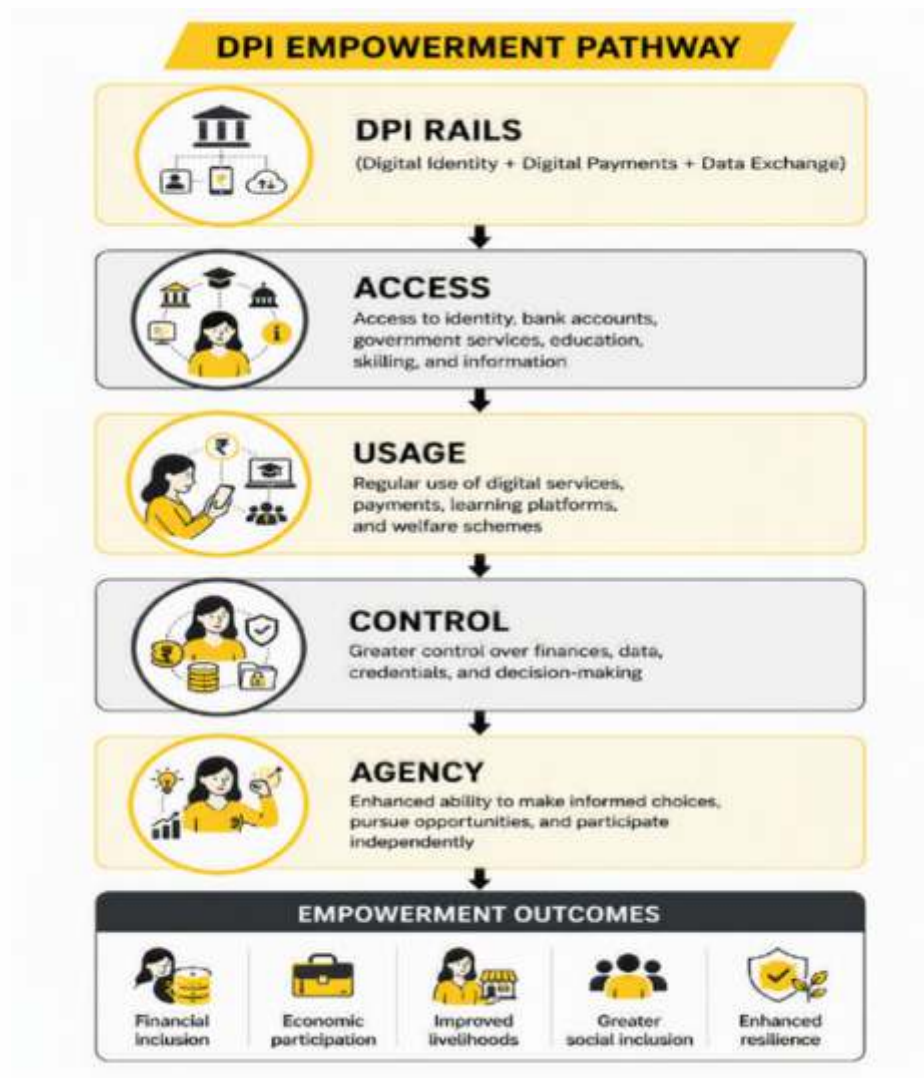
India's DPI illustrates how interoperable digital building blocks can be combined to create a scalable and inclusive digital ecosystem. By connecting identity, payments, data exchange, open networks, and sectoral applications through common standards and governance frameworks, India has created a reusable digital foundation that supports innovation, service delivery, economic participation, and citizen empowerment at population scale.



1.3 DPI as a Platform for Women's Empowerment

DPI has emerged as a transformative enabler of women's empowerment by embedding inclusivity into the design of digital systems and service delivery. By adopting a gender lens in digital inclusion, DPI recognises that women often face distinct socio-economic and cultural constraints that limit their access to technology, finance, education, and employment opportunities. As a result, well-designed DPI systems are increasingly being tailored to address these disparities, focusing not only on access, but also on usability, affordability, safety, and trust.

While DPI provides the foundational digital rails (digital identity, digital payment and data exchange), its contribution to women's empowerment occurs through a series of reinforcing pathways. DPI enables greater access to services and opportunities, which, when combined with usage, control, and supportive institutional conditions, can strengthen women's agency and participation in economic and social life.



The above framework highlights that the impact of DPI depends not only on the availability of digital infrastructure but also on factors such as digital literacy, device ownership, connectivity, social norms, and institutional support. When these enabling conditions are present, DPI can become a powerful catalyst for advancing women's empowerment at scale.

Historically, women, especially in low-income and rural settings, have been excluded from formal systems due to lack of identity documentation, limited mobility, and dependence on intermediaries. Foundational digital identity systems such as Aadhaar have addressed this challenge by providing verifiable, portable identity at scale, enabling women to independently access services, open bank accounts, and participate in formal economic activities. According to the 26th edition of the Ministry of Statistics and Programme Implementation's (MoSPI) Women and Men in India 2024² report women own 39.2% of all bank accounts and contribute to 39.7% of total deposits with female participation being particularly strong in rural areas, where women constitute 42.2% of account holders. These developments have significantly reduced dependency on male family members or local intermediaries for accessing entitlements and essential services.

Financial exclusion has been another major barrier. DPI-enabled platforms, including the Jan Dhan–Aadhaar–Mobile (JAM) trinity, have expanded financial inclusion for women at an unprecedented scale. These accounts, combined with Aadhaar authentication and mobile connectivity, enable Direct Benefit Transfers (DBT) to be credited directly into women's accounts, ensuring transparency, reducing leakages, and enhancing financial autonomy. The 27th edition of MoSPI's Women and Men in India 2025² report highlights that 29 States and Union Territories have either an equal number of or more female PM Jan Dhan Yojana (PMJDY) account holders than male account holders, underscoring the growing participation of women in the formal financial system. Women are therefore increasingly better positioned to control household finances, manage savings, and withstand economic shocks. Additionally, digital payment systems such as UPI are beginning to enable women entrepreneurs and micro-business owners to participate more actively in the digital economy by facilitating seamless payments, improving business visibility, and expanding market access.

Beyond financial inclusion, DPI also plays a critical role in bridging gaps in education, skilling, and employment. Platforms such as DIKSHA and Skill India Digital Hub (SIDH)

² <https://www.pib.gov.in/PressReleasePage.aspx?PRID=2119441®=48&lang=2>

³ https://www.mospi.gov.in/uploads/publications_reports/publications_reports1777368286840_92fcce98-7431-4ae1-8353-2fb729a36b77_4._Participation_in_Economy_W_&_M_2025_MoSPI.pdf



provide flexible, accessible learning opportunities that are particularly beneficial for women who face mobility restrictions or time constraints due to unpaid care work. These platforms offer multilingual content, self-paced learning, and job-matching services, enabling women to upskill and access livelihood opportunities without requiring physical relocation. In doing so, DPI supports a transition from informal, low-paying work to more formal and remunerative employment pathways.

Importantly, DPI also contributes to creating a more secure and accountable ecosystem for women. Features such as consent-based data sharing, secure digital identities, and traceable financial transactions help reduce risks of fraud, exploitation, and identity misuse. When integrated with institutional safeguards and awareness initiatives, DPI can enhance women's confidence in engaging with digital systems.

In conclusion, DPI represents a paradigm shift in advancing women's empowerment by moving beyond traditional welfare approaches to creating system-level enablers of inclusion and opportunity. By addressing structural barriers related to identity, finance, mobility, and access to information, DPI empowers women to participate more meaningfully in economic and social life. However, to fully realise its potential, continued efforts are needed to close gender gaps in digital access, literacy, and device ownership. A sustained focus on gender responsive design, last-mile connectivity, and targeted capacity-building will ensure that DPI not only reaches women, but truly transforms their lives, driving inclusive and equitable growth.

1.4 Global Context and BRICS Perspective

The global digital transformation agenda is increasingly moving beyond digitization of individual services toward the creation of foundational digital ecosystems that enable governments, businesses, and citizens to interact at scale. Across emerging economies, Digital Public Infrastructure (DPI) has emerged as a strategic approach to addressing persistent development challenges by creating interoperable digital rails for identity, payments, and data exchange. Rather than building isolated digital solutions, countries are increasingly investing in shared digital infrastructure that can support a wide range of public and private sector services.

Within this global context, the BRICS grouping offers an important comparative and strategic perspective. As a coalition of major emerging economies, BRICS countries collectively represent a substantial share of global population and economic activity, accounting for around 40% of global GDP (PPP) and nearly half of the world's population in the mid-2020s. This scale provides a unique testing ground for large-scale digital transformation initiatives, particularly those aimed at inclusive development.

However, the BRICS experience also demonstrates that there is no single model for digital transformation. Countries have pursued different pathways based on their



institutional frameworks, market structures, regulatory environments, and development priorities. While the underlying objectives are often similar, the architecture, governance arrangements, and implementation approaches vary significantly.

India's DPI Journey in Comparative Perspective

India's Digital Public Infrastructure has emerged as a comprehensive example of a population-scale DPI ecosystem. Through the combination of Aadhaar for digital identity, UPI for real-time payments, and consent-based data-sharing frameworks such as DEPA and the Account Aggregator ecosystem, India has demonstrated how interoperable digital building blocks can support financial inclusion, welfare delivery, digital commerce, and citizen service access at unprecedented scale.

Global experience increasingly suggests that successful DPI implementation depends not only on technology, but also on the interaction between three mutually reinforcing dimensions: technology, governance, and community adoption. Strong technical platforms must be accompanied by enabling legal frameworks, institutional capacity, regulatory oversight, privacy protections, and citizen trust. Without these foundations, even technically robust digital systems may struggle to achieve widespread adoption or deliver meaningful development outcomes.

Conditions for Transferability: Beyond Technology Replication

For BRICS countries and other Global South economies, the transferability of India's DPI experience therefore lies in principles rather than identical institutional arrangements. Countries seeking to adopt DPI-based approaches must establish several foundational prerequisites. These include a supportive legal and regulatory framework governing privacy, digital transactions, and data sharing; sufficient institutional capacity to operate and oversee digital systems; widespread digital connectivity and device access; trusted mechanisms for identity verification and authentication; and robust safeguards for privacy, cybersecurity, and grievance redress.

Equally important is the social dimension of trust. Digital systems are most effective when citizens perceive them as secure, transparent, and beneficial. The ability to build trust among users, particularly women, vulnerable populations, and first-time digital users, is often as important as the technology itself. Consequently, successful DPI implementation should be viewed as an institutional reform programme rather than solely a technology deployment exercise.

Lessons from the BRICS Ecosystem

The diversity of BRICS experiences demonstrates that countries have pursued different pathways to digital transformation based on their institutional priorities.



Brazil's digital public infrastructure is anchored by the Gov.br Digital Identity Platform and the National Civil Identification (CIN) system. Its digital payments ecosystem is driven by Pix, which operates through Brazil's Instant Payment System (SPI). The General Data Protection Law (LGPD) provides the framework for data governance and privacy protection. Together, these systems have simplified access to digital government and financial services through digital channels and real-time payments. Brazil's experience shows that central bank-led interoperability, broad provider participation, and simple user identifiers can accelerate instant payment adoption.

China's digital ecosystem is built on the Resident Identity Card system, supported by a national real-name digital identity framework. Digital payments are facilitated through platforms such as Alipay and WeChat Pay, alongside Digital Yuan (e-CNY) pilot initiatives. The Personal Information Protection Law (PIPL) provides the foundation for data governance and privacy protection. These systems have enabled participation in digital commerce, payments, and platform-based services across urban and rural populations. China's experience demonstrates that ecosystem integration can drive digital adoption at scale.

Egypt's digital identity ecosystem is centred on its National ID system and the emerging Haweya digital identity and eKYC platform. Its digital payments infrastructure includes the Instant Payment Network (IPN) and InstaPay, which support real-time transactions. The country is also developing a Digital Egypt governance framework and an evolving digital identity trust architecture. These initiatives have improved financial inclusion through instant payments, mobile banking, remittance digitization, and wider access to government services. Egypt's experience highlights the importance of combining digital identity, government services, and interoperable payments to accelerate inclusion and financial participation at scale.

Ethiopia's digital transformation efforts are built around the Fayda Digital ID programme, which forms the foundation of its national digital identity ecosystem. The country is also developing a national digital payments ecosystem to expand access to financial services. Governance and trust are supported by the Digital Identification Proclamation and the Fayda Trust and Governance Framework. Ethiopia's approach focuses on expanding foundational identity coverage, particularly among underserved populations, while increasing access to digital and financial services. Its experience demonstrates that foundational digital identity is a critical enabler of broader social and financial inclusion.

India's Digital Public Infrastructure (DPI) ecosystem is anchored by Aadhaar, which serves as the foundational digital identity layer. Its digital payments infrastructure is powered by the Unified Payments Interface (UPI) and the Aadhaar Enabled Payment System (AePS), enabling interoperable and real-time transactions at population scale. India's data-sharing and governance framework is supported by the Digital Personal



Data Protection Act, 2023 (DPDP Act), the Data Empowerment and Protection Architecture (DEPA), and the Account Aggregator ecosystem, which together promote secure, consent-based data sharing. These platforms have expanded financial inclusion through the Jan Dhan-Aadhaar-Mobile (JAM) framework, strengthened Direct Benefit Transfer (DBT) delivery, supported assisted service channels, and increased access to formal financial services for women and underserved populations. India's experience demonstrates that open, interoperable, and reusable digital public infrastructure can enable population-scale inclusion, service delivery, and innovation.

Indonesia has developed its digital identity ecosystem through the National Population Identification Number (NIK) and Digital Population Identity (IKD) initiatives. Its digital payments infrastructure is driven by QRIS, the national QR payment standard, and BI-FAST, a real-time payment system. Governance and interoperability are strengthened through SNAP, the Standard National Open API for Payments, alongside a personal data protection framework. These initiatives have promoted financial inclusion by supporting interoperable payments, MSME digitization, cross-bank connectivity, and digital delivery of social assistance. Indonesia's experience demonstrates that national standards for QR payments and real-time transfers can create a unified and inclusive digital payments ecosystem while fostering innovation and competition.

Iran's digital infrastructure is centred on the Smart National Identity Card, a biometric identity system integrated with government and banking services. The country has developed a domestic electronic banking and payment ecosystem, supported by national digital governance and e-government frameworks focused on Smart Government Services platforms. This integration has expanded access to public services and digital transactions through identity-enabled government and banking systems. Iran's experience highlights how identity infrastructure combined with integrated e-government services can improve service delivery efficiency and increase access to public services.

Russia's digital identity framework is based on the Unified System of Identification and Authentication (ESIA), which enables access to digital government services. The country's Faster Payments System (SBP) provides real-time payment capabilities, while federal personal data laws and national digital governance frameworks support trust and security. These systems have enhanced access to public services through integrated digital government platforms and identity-enabled service delivery. Russia's experience demonstrates that integrating digital identity with government services can improve service efficiency and accessibility.

South Africa's digital identity ecosystem is built around the National Population Register and the Smart ID Card System. Its digital payments infrastructure is primarily



bank-led, while data privacy and governance are governed by the Protection of Personal Information Act (POPIA). Digital systems are increasingly being used to support social grant delivery, financial inclusion, and access to public services for vulnerable populations. South Africa's experience suggests that linking digital public infrastructure with social protection programmes can strengthen development outcomes and improve service delivery.

The United Arab Emirates has developed a digital ecosystem anchored by the UAE Pass National Digital Identity Platform. Its digital payments infrastructure includes the Aani Instant Payments Platform, which supports real-time transactions. Data governance is reinforced through digital government, cybersecurity, and data governance frameworks. The integration of digital identity, payments, and government services has enabled widespread adoption of digital services. The UAE's experience demonstrates that strong governance and digital-first public service design can accelerate the uptake of digital services and improve user experience.

Collectively, these experiences suggest that the future of DPI is unlikely to be defined by a single model. Instead, countries can draw lessons from multiple approaches while adapting implementation strategies to local legal, institutional, and socioeconomic realities. The most successful DPI ecosystems are those that combine technological innovation with strong governance, trusted institutions, and citizen-centric design.

Strategic Implications

India DPI's significance lies in demonstrating that large-scale digital infrastructure can be designed as a public good that enables innovation, inclusion, and service delivery across sectors. For the broader BRICS community and emerging economies, the key lesson is that DPI should be adapted, with investments focused equally on technology, governance, trust, and inclusion. As digital infrastructure increasingly becomes a determinant of economic competitiveness and social participation, the ability to develop context-specific DPI ecosystems has become significant.

1.5 Report Methodology and Scope

Multi-source evidence, structured validation and calibrated attribution





Note: Primary research findings are directional and are not intended to estimate national prevalence or establish causal impact. They provide qualitative implementation insights from participating stakeholders and are interpreted alongside national and administrative evidence

Secondary research

A structured desk review examined India's evolving DPI ecosystem and its relevance to women across digital identity, bank accounts, payments, direct benefit transfers, authenticated records, telemedicine, digital skilling, employment and enterprise enablement. The review prioritised official national surveys, administrative dashboards, Reserve Bank of India and government publications, policy documents, multilateral datasets and credible research. Figures were checked against the latest available release, with definitions and reference periods recorded and survey estimates distinguished from administrative counts. This evidence establishes population-scale progress, policy context and the wider trajectory against which the primary findings are interpreted.

Primary research design

Nine structured instruments were tailored to women users and non-users, FICCI member companies, SHG/NGO leaders, Banking Correspondents and Banking Sakhis, bank officials, employers, women using teleconsultation and healthcare providers. Instruments combined closed questions on access, use, experience and institutional practice with limited open-ended prompts. Administration used online or assisted modes appropriate to each respondent group. The purposive design was intended to connect user experience with frontline delivery and institutional perspectives, providing a practical view of the pathways through which DPI contributes to inclusion.



Primary research participation

The primary research engaged a focused participant group spanning women beneficiaries and non-users of digital public services, FICCI member companies, SHG leaders and implementing NGOs, Banking Correspondents and Banking Sakhis, bank officials, employers, women accessing teleconsultation and healthcare providers. This breadth enabled the study to compare user experience with frontline and institutional perspectives without treating participating stakeholders as a statistically representative sample.

Data validation and analysis

Responses were captured in a structured workbook using anonymous respondent identifiers; personally identifying information was held separately from analytical records. Validation included range and category checks, review of duplicate or anomalous entries against available source records, and documentation of material cleaning decisions. Missing values were not imputed. Partially completed instruments were retained wherever a response was valid for the question being analysed; consequently, the denominator varies across findings and is reported as the question specific valid base.

Each participant group was analysed separately so that user experience, frontline observation and institutional perception were not pooled into a single estimate. Analysis was descriptive and unweighted. Primary-research findings are presented qualitatively to illustrate stakeholder experiences and implementation conditions. No significance tests, confidence intervals or population weights were applied.

Use of qualitative material

Open-ended responses complemented the structured descriptive analysis by providing context on reported experiences and implementation conditions. Selected insights were used to clarify and enrich the interpretation of the quantitative findings. Quotations considered for publication were anonymised and included only where the respondent's recorded consent was available.

Evidence synthesis

Secondary and primary findings were organised around five analytical themes: financial inclusion and economic participation; access to essential services; digital skilling and employment; private-sector enablement; and the gender digital divide. Evidence was compared across users, frontline actors and institutions to identify consistent patterns and material differences. National evidence provides scale and direction; primary evidence explains how DPI is experienced and delivered in practice.



Case-study conclusions and recommendations were then developed from findings supported by the relevant evidence stream, with divergences retained rather than averaged away.

Scope and interpretation

The primary research was conducted in India and is purposive, cross-sectional and descriptive. It is therefore used to understand mechanisms, experiences and emerging implementation patterns rather than to produce national or state estimates. Findings from participating stakeholder groups are presented as indicative perspectives from a focused cohort. While not statistically representative, they provide valuable evidence on emerging trends, shared challenges and opportunities across participating stakeholder groups. These findings were interpreted alongside secondary evidence to identify credible patterns, enabling conditions and areas of emerging value, while wider outcomes were treated as associations rather than causal impact estimates.

Interpretive value: These boundaries are appropriate to an exploratory policy study. They allow the report to combine population-scale evidence with practice-based insight, identify credible pathways through which DPI supports women's empowerment, and develop practical, country-led lessons for BRICS cooperation without overstating causality or representativeness.

Limitations of the study

The primary research used purposive participant selection to capture perspectives from women users and non-users, frontline facilitators, financial institutions, employers, healthcare providers, civil-society organisations and industry. The findings therefore provide a focused account of experiences and institutional practices among participating stakeholders rather than nationally representative estimates. Participant groups were analysed separately using question-specific valid bases and were not treated as a single pooled sample.

The research was structured to identify patterns in DPI access, use, service delivery and enabling conditions. Self-reported experiences and institutional assessments were treated as evidence of respondent perspectives and interpreted through triangulation with other respondent groups and secondary sources. Broader outcomes, including employment, income, enterprise performance and household decision-making were understood as being shaped by DPI alongside wider economic, social and institutional factors and were therefore not presented as causal impact estimates.



Open-ended responses were used selectively to add context to the structured findings. Variations in reference periods, definitions and reporting cycles across secondary sources were addressed by using the most recent authoritative evidence available and making comparisons only where the underlying measures were sufficiently aligned.



2 CHAPTER

DPI as a Catalyst for Financial Inclusion and Economic Independence



2 CHAPTER

DPI as a Catalyst for Financial Inclusion and Economic Independence

2.1 Case Study 1: Universal Banking Access and Women

Moving from formal account ownership to active, safe and women-controlled financial participation

89.0%

women aged 15–49 have a bank or savings account that they themselves use
NFHS-6, 2023-24

32.58 cr

female PMJDY beneficiaries, out of 58.45 crore total
PMJDY dashboard, 10 Jun 2026

67.0

RBI Financial Inclusion Index
March 2025

Case-Study Thesis

India has expanded women's formal financial access at population scale by combining PMJDY's account-access architecture with DBT, Aadhaar-enabled services and digital payment infrastructure. The next frontier is no longer account opening alone; it is sustained, safe and independent usage that enables women to convert account access into welfare receipt, savings, digital payments, credit, insurance and financial resilience.

1. Context: Universal Banking as a DPI-enabled Inclusion Pathway

Financial inclusion is a foundational enabler of women's economic participation, financial security, and agency. Over the past decade, India has pursued a coordinated inclusion model that combines account access with digital identity, welfare-delivery and payment infrastructure. Pradhan Mantri Jan Dhan Yojana (PMJDY) created the account-access layer; Aadhaar-enabled authentication strengthened identity verification and assisted access; Direct Benefit Transfers (DBT) linked welfare delivery to beneficiary accounts; and digital payment systems such as UPI and Aadhaar-enabled payment services expanded the transaction layer. Together, these interventions have moved financial access beyond a primarily branch-led model towards a population-scale inclusion architecture.

PMJDY was designed as a national mission for financial inclusion, providing affordable access to basic savings and deposit accounts, remittance, credit,



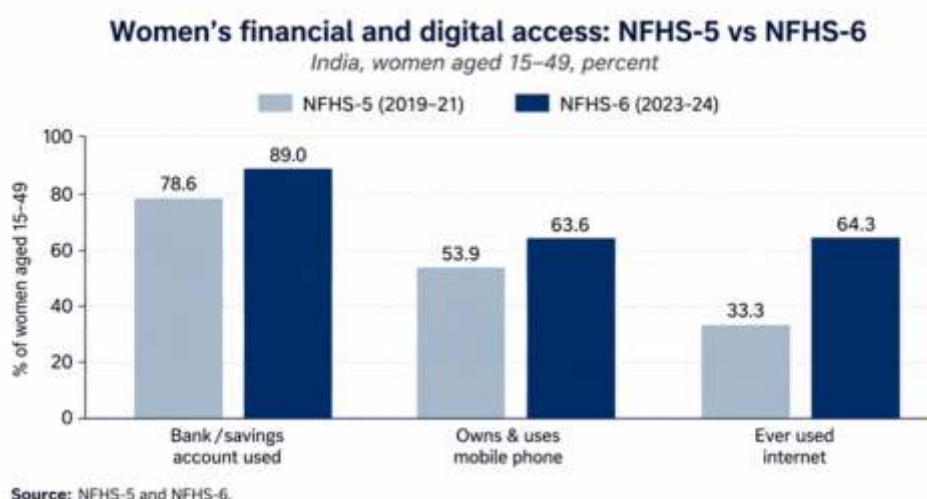
insurance and pension services. Its scheme design lowered entry barriers through zero-balance accounts, RuPay debit cards, eligible overdraft facilities and linkages with DBT and social security schemes. This architecture is especially significant for women because it connects formal account ownership with direct welfare receipt and a wider set of financial services. In a DPI-enabled ecosystem, the policy significance of PMJDY therefore lies not only in account opening, but in creating the foundation through which women can receive, store, transact and potentially exercise greater control over financial resources.

2. What Changed for Women: Scale of Access

Successive rounds of the National Family Health Survey show a substantial expansion in women's financial and digital access. NFHS-6 (2023–24) reports that 89.0% of women aged 15–49 operate a bank or savings account themselves, up from 78.6% in NFHS-5 (2019–21). Over the same period, the share of women who own and use a mobile phone increased from 53.9% to 63.6%, while the share who have ever used the internet nearly doubled from 33.3% to 64.3%.

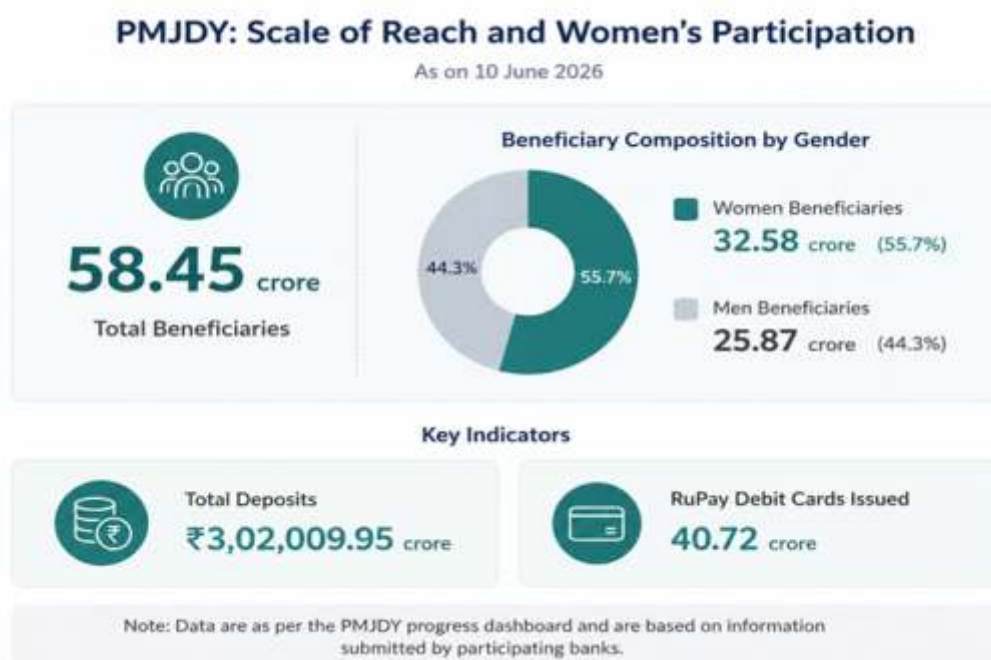
These gains are significant because account ownership, mobile access, and internet exposure together create the basic conditions for women's participation in digital financial services. A bank account provides the formal financial access point; mobile access enables communication, authentication and transaction capability; and internet exposure supports digital service use, information access and financial awareness. Taken together, these indicators suggest that women's financial inclusion is increasingly supported by a wider digital-access environment, rather than by account ownership alone.

Figure 1: Women's financial and digital inclusion, NFHS-5 vs NFHS-6.
Source: NFHS-6 Fact Sheets, 2023-24.



Administrative data from PMJDY reinforce the survey-based picture of expanded financial access. As of 10 June 2026, the PMJDY progress dashboard reported 58.45 crore beneficiaries, including 32.58 crore female beneficiaries, who accounted for approximately 55.7% of total PMJDY accounts. The dashboard also recorded deposits of ₹3.02 lakh crore and 40.72 crore RuPay debit cards issued to beneficiaries. These figures underscore the scale of India's account-access architecture, while noting that PMJDY dashboard data are based on information submitted by participating banks.

Figure 2: PMJDY beneficiary composition and long-run account ownership growth. Sources: PMJDY dashboard, 10 June 2026



Long-run survey data provide the same directional signal. The World Bank Global Findex series shows account ownership in India rising from 35% of adults in 2011 to 78% in 2021, and further to about 89% in 2024. This places India among the most rapid account-access expansion stories over the period covered by the Findex series.



Expansion of account ownership in India, 2011–2024



Source: World Bank Global Findex (2011, 2021; 2024 reported in Global Findex 2025).

3. From Access to Agency: The Empowerment Pathway

The gender significance of universal banking access lies not only in account ownership, but in the way an account connects women to public transfers, savings instruments, payment channels and formal financial services. Secondary evidence suggests that the strongest empowerment pathway is indirect but important: formal account access can improve the conditions under which women receive, retain, transact and use financial resources with greater independence.

From access to agency: the empowerment pathway

Illustrative secondary-evidence pathway



Indicative pathway based on secondary evidence; not direct causal attribution.

This pathway should be interpreted with care. The available secondary evidence establishes strong directional trends in women's account access, account use and digital financial participation. However, it does not directly measure whether women independently control account credentials, passbooks, debit cards, account-linked mobile numbers, PINs or final decisions on the use of transferred funds. The empowerment claim is therefore best framed as an enabling relationship: universal

banking access can strengthen the conditions for women's financial agency, but its impact depends on whether access is converted into regular, informed, private and women-controlled use.

4. The More Demanding Test: Active and Digital Usage

Account ownership has expanded rapidly, but usage remains the more demanding test of financial inclusion. Global Findex 2025 indicates that in India, approximately 16% of account owners did not have an active account in 2024. India's next inclusion phase is focused on translating broad account access into deeper and more regular usage.

The trajectory, however, is improving. Over the same period, the gender gap in active-account ownership narrowed from 12 percentage points to 7 percentage points. These trends suggest that formal account access is increasingly being converted into use, particularly as public transfers and payment systems create recurring reasons for women to engage with their accounts.

Digital payment adoption has also expanded, supported by UPI, Aadhaar-enabled payment services, and allied transaction systems. However, a gender gap in digital financial participation persists. Global Findex 2025 finds that women remain less likely than men to make or receive digital payments, while poorer, rural and younger account holders are also generally less likely to transact digitally.

In practical terms, India has created the financial-access and payment rails at population scale. The next challenge is to deepen women's actual use of these rails. This depends on mobile ownership, internet access, digital and financial literacy, transaction confidence, secure authentication, trusted assisted channels, and reliable grievance redressal.

Interpretive Pivot

India's achievement is the scale of access. The next policy frontier is depth of usage: accounts that women actively, safely and independently use for transfers, savings, payments, insurance, credit and financial resilience.

5. Success Factors Behind Scale

Progress is also visible in composite measures of financial inclusion. The Reserve Bank of India's Financial Inclusion Index rose to 67.0 in March 2025, up from 64.2 in March 2024 and 53.9 in March 2021. The RBI notes that growth was witnessed across the Access, Usage and Quality sub-indices, with the improvement in FY2025 driven particularly by the Usage and Quality dimensions.



This is significant because it shows that India's financial inclusion story is not limited to the expansion of account numbers. The improvement in the FI-Index points to a broader strengthening of the financial inclusion ecosystem, including the reach of financial services, the extent to which they are used, and the quality of the inclusion experience.

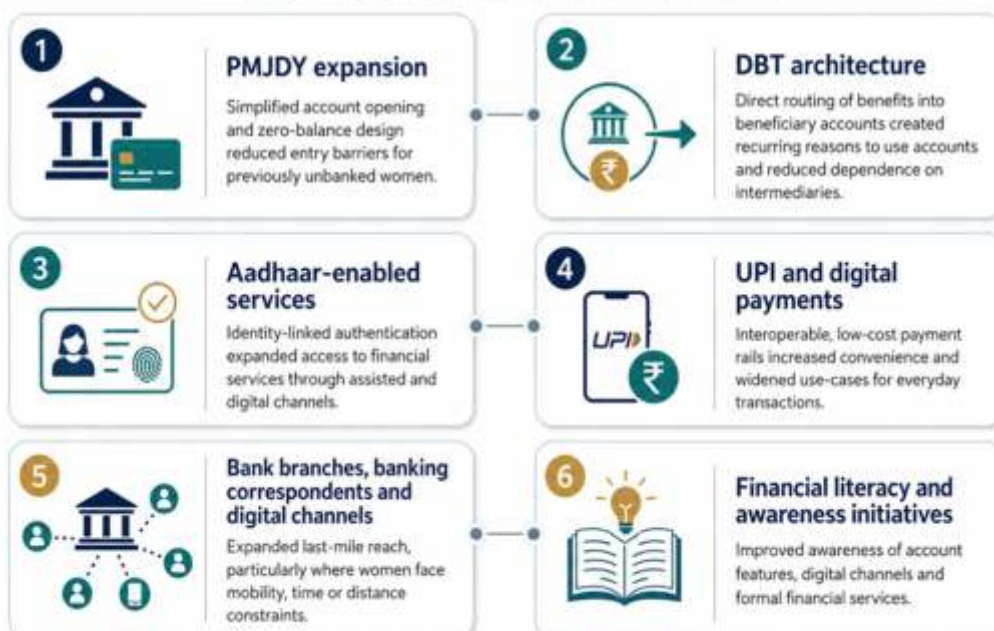
Figure 3: RBI Financial Inclusion Index, 2017-2025.

Sources: RBI Financial Inclusion Index; PIB explainer, August 2025.



Success factors behind scale

Key drivers of women's financial inclusion in India



6. Remaining Barriers: From Access to Sustained Participation

Despite the scale of progress, the reviewed literature points to a set of barriers that continue to shape the depth and quality of financial inclusion. The RBI's National Strategy for Financial Inclusion identifies recurring constraints such as limited awareness of financial products and services, lack of trust in financial institutions, documentation-related challenges, access constraints in remote locations, transaction costs and uneven service quality. Global Findex 2025 similarly indicates that adults without accounts in India often cite another family member already having an account, insufficient funds, the cost of financial services and distance from a financial institution as key reasons for exclusion.

For women, these barriers can be compounded by gendered constraints in mobility, time availability, digital confidence, device access and control over account-linked credentials. Account ownership may therefore coexist with dependence on family members, banking correspondents or other intermediaries for withdrawals, balance checks, DBT verification, digital payments or grievance filing. This reinforces the central finding of the case study: universal banking access is a necessary foundation, but meaningful financial inclusion depends on whether women can use accounts and linked digital services regularly, safely and with adequate control.

From account access to active participation

Five frictions that can limit women's financial participation



***Interpretation Note:** This case study is based on secondary evidence and should be read as an analysis of enabling pathways rather than direct causal attribution. Available datasets establish large-scale gains in women's account ownership and improving usage, but do not fully capture women's independent control over accounts, mobile-linked credentials, DBT funds, assisted-banking interactions or sub-national variations such as Tier-2 and Tier-3 city outcomes.*

7. Policy Agenda: From Account Inclusion to Women-Controlled Financial Participation

The next stage of women's financial inclusion should move beyond universal account access towards meaningful, women-controlled financial participation. This requires a sharper focus on active account use, safe digital transactions, financial capability, service quality, consumer protection, and gender-disaggregated usage outcomes.

Priority areas include:

- Deepen account activity: Link accounts to recurring and useful transactions, including DBT receipt, savings, pension contributions, insurance premiums, small merchant payments and livelihood-related transfers.
- Strengthen women-focused financial capability: Deliver practical digital and financial literacy through SHGs, Banking Correspondents, BC Sakhis, local government platforms and frontline service networks, with emphasis on PIN safety, fraud prevention, DBT verification, UPI use and grievance filing.
- Move from ownership to control: Track and strengthen women's effective control over account-linked phones, SIM cards, credentials, passbooks, debit cards, PINs and grievance channels, rather than measuring account ownership alone.
- Design for low-literacy and assisted use: Build simple, local-language, feature-phone-compatible and assisted service journeys for women who are not regular smartphone or internet users, while protecting privacy and consent.
- Strengthen consumer protection and grievance redressal: Need to Strengthen responsive user support, secure authentication and accessible grievance-resolution systems related to DBT credits, biometric authentication, AePS, transfers, transactions and account-linking.
- Measure gender-disaggregated usage outcomes: Track active accounts, digital payments, formal savings, insurance uptake, credit access, complaint resolution, independent account operation and women's control over the use of funds.

The policy objective should be to ensure that every account becomes not only an access point, but a usable financial asset. For women, this means an account that



can be operated with confidence, privacy, safety and control — and that supports resilience, enterprise, welfare access and household financial decision-making.

8. Conclusion

India's universal banking push demonstrates how a DPI-enabled approach can expand women's participation in the formal financial system at population scale. PMJDY created the account-access layer; Aadhaar-enabled services and DBT strengthened authentication and direct transfer delivery; and UPI, AePS and allied payment systems expanded the transaction layer. Together, these instruments have improved the enabling conditions for women's financial inclusion by linking account ownership with welfare receipt, savings, payments, and access to formal financial services.

The secondary evidence also makes clear that the policy frontier has shifted from access alone to meaningful use. The central question is no longer only whether women have bank accounts, but whether they can use those accounts actively, safely and independently. For BRICS and other emerging economies, India's experience offers an important lesson: universal bank accounts become a stronger instrument for women's empowerment when they are embedded in a wider ecosystem of reliable transfers, usable digital rails, trusted last-mile support, consumer protection, grievance redressal and metrics that measure usage and control, not access alone.

2.2 Case Study 2: Direct Benefit Transfer (DBT) revolution

Primary research evidence on direct delivery, financial participation and trusted last-mile support

The primary research presents a positive picture of India's DPI-enabled DBT ecosystem. Women beneficiaries most frequently identified full-value and intermediary-free receipt as improvements, while institutional respondents reported expanding own-account delivery, reduced leakage and strong last-mile support.

Evidence base and interpretation

All primary research instruments were reviewed for relevance. This case study draws on a focused participant group comprising women beneficiaries, women non-users of digital public services, SHG/NGO leaders, Banking Correspondents/Banking Sakhis and bank officials. The remaining instruments were reviewed and continue to inform their respective thematic case studies.



Participant groups are analysed separately using question-specific valid bases. A majority of participating women providing a valid response on DBT use reported using DBT during the preceding 12 months; beneficiary findings on DBT receipt relate to this subgroup. Multiple-response percentages describe the improvements selected and are not additive. Independent account operation, confidence and trust are used as complementary evidence on the wider digital-finance context surrounding DBT. The findings are descriptive, unweighted and indicative: they are not statistically representative, but provide exploratory evidence of emerging trends, shared challenges and opportunities across participating stakeholders.

Primary Research Snapshot



1. Full-value and direct receipt are the clearest beneficiary-reported gains

Among participating women who reported using DBT during the preceding 12 months, a majority selected receipt of the full amount without deductions and direct receipt without an intermediary as improvements compared with earlier methods of receipt. These were the two most frequently reported gains and align closely with DBT's account-based design and its objective of delivering benefits directly to intended beneficiaries.

Other reported improvements included on-time receipt (nearly half); clearer information on the amount and purpose of the transfer (about a third); no requirement to pay an informal commission (about a fourth); and greater predictability. Because participants could select more than one improvement, these results indicate where positive change was most visible rather than constituting overall service performance rates.

2. Direct account credit extends benefit delivery beyond active digital service users

The non-user instrument adds an important inclusion perspective. All participating women who were not active users of digital public services held a sole bank account

in their own name. A large majority reported receiving benefits through direct account credit and withdrawing funds with assistance; smaller shares received cash through a local agent or post office or did not currently receive benefits.

This pattern shows how DBT's formal account-based architecture can extend benefit receipt even where independent digital use is still developing. Assisted withdrawal is therefore not separate from the inclusion pathway: it can serve as a practical bridge between own-account receipt and increasingly confident use of digital financial services.

3. DBT operates within a wider environment of independent and confident financial use

Among participating DBT users, nearly all reported operating their bank accounts fully or mostly independently. Similarly, a large majority rated their confidence in managing finances since using digital public services as high or very high, while large majority reported high or very high trust in the privacy and security of their personal data.

These findings show that DBT use in the surveyed group sits alongside strong independent account operation, financial confidence and trust. They provide complementary evidence of the financial-inclusion environment in which direct benefit receipt is taking place.

Organizational observations reinforce this picture. Participating SHG/NGO stakeholders consistently reported increased savings among women beneficiaries, while a majority also reported an improved bargaining position within the household. These perspectives indicate how own-account transfers, community institutions and financial capability can work together to support women's agency.

4. Trusted last-mile networks reinforce reach, confidence and independent use

Participating SHG/NGO leaders reported a consistently positive shift in DBT delivery. All indicated that the proportion of women receiving DBT in their own bank accounts had increased significantly over the preceding three years. A large majority reported a substantial reduction in leakage and intermediary dependence, while the remaining participants observed a moderate reduction. Most also rated Banking Correspondent and Banking Sakhi networks effective or highly effective in supporting women beneficiaries.

Participating Banking Correspondents and Banking Sakhis provided a complementary last-mile perspective. All reported increased demand for AePS-based services among women, with a majority describing the increase as significant and the remaining participants as moderate. They also consistently indicated that women customers transacted mostly or almost always independently and were at least



moderately confident in conducting AePS transactions independently after one or two assisted attempts.

A majority of participating Banking Correspondents and Banking Sakhis identified proximity and accessibility as the principal reason women preferred a Banking Sakhi over a branch, while a smaller share selected trust and familiarity. Most rated their services highly impactful for women's financial inclusion, with the remaining participants rating them impactful. Together, these responses indicate how local access and trusted assistance can complement DPI while supporting independent use.

5. Institutional readiness provides a strong platform for continued scaling

Participating bank officials expressed strong confidence in the last-mile model, consistently rating BC/Sakhi networks effective or highly effective in deepening women's financial inclusion and indicating that their institutions were fully prepared to scale DPI-based services for women over the next three years. Among participating SHG/NGO stakeholders identifying the intervention that contributed most strongly to women's financial autonomy through DPI, a majority selected SHG-bank linkages, while a smaller share selected digital-literacy training.

The responses also identify constructive priorities for sustaining these gains. Authentication reliability was the most frequently reported operational issue among participating Banking Correspondents and Banking Sakhis, while a smaller share also selected connectivity. NGO stakeholders most frequently identified authentication as an operational consideration, while bank officials most frequently identified customer digital literacy and authentication/KYC. These converging perspectives highlight the value of continued investment in reliable authentication, accessible customer support, capability building and strong last-mile institutions.

Readiness assessments were encouraging: most participating SHG/NGO stakeholders considered women beneficiaries mostly or very ready for fully digital financial services over the next three years, while a smaller share considered them partially ready. These positions assisted channels, SHG-bank linkages and practical digital learning as complementary mechanisms for broadening confident participation.

6. Conclusion

The primary research provides a predominantly positive account of DBT across women beneficiaries and the institutions supporting last-mile delivery. Women users most frequently identified full-value and intermediary-free receipt as improvements over earlier methods. The non-user evidence further demonstrates the reach of account-based transfers: direct credit was available even where assisted withdrawal



remained part of the user journey. SHG/NGO leaders reported increased own-account receipt and reduced leakage and intermediary dependence; Banking Correspondents and Banking Sakhis reported rising demand, independent transactions and strong confidence among women customers; and bank officials reported effective last-mile networks and full readiness to scale.

Taken together, the evidence positions DPI-enabled DBT as a strong foundation for transparent, inclusive and women-centred benefit delivery. The indicative findings are reinforced by formal account access, trusted assisted channels, community institutions and continuing investment in authentication reliability and digital capability. For BRICS countries, India's experience illustrates how interoperable digital infrastructure and human-centred last-mile support can work together to deepen women's financial participation.

2.3 DPI-Enabled Entrepreneurship and Credit Access

DPI is playing a pivotal role in unlocking entrepreneurship and expanding access to credit, particularly for underserved populations such as women, self-help groups (SHGs), and microenterprises. By combining digital identity, real-time payments, consent-based data sharing, and interoperable lending infrastructure, DPI is reducing friction in credit delivery and enabling women-led businesses to become more visible to formal financial institutions.

This transformation is further strengthened by government credit schemes, the Unified Lending Interface (ULI), the Jan Samarth portal, and the rapid growth of digital lending. Recent evidence shows that women are increasingly becoming active participants in India's formal credit ecosystem. A 2026 report “From Borrowers to Builders, Women and India's evolving credit market”⁴ by NITI Aayog, notes that women now account for 26% of total system credit, with women's credit portfolio balances expanding nearly five-fold since 2017, and credit penetration among women rising to 36%. The report also highlights that women entrepreneurs have emerged as a strong growth cohort, with business-lending portfolio balances increasing 7.5 times since 2017.

1. DPI as the backbone of entrepreneurial growth

Historically, SHGs, microenterprises, and women entrepreneurs have faced intersecting barriers, including limited asset ownership, restricted mobility, thin or non-existent credit histories, and reliance on informal lending channels. DPI addresses these challenges through three foundational pillars:

⁴ <https://www.niti.gov.in/sites/default/files/2026-04/From-Borrowers-To-Builders-Women-and-India-Evolving-Credit-Market.pdf>



- **Frictionless onboarding through Aadhaar-based e-KYC**, which reduces the documentation burden and enables faster access to bank accounts, credit products, and government schemes.
- **Low-cost digital payments through UPI**, which enable real-time transactions and create verifiable digital transaction trails for small businesses and women-led enterprises
- **Data-driven lending enabled by the Account Aggregator (AA) framework**, which facilitates individuals and businesses to securely share financial data with lenders with explicit consent, thereby improving credit assessment and reducing dependence on physical documents or collateral. The Department of Financial Services⁵ notes that, as of 31 March 2026, more than 2.88 billion financial accounts had been enabled for data sharing through the AA framework, with 284.6 million accounts linked by users.

These elements collectively reduce information asymmetry, enhance credit assessment, and integrate informal businesses into the formal economy by making them “credit visible.”

For instance, SHGs are increasingly transitioning from cash-based operations to formal banking systems, improving savings behavior, financial discipline, and access to institutional credit. Under DAY-NRLM,⁶ cumulative loans disbursed by banks to women SHGs since inception stood at ₹11,07,479.60 crore, with an outstanding amount of ₹2,99,833.35 crore.

DPI strengthens this model by digitising group records, enabling direct bank linkage, supporting transaction monitoring, and improving the ability of banks to assess SHG repayment behaviour. Similarly, women-led enterprises and microbusinesses can leverage digital payment platforms such as UPI to record income streams, improve transparency, and unlock access to working capital.

2. Key Indian Government Credit Schemes

Several government initiatives are expanding access to affordable and collateral-free credit. The following schemes play a critical role in de-risking lending and broadening the reach of formal finance:

- **Pradhan Mantri Mudra Yojana (PMMY)**: Provides loans up to ₹10 lakh to micro-enterprises, with a strong focus on first-time entrepreneurs. As of April 2025,

⁵ <https://financialservices.gov.in/account-aggregator-framework>

⁶ <https://www.dord.gov.in/static/uploads/2025/08/0eb18664acf93f88343b4cd3469b0e91.pdf>



PMMY had sanctioned over 52 crore loans worth ₹32.61 lakh crore. Women account for 68% of all Mudra beneficiaries, demonstrating the scheme's centrality to women-led microenterprise financing.

- **Stand-Up India Scheme:** Facilitates loans between ₹10 lakh and ₹1 crore for women and SC/ST entrepreneurs, promoting inclusive enterprise development. As of 28 February 2025, the scheme⁷ had sanctioned 2.67 lakh accounts, with ₹60,504 crore sanctioned and ₹34,450 crore disbursed. Importantly, 1.99 lakh accounts were held by women, showing significant women-specific uptake.
- **SHG-Bank Linkage under DAY-NRLM:** As noted above, women SHGs have accessed over ₹11 lakh crore in cumulative bank loans, with low reported NPAs, reflecting the role of collective lending models in building women's repayment histories and financial discipline.
- **PM SVANidhi:** The scheme provides working capital loans to street vendors and incentivises digital repayments and digital transactions. For women street vendors, such schemes can support working capital access, repeat borrowing, and gradual transition from informal borrowing to formal credit channels.
- **Credit Guarantee Fund Trust for Micro and Small Enterprises (CGTMSE)** and related guarantee mechanisms: Credit guarantee schemes reduce lender risk and enable collateral-free lending to micro and small enterprises, including women-led businesses that may lack physical collateral

⁷ <https://financialservices.gov.in/stand-india-scheme-supi>





3. Unified Lending Interface (ULI): Transforming Credit Delivery

The Unified Lending Interface (ULI), developed by the RBI and RBI Innovation Hub, is emerging as a key layer in India's digital credit ecosystem. Modelled on the success of UPI, ULI standardizes and streamlines lending processes through interoperable digital infrastructure for under-served groups such as MSMEs, rural borrowers, tenant farmers, and gig-economy workers.

Key features include:

- **Digital credit infrastructure layer:** Connects lenders, data providers, and distribution platforms
- **Plug and play architecture:** Enables seamless access to verified borrower data (e.g., bank transactions, GST records, land data)
- **Faster loan processing:** Reduces loan approval timelines from weeks to minutes
- **Enhanced inclusion:** Enables flow-based lending, particularly benefiting MSMEs, rural borrowers, tenant farmers, and gig workers without traditional collateral

ULI reduces fragmentation in the lending ecosystem and enables scalable, data-driven, and inclusive credit delivery.

4. Jan Samarth Portal: One-Stop Credit Access Platform

The Jan Samarth portal is a government-led digital marketplace for credit-linked schemes which democratizes access by enabling individuals and entrepreneurs to discover and apply for the most relevant government schemes directly. By improving

transparency and ease of access, Jan Samarth empowers individuals, especially women and small entrepreneurs, to navigate the credit ecosystem more independently and efficiently:

- Acts as a single-window platform for applying to multiple government credit schemes
- Offers eligibility-based discovery, helping women identify suitable financing options
- Ensures end-to-end digital journey, minimizing dependency on intermediaries and reducing bias or friction

5. An Integrated ecosystem for Inclusive Growth

- The convergence of DPI, government schemes, ULI, Jan Samarth, and digital lending is creating a virtuous cycle of financial inclusion and entrepreneurship:
- Entrepreneurs adopt digital payments (UPI) and build transaction histories
- Financial data becomes accessible through AA and ULI, improving credit profiling
- Government schemes de-risk lending and incentivize financial institutions
- Jan Samarth simplifies scheme discovery and application
- Digital lenders deliver timely, tailored, and scalable credit solutions

6. Outcomes for women entrepreneurs

DPI-enabled credit access can support women entrepreneurs across several dimensions:

- **Credit accessed:** Women have become major beneficiaries of PMMY and Stand-Up India, with women accounting for 68% of Mudra beneficiaries and 1.99 lakh Stand-Up India accounts as of February 2025
- **Enterprise formalisation:** Digital onboarding, Udyam registration, bank account usage, GST integration where applicable, and Jan Samarth-linked applications can help women-led enterprises move from informal to formal financial systems.
- **Repayment and credit history:** SHG lending data shows strong repayment discipline, with NPAs on SHG bank loans reported at 1.76%. This can improve lender confidence and support repeat borrowing.
- **Market access:** Digital payments and commerce platforms enable women entrepreneurs to transact beyond local cash markets, receive payments directly, and create auditable records of business activity.



- **Graduation to formal credit:** As women build repayment histories and digital transaction trails, they can move from informal credit or group-based credit to individual enterprise loans, business-purpose credit, and working capital products. The NITI Aayog report “From borrowers to builders, Women and India's evolving credit market” notes that women borrowers are progressively moving beyond entry-level credit towards retail and business-purpose lending.

Evidently, DPI is redefining the landscape of entrepreneurship in India by making financial systems more accessible, inclusive, and efficient for women. When combined with targeted government initiatives, ULI, Jan Samarth, and digital lending innovations, it creates a robust ecosystem that enables underserved populations to participate more fully in economic growth. By making credit faster, more transparent, and data-driven, India is building one of the world's most scalable and inclusive models for entrepreneurial development.

2.4 Case study 3: DPI as an Enabler of Women's Livelihoods and Rural Economic Participation

Primary research evidence on usage, access, institutional delivery and workplace integration

Core finding: Across the surveyed groups, DPI emerges as a practical enabling layer for women's economic participation—reducing the time and travel required for transactions, supporting frequent digital payments, strengthening last-mile financial access and connecting workplace processes to trusted digital rails.

Evidence base and interpretation

All primary-research instruments were reviewed for relevance. This case study uses structured evidence from a focused participant group comprising women beneficiaries, women non-users, FICCI member companies, SHG/NGO leaders, Banking Correspondents/Banking Sakhis, bank officials and eligible manufacturing employers. Telemedicine-patient and healthcare-provider evidence was reviewed but is reserved for the separate digital-health case study.

Participant groups are analysed separately using question-specific valid bases. Findings are descriptive, purposive and unweighted. They should be read as indicative insights reflecting the perspectives of participating stakeholders rather than as statistically representative estimates. The research measures use, experience and enabling conditions; it does not estimate jobs created, income gains or enterprise growth attributable to DPI. Organisational responses are presented as institutional perspectives rather than independently verified outcomes.

1. DPI is embedded in the financial routines of economically engaged women

Within the participating cohort, women engaged in agriculture and allied activities, self-employment, microenterprise and daily-wage work formed the economically active group. A large majority of these livelihood-engaged women reported using UPI during the preceding 12 months, indicating that digital payments were already integrated into the financial routines of most participants in this group.

Across the wider valid service-use base, a large majority used UPI and DBT, while smaller shares used DigiLocker and UMANG. Transaction intensity was also substantial for digital services at least weekly, with some participants transacting daily and many using services several times a week. These patterns indicate active engagement with DPI-enabled services rather than formal access alone.

2. Reduced travel and time costs strengthen livelihood-enabling conditions

The most widely reported benefit was avoiding travel to a bank branch or government office. A majority also reported the ability to access services at any time. Among participating women able to compare transaction time, most reported a saving, commonly between 30 and 60 minutes; smaller shares reported savings ranging from one to four hours or more than half a day, while only a few reported no noticeable saving.

For women managing agricultural work, microenterprises, wage activity and household responsibilities, these access efficiencies can release time and reduce the practical cost of routine financial and public-service transactions. The evidence therefore supports positive attribution to DPI as an enabler of participation, while not treating time saved as a direct measure of employment or income growth.

3. Trusted delivery networks extend access and support confident use

The last-mile instruments show how digital infrastructure and human support reinforce one another. Participating Banking Correspondents and Banking Sakhis consistently reported increased demand for AePS-based services among women. They also indicated that women customers transacted mostly or almost always independently and were at least moderately confident after one or two assisted attempts. A majority identified proximity and accessibility, while a smaller share cited trust and familiarity, as the principal reason women preferred a Banking Sakhi over a branch.

Bank and community institutions expressed similarly positive views. Participating bank officials consistently rated BC/Sakhi networks effective or highly effective, and a large majority reported that DPI had extended women's access to formal credit to a great extent; a smaller share reported an extension to some extent. SHG/NGO leaders consistently reported increased savings among women beneficiaries. Among those identifying the strongest autonomy-enhancing intervention, a majority selected



SHG–bank linkages, while a smaller share selected digital-literacy training. Together, these findings position assisted access, community institutions and digital capability as complementary components of a scalable inclusion model.

4. Industry adoption connects DPI to skilling, enterprise and formal work

Participating FICCI member companies illustrate how industry programmes are using DPI within wider empowerment initiatives. A majority reported work on digital literacy, while lower than half reported digital skilling and entrepreneurship support. Among companies providing valid responses on DPI rails, Aadhaar and UPI were the most commonly used, with a smaller share using Skill India Digital Hub. Nearly all participating companies were either interested in BRICS knowledge sharing or open to exploring it, indicating a strong platform for cross-country learning on women-centred delivery models.

Participating manufacturing employers provide a direct workplace perspective. A majority used Aadhaar-enabled onboarding or KYC, UPI-based wage credit and EPFO digital services, while a smaller share used DigiLocker. Employers consistently considered digital and numeracy literacy at least moderately important in hiring. Most assessed DPI-enabled wage credit as having a positive effect on women's financial autonomy, although the reported strength of that effect varied and a smaller share observed no discernible effect. A majority also reported that the number of women employees had increased over the preceding three years, while the remaining participants reported stability.

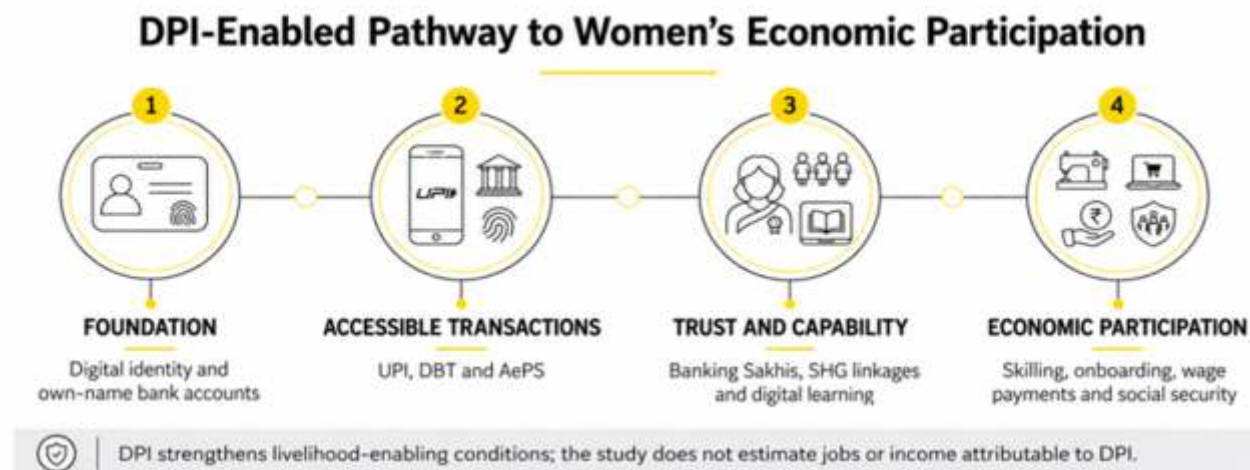
These findings show how DPI can support the transition from financial access to formal economic participation by enabling identity verification, digital wage receipt, social-security administration and work-relevant capability.

They do not establish that DPI caused the reported employment trend, but they demonstrate that DPI rails are being used within the systems through which women enter and participate in formal work.

5. A connected pathway from access to economic participation

Evidence from women non-users adds an important inclusion perspective. All participating women held a sole bank account in their own name, and a large majority received benefits through direct account credit while withdrawing with assistance. Nearly half identified family support as an adoption enabler, followed by trusted local hand-holding and access to a personal device. This indicates how account ownership and assisted channels can keep women connected to the digital economy while confidence and independent use develop.





Taken together, the relevant instruments point to a connected pathway: reliable digital identity and accounts establish the foundation; UPI, DBT and AePS make transactions more accessible; Banking Sakhis and SHG linkages build trust and capability; and industry adoption extends these rails into skilling, onboarding, wage payments and social security. Across participating stakeholders, DPI's most defensible positive contribution is therefore its role in strengthening the conditions that enable women to participate in livelihoods and formal economic activity.

6. Conclusion

The primary research indicates that DPI is strengthening the foundations of women's livelihood and economic participation. Across participating stakeholders, frequent use of UPI and other digital services, reduced transaction-related travel and time, trusted last-mile support, and the integration of digital identity, wage-payment and social-security systems into workplaces collectively made financial and public services more accessible and usable for women.

The evidence also shows that digital infrastructure is most effective when combined with Banking Sakhis, SHG–bank linkages, digital capability and industry participation. While the study does not quantify employment or income gains attributable to DPI, it demonstrates a credible pathway through which DPI can lower participation barriers, support greater financial agency and connect women more effectively with livelihood, enterprise and formal-work systems. This integrated model offers a relevant basis for BRICS knowledge exchange on inclusive digital ecosystems.

3 CHAPTER

Enhancing Access to Essential Services - Healthcare, Education and Governance



3 CHAPTER

Enhancing Access to Essential Services – Healthcare, Education and Governance

3.1 Case study 4: Digital Health and Telemedicine

Frontline-assisted digital access supporting women's experience of teleconsultation

Core finding: Within the surveyed sample, e-Sanjeevani's frontline-assisted model enabled women to access remote consultations easily, reduced travel to higher-level health facilities and received favourable assessments for comfort, privacy and willingness to recommend. Community Health Officers also consistently recognized improved access to care, including specialist services.

Evidence base and interpretation

All nine primary-research instruments were reviewed. Only the women telemedicine-user and healthcare-provider instruments directly addressed this case study. The analysis draws on a focused participant group of women telemedicine users in Uttar Pradesh and Community Health Officers. Participating stakeholder groups are analysed separately using question-specific valid bases. The findings are descriptive, purposive and unweighted. They should be read as indicative insights reflecting the perspectives of participating stakeholders rather than as statistically representative estimates of clinical outcomes or national programme impact.

1. National platform context

eSanjeevani is India's national telemedicine service. It operates through a provider-to-provider model connecting Ayushman Arogya Mandirs with specialist hubs and an outpatient model enabling patients to consult providers remotely. As of 17 December 2025, the Ministry of Health and Family Welfare reported more than 432 million consultations, supported by 136,571 spokes, 18,176 hubs and 781 online OPDs across all States and Union Territories. Women constituted 57% of beneficiaries, demonstrating the platform's substantial reach among women.

2. Frontline facilitation enables a positive user experience

Frontline facilitation enabled access to teleconsultation: Large majority of participating women were supported by Health and Wellness Centre staff, while a



smaller share received assistance from a family member. This indicates how trusted frontline support can translate digital availability into accessible healthcare for women.

All participating women found teleconsultation easy or very easy to access, while a large majority felt comfortable or very comfortable discussing their health concerns with the remote doctor. Among participants providing a valid frequency response, a majority had used telemedicine more than once during the preceding 12 months, indicating repeat engagement within the focused participant group.

Frontline facilitation as an inclusion pathway: Health and Wellness Centre staff and family assistance enabled women to navigate the platform and complete remote consultations, extending digital healthcare access beyond those able to use the platform independently.

3. Teleconsultation reduces travel and receives favourable patient assessments

All participating women providing a valid response reported that teleconsultation reduced the need to visit a higher-level health facility, substantially or to some extent. This indicates a clear access benefit within the focused participant group, although the distance, time and expenditure saved were not quantified.

Service acceptability was consistently favourable. A large majority of participating women rated consultation privacy and confidentiality satisfactory or very satisfactory, while a smaller share considered them acceptable. Similarly, large majority were likely or very likely to recommend eSanjeevani to other women, comprising majority were very likely and less than half who were likely; a smaller share was neutral. Together with the positive comfort and repeat-use findings, these responses indicate strong acceptability among participating stakeholders.

General medicine accounted for majority of participating women's primary consultations, followed by lower share of chronic-disease management and specialist referral. Provider responses reinforced the platform's strong general-care role: a majority of participating Community Health Officers identified general medicine among the highest-volume teleconsultation areas for women, while smaller shares identified paediatric care and dermatology.

Among participating women providing a valid response on the most important service improvement, about half prioritised local-language interaction and fewer prioritised shorter waiting times, better connectivity, greater availability of women doctors and improved access to prescribed medicines. These priorities indicate practical opportunities to strengthen an already positively assessed teleconsultation model.



4. Providers recognize improved access and identify conditions for continued scale

All participating Community Health Officers rated teleconsultation at least moderately effective for rural women and perceived improvement in women's access to specialist care, with assessments ranging from moderate to transformative improvement. These indicative provider perspectives position telemedicine as a valued extension of rural healthcare while identifying the operational foundations for continued expansion.

Provider assessment	Indicative response pattern	Positive interpretation
Provider-rated effectiveness	A smaller share rated it effective; a majority rated it moderately effective	Majority considered teleconsultation at least moderately effective for rural women.
Improved specialist access	A majority reported moderate improvement; smaller shares reported significant or transformative improvement	Majority perceived improvement; two reported significant or transformative improvement.
Support-staff adequacy	A smaller share rated support highly adequate; a majority reported mixed adequacy	All recognised an existing support structure, with scope to strengthen consistency.
Readiness for further scale	Most reported partial or substantial readiness; a smaller share reported limited readiness	All reported some level of readiness, including two assessing the system as largely ready.

Provider priorities for strengthening delivery

A majority of participating providers identified connectivity and bandwidth as the principal operational consideration, while a smaller share selected documentation burden. A majority prioritised integration with ABHA or digital health records as the improvement most likely to strengthen effectiveness, while a smaller share selected multilingual interfaces.

Open-ended provider responses further illustrated the conditions that can strengthen telemedicine's access benefits:





These anonymous accounts reinforce the structured findings by highlighting specialist availability and continuity, reliable connectivity, confidentiality, digital capability, awareness and trust as complementary foundations for strengthening women's access to telemedicine.

5. A scalable model for gender-responsive digital healthcare

The patient and provider evidence presents a connected delivery model. Digital infrastructure enables remote connection with healthcare providers; frontline facilitation makes that connection accessible; and language support, reliable connectivity, integrated health records and continuity across consultation, prescription, referral and follow-up strengthen the quality and inclusiveness of delivery.

DPI contribution: Within the surveyed sample, eSanjeevani provided the digital rail through which frontline-assisted teleconsultation became easy to access, reduced travel requirements and connected women with remote clinical support. The model demonstrates how technology and trusted human assistance can work together to widen participation in digital healthcare.

6. Conclusion

The primary research presents a positive, exploratory account of frontline-assisted telemedicine. Participating women consistently reported easy access, reduced travel to higher-level health facilities, comfort in discussing health concerns, and favourable assessments of privacy and willingness to recommend. A majority of those providing a valid frequency response had used teleconsultation more than once, indicating that it was experienced as more than a one-time access channel.

Participating Community Health Officers reinforced this picture: all considered teleconsultation at least moderately effective for rural women and all perceived improvement in access to specialist care. These findings are indicative insights from a focused participant group and are not statistically representative; they do not estimate clinical outcomes or national-level impact. Within this evidence boundary, they highlight emerging trends, shared delivery conditions and opportunities for a scalable model in which India's digital health

infrastructure, supported by trusted frontline facilitation, can make healthcare more accessible and acceptable to women.

3.2 Digital Literacy and Skilling for Women

Digital Public Infrastructure (DPI) in India has played a transformative role not only in expanding digital literacy but also in enabling continuous skilling, particularly for women. Unlike traditional models that treat literacy as a one-time intervention, DPI integrates access, usage, and skill development into a single ecosystem, where individuals learn and upgrade their capabilities through regular interaction with digital platforms.

As services such as Aadhaar-enabled authentication, UPI (launched in 2016), and Direct Benefit Transfers (DBT) became integral to daily life, users, many of them first-time digital entrants, began acquiring practical skills such as mobile navigation, digital identity verification, and online transactions. This has contributed to the rapid expansion of digital usage, with India reaching 692 million internet users in 2023.

Beyond basic literacy, DPI has been instrumental in facilitating structured digital skilling initiatives. Programs such as the Pradhan Mantri Gramin Digital Saksharta Abhiyan (PMGDISHA), launched in 2017, have trained over 6 crore individuals in essential digital skills. Crucially, DPI platforms provide the application layer for these skills, ensuring that training is not theoretical but immediately usable for banking, payments, and accessing government services. This linkage between training and application strengthens retention, builds confidence, and encourages further skill development.

For women, this DPI-led skilling ecosystem has had a particularly strong impact. With over 56 crore Jan Dhan accounts opened since 2014, around 56% held by women, there is a direct incentive for women to engage with digital financial tools. The integration of these accounts with mobile-based platforms such as UPI has enabled women to progress from basic account ownership to active financial management, with their share in UPI transactions now exceeding 30%. This shift reflects a transition from access to functional and financial skilling, where women gain the ability to manage money, make digital payments, and participate in economic activities independently.



DPI also supports advanced and livelihood-oriented skilling by creating digital pathways for entrepreneurship and employment. Initiatives such as Internet Saathi (2015), which has reached over 15 million rural women, demonstrate how digital literacy evolves into income-generating skills such as using online platforms for business, accessing market information, or delivering digital services within communities. In this way, DPI acts as a bridge between foundational literacy and economic capability building.

Another critical contribution of DPI is its ability to reduce barriers to skilling. Through low-cost, interoperable, and user-friendly systems, it allows women, especially in rural and semi-urban areas, to acquire skills without formal training environments. Features such as mobile-first access, local language interfaces, and assisted service points (e.g., Common Service Centres) create an enabling environment for continuous, self-paced learning.

However, gaps remain in translating access into advanced skills, highlighting the need for targeted skilling interventions that focus on confidence-building, cybersecurity awareness, and higher-order digital competencies.

In conclusion, DPI functions as both a platform for digital literacy and a pipeline for ongoing skilling. By embedding skill acquisition within everyday digital interactions, it transforms digital literacy from a static goal into a dynamic, continuous process. This integrated approach is particularly significant for women, as it not only enhances their ability to access digital systems but also equips them with the skills needed for financial independence and sustained economic participation.

3.3 Case study 5: Digital Skilling as a Pathway to Employment

Primary research on employer demand, workplace DPI integration and private-sector initiatives

Core finding: *Within the surveyed workplaces, digital and numeracy capability was consistently valued in entry-level hiring, while DPI already supported onboarding, wage receipt, document management and social-security administration. Together with company-led digital literacy and skilling initiatives, these systems strengthen the pathway through which women can enter and participate in formal work.*

Evidence base and interpretation

All nine primary-research instruments were reviewed for relevance. This case study uses structured evidence from a select cohort of FICCI member companies and a focused participant group of eligible manufacturing employers. Participating



stakeholder groups are analysed separately using question-specific valid bases. The findings provide indicative, exploratory insights into employer practices and the conditions supporting women's workforce participation across participating organizations. They are not statistically representative and are intended to identify emerging patterns rather than quantify jobs, placements or income gains attributable to digital skilling or DPI.

1. India's digital skilling architecture connects learning with opportunity

Skill India Digital Hub (SIDH) provides a national digital platform through which users can explore skill courses, obtain certification and access jobs and apprenticeship opportunities. By bringing learning and employment services onto a common digital interface, SIDH creates infrastructure that can support more connected pathways from capability development to work.

The Periodic Labour Force Survey 2025 reported a female labour-force participation rate of 40.0% and a female worker-population ratio of 38.8% among persons aged 15 years and above. Among persons aged 15–59, 4.2% had received or were receiving formal vocational or technical training; among women in this age group who had received such training, 51.4% were in the workforce. These national indicators underscore the relevance of accessible, employment-oriented skilling and digital systems that can connect training, credentials and opportunities.

2. Employers consistently value foundational digital capability

All participating eligible employers considered digital literacy and basic numeracy at least moderately important when hiring women for entry-level roles. Half rated these capabilities very important, while smaller shares rated them important or moderately important. This indicative finding establishes a clear employer-side link between foundational digital capability and perceived employability across participating workplaces.

Recruitment was undertaken through employer-led channels: participating employers were evenly divided between internal training academies and direct community outreach. These approaches indicate that employers are already investing in local pathways for identifying and preparing women candidates. The wider digital skilling architecture offers scope to reinforce such pathways through discoverable courses, portable credentials, apprenticeships and job matching.

3. Workplace DPI supports women's participation in formal employment

DPI was embedded across several employment processes in participating workplaces. A majority of participating employers used Aadhaar-enabled onboarding or KYC, UPI-based wage credit and EPFO/ESIC digital services, while half used DigiLocker. This indicates that digital infrastructure is already supporting the



administrative journey from entry into employment to wage receipt, document verification and social-security access.

Employer perceptions also indicate a positive financial-agency contribution. Half of participating employers assessed DPI-enabled wage credit as having a significant positive effect on women's financial autonomy, while smaller shares reported a moderate or no discernible effect. Although perception-based and exploratory, the evidence indicates that most participating employers viewed direct digital wage receipt as strengthening women's control over employment income.

4. Women's workplace participation increased across most surveyed employers

A majority of participating eligible employers reported that the number of women employees had increased over the preceding three years, while a smaller share reported stability. Women comprised less than a fifth of the workforce in most participating workplaces and about a third in a smaller share, indicating both positive movement and headroom for continued participation growth. These indicative employer perspectives provide contextual evidence of women's growing workforce participation alongside the adoption of digital skilling and DPI-enabled workplace systems.

The employer evidence nevertheless clarifies how skills and participation support work together. Only a smaller share identified a limited supply of skilled women candidates as the principal hiring barrier; half selected family or social pressure, while another smaller share identified mobility and accommodation constraints. For retention, half prioritised childcare and welfare facilities, while smaller shares selected on-site accommodation and transport or mentorship and peer networks. Digital skilling therefore appears most effective as part of a broader employment ecosystem that combines capability with safe, supportive conditions for entry and retention.

5. Private-sector initiatives are expanding women's digital capability

Among participating FICCI member companies, a majority reported active women-focused digital-empowerment initiatives, while a smaller share had an initiative planned. Digital literacy was the most common theme, followed by digital skilling and women-led entrepreneurship support were each reported by less than half. These indicative findings show how industry is complementing public digital infrastructure with capability-building and livelihood-oriented support.

Among participating companies providing valid responses on DPI rails, a majority reported using Aadhaar, nearly half reported using UPI, and a smaller share reported using SIDH; responses were multi-select. The evidence indicates that company initiatives are already drawing on core digital identity and payment rails, while also pointing to an opportunity for SIDH to become more deeply connected with private-sector skilling and employment pathways. A clear majority of participating



companies expressed interest in BRICS knowledge sharing or openness to exploring it, providing a basis for exchange on women-centred digital capability models.

6. A connected pathway from digital capability to formal work

Taken together, the two respondent groups show a connected pathway: company initiatives build digital literacy, skilling and enterprise capability; employers recognise these capabilities in hiring; and workplace DPI supports onboarding, wage receipt, credential management and social-security administration. SIDH provides national infrastructure through which learning, certification, jobs and apprenticeships can be brought together, while employer-led academies and community outreach demonstrate practical demand-side channels.

The primary research does not establish that digital skilling or DPI caused the reported increase in women employees. Its most defensible positive attribution is that digital capability and DPI strengthen the systems through which women prepare for, enter and participate in formal employment. The evidence also shows that this pathway is strongest when digital skilling is combined with recognised credentials, employer engagement, safe mobility, childcare and workplace retention support.

7. Conclusion

Digital skilling and DPI emerge from the primary research as complementary enablers of women's formal economic participation. Across participating eligible workplaces, foundational digital capability was consistently valued, and DPI was already used in processes that make employment more accessible and administratively connected—from onboarding and document verification to wage payment and social security. Among participating FICCI member companies, investment in digital literacy, skilling and entrepreneurship further indicates industry's role in building women's capability to use these systems.

Within the evidence boundary of this study, these exploratory findings provide valuable evidence on emerging trends, shared challenges and opportunities across participating organizations. They are not statistically representative and do not establish causality. Their positive contribution lies in indicating that digital capability can improve readiness for contemporary work, while interoperable public digital rails can support women's transition into and participation in formal employment systems. Strengthening the connection among training, verified credentials, employer demand and supportive workplace conditions can deepen this pathway and offers a relevant area for BRICS knowledge exchange.

3.4 E-Governance and Access to Rights

Digital access to documents and certificates



Case-study thesis

India's digital identity and authenticated document infrastructure demonstrates how DPI can strengthen e-governance by reducing documentation-related friction in identity verification, certificate access and public-service delivery. Aadhaar, DigiLocker and related verification systems create an enabling layer through which citizens can access, store, share, and verify official records digitally.

The relevance for women's empowerment lies in this rights-access pathway. Secure access to verified documents can strengthen women's access to education, healthcare, welfare, financial services and employment, particularly where physical documentation, mobility constraints or dependence on intermediaries create barriers. However, digital document access becomes meaningful only when platform scale is matched by device access, digital literacy, assisted but private service channels, institutional acceptance of digital credentials, consent protections and privacy safeguards.

Figure 1: Selected indicators of India's digital identity and document ecosystem.



1. Context: digital documents as a rights-access layer

Official identity documents and government-issued certificates are frequently required to claim education, healthcare, financial services, employment opportunities and welfare benefits. Under paper-based systems, citizens often have to submit the same physical documents repeatedly, undergo manual verification, and bear the risk of administrative delays, document loss, damage, or forgery. These frictions affect all citizens, but they can be more consequential for women where mobility constraints, limited control over household documents, lower digital confidence or dependence on family members and intermediaries restrict service access.

Digital Public Infrastructure can reduce these documentation-related barriers by creating shared and interoperable systems for secure identity verification,

authenticated document exchange, and electronic service delivery. In India, Aadhaar provides the foundational digital identity layer, while DigiLocker functions as a trusted digital document platform that enables citizens to receive, store, retrieve and share authenticated electronic records issued by authorized organizations. Together with eSign, QR code-based verification and sectoral platforms such as CoWIN, the National Academic Depository and ABDM-linked health systems, these tools support a shift from physical document possession to authenticated digital access.

This shift is important from a rights-access perspective. When identity documents, educational records, health certificates and other government-issued credentials can be securely accessed and verified digitally, the burden of proving identity, eligibility, or prior records can be reduced. For women, this can strengthen the enabling conditions for accessing services, entitlements and opportunities, provided digital systems are designed with privacy safeguards, assisted but confidential access, local-language usability and protections against exclusion.

2. India's Digital Identity and Document Ecosystem

India's digital document-access ecosystem is anchored in the wider architecture of Digital Public Infrastructure. Global DPI frameworks commonly identify digital identity, payments, and trusted data exchange as foundational layers for scalable and interoperable service delivery. Within this architecture, digital document access sits at the intersection of identity verification and trusted data exchange: citizens must be identifiable, records must be issued by authorized institutions, and documents must be verifiable across service-delivery systems.

India's ecosystem operates through three mutually reinforcing layers. Aadhaar provides the foundational identity layer by enabling secure identity verification at a population scale. DigiLocker and related repositories provide the document layer by enabling electronic issuance, storage, retrieval, and sharing of official records. Verification interfaces then allow authorized institutions, including schools, hospitals, employers, banks, government departments and other service providers, to validate documents

The scale of this ecosystem reflects both population coverage and institutional depth. The UIDAI dashboard records over 144.66 crore Aadhaar numbers generated, underscoring the reach of India's foundational identity infrastructure. The identity ecosystem is further supported by a large operational network of registrars, enrolment agencies, certified operators and registered enrolment stations, indicating that digital identity is backed by institutional infrastructure at scale.

The document layer has also expanded significantly. As per the June 2026 DigiLocker dashboard figures, the platform had 70.69 crore registered users and 26.52 crore active users, supported by 2,746 issuer organizations and 3,998 requester organizations. These figures indicate that India's authenticated document ecosystem



is not limited to individual user registration; it is supported by a wider network of institutions that issue, request and verify digital records across service-delivery contexts.

For this case study, these indicators demonstrate the maturity of the enabling infrastructure. They show that India has built a population-scale architecture through which identity can be verified, official records can be accessed digitally, and documents can be shared with authorized institutions for service delivery. However, these cumulative ecosystem indicators should not be read as direct measures of women's independent use of digital document services. Their relevance lies in the enabling conditions they create for women's access to rights-linked services, provided platform access is supported by digital literacy, device access, institutional acceptance, consent safeguards and trusted last-mile support.

3. Digilocker and Authenticated Digital Documents

DigiLocker is a core digital governance platform under the Digital India programme of the Ministry of Electronics and Information Technology. Its policy significance lies in creating a trusted layer for issuing, storing, retrieving, sharing, and verifying authenticated electronic records.

Unlike conventional cloud storage, DigiLocker functions through direct integration with authorized issuer organizations and requesting institutions. Issuer organizations can make digitally signed or authenticated documents available in a citizen's DigiLocker account, while citizens can retrieve and share these records with authorized requesters for verification. The platform also supports secure document sharing, QR code-based verification, and eSign functionality, thereby reducing dependence on physical records and manual verification processes.

Figure 2: Illustrative rights-linked service domains supported by authenticated digital documents.



The platform supports a broad range of documents required for rights-linked services and opportunities. These include Aadhaar details, birth certificates, school mark sheets, higher-education records, driving licenses, vehicle registration certificates, vaccination certificates and other government-issued credentials. The value of the platform therefore lies not only in digital storage, but in enabling authenticated document exchange across education, healthcare, transport, finance, employment, welfare and public-administration workflows.

DigiLocker should therefore be understood as part of India's wider paperless governance ecosystem, alongside platforms such as Aadhaar, UMANG, API Setu and other Digital India initiatives. Together, these systems support a shift from physical document possession to authenticated digital access, enabling citizens and institutions to complete verification-dependent service journeys more efficiently.

For women, this can be particularly relevant where mobility constraints, limited control over household documents or dependence on intermediaries make repeated physical documentation burdensome. However, the empowerment effect should be understood as an enabling pathway: authenticated digital documents can reduce service-access friction, but women's ability to benefit also depends on device access, digital confidence, consent, privacy and last-mile support.

Illustrative document-access use-cases supported through DigiLocker

Issuer / institutional source	Illustrative document or service	Relevance to service access
UIDAI	Aadhaar details	Identity verification and access to public services
CBSE / Parinam Manjusha	School mark sheets and certificates	Admissions, scholarships, skilling and employment verification
National Academic Depository	Higher-education academic records	Credential verification for higher education and employment
Ministry of Road Transport and Highways	Driving licence and vehicle registration certificates	Transport services, identity-linked verification and mobility-related services
Municipal bodies	Birth certificates and civic records	Age, identity, welfare eligibility and public-service access
Ministry of Health and Family Welfare / CoWIN	Vaccination certificates	Health documentation, travel, service access and record portability
Regulators such as RBI and SEBI	KYC and onboarding-related verification	Financial services and regulated onboarding processes
Ministries and departments	Beneficiary records and DBT eligibility checks	Welfare access, entitlement verification and scheme delivery

4. Evidence From Education, Health and Governance Use-Cases

Authenticated digital documents are most relevant where citizens are required to prove identity, eligibility, qualifications, service history, or prior records. The evidence shows that digital document systems are being used across education, health, and governance workflows. For women, the significance lies in reducing documentation-related friction in accessing services, entitlements and opportunities, particularly where mobility constraints, dependence on household-held documents or repeated physical verification can create barriers.

4.1 Educational documents and academic mobility

Education represents one of the most visible applications of authenticated digital documents in India's DPI ecosystem. The integration of school boards, higher-education repositories, DigiLocker and the National Academic Depository enables students to access digitally authenticated mark sheets, certificates and academic credentials. This reduces dependence on physical certificates, which may otherwise be misplaced, damaged or repeatedly submitted across admissions, scholarship applications, skilling programmes, employment processes and institutional verification workflows.

A key implementation example is the integration of CBSE records with DigiLocker in 2016, which enabled students to receive authenticated digital mark sheets and certificates through the platform. Official implementation documentation records that DigiLocker registrations increased from approximately 10 lakh to 35 lakh users within one week of the CBSE integration, indicating rapid public adoption when a high-demand service was linked to the platform.

The National Academic Depository further expanded the availability of authenticated higher-education records in digital form, simplifying verification for students, educational institutions and employers. Adjacent education DPI initiatives such as DIKSHA and the National Digital Library also show how India's digital public infrastructure is being used to support access to educational resources. However, these should be understood as complementary education platforms, while DigiLocker and the National Academic Depository are directly relevant to authenticated academic documents and credential verification.

Furthermore, the National Scholarship Portal (NSP) demonstrates how India's DPI supports women's access to education-related entitlements through Aadhaar-based One Time Registration (OTR), e-KYC, digital identity verification and Direct Benefit Transfer (DBT). In Academic Year 2025–26, the portal recorded about 11.1 lakh female applications, around 9.5 lakh verified female applications and over ₹905 crore disbursed to female beneficiaries under the Post Matric/Top Class/MCM category. These figures highlight the scale at which DPI enabled scholarship services are supporting female beneficiaries.



From a gender perspective, the relevance is indirect but important. Authenticated education records can reduce procedural friction for girls and women seeking admission, scholarships, skilling opportunities, employment or credential verification. This can support continuity of learning and mobility across institutions, particularly where time constraints, mobility restrictions or household-level dependence make repeated physical documentation difficult. The evidence should therefore be interpreted as an enabling pathway: digital education records strengthen access and verification conditions, but do not by themselves establish measurable changes in women's educational decision-making or empowerment outcomes.

4.2 Health records, vaccination certificates and digital health services

Digital document access is also relevant to health service delivery. India's digital health ecosystem includes platforms such as CoWIN, Ayushman Bharat Digital Mission, eSanjeevani, eHospital and Aarogya Setu, which together support different aspects of digital health service delivery, health records, teleconsultation and citizen-facing health access.

CoWIN demonstrated the role of a population-scale digital platform in generating, retrieving and verifying authenticated vaccination certificates. The platform functioned as the digital backbone of India's COVID-19 vaccination programme by integrating vaccine administrators, healthcare workers and beneficiaries through a single digital system. It managed over 220 crore vaccine doses and enabled secure generation and retrieval of vaccination certificates, which could also be accessed and shared through DigiLocker. This illustrates interoperability between India's digital public platforms.

India's digital health ecosystem has also expanded through eSanjeevani and the Ayushman Bharat Digital Mission. The PIB backgrounder cited in the reviewed material records more than 45.42 crore eSanjeevani consultations and more than 2.3 lakh healthcare providers onboarded by March 2026. ABDM further supports the creation of interoperable digital health records, enabling health information to be linked and accessed across service contexts.

The role of DPI in supporting women's health entitlements is further evident under the Pradhan Mantri Matru Vandana Yojana (PMMVY), where Aadhaar-linked beneficiary identification and the Direct Benefit Transfer (DBT) system are used to deliver maternity benefits. As of 30 April 2026, the Mission Shakti Dashboard reports 4.29 crore beneficiaries and ₹20,174.07 crore disbursed under the scheme, illustrating how India's DPI ecosystem supports the delivery of maternal health benefits at scale.

For women, the relevance lies in record continuity, portability and service follow-up. Digital health records and certificates can support maternal health, child health, chronic disease management, vaccination history, teleconsultation follow-up and referral continuity. They can also reduce the burden of carrying paper records across



facilities. The evidence therefore supports a service-access pathway: digital health documentation can improve access to health-related services and continuity of care, while broader health outcomes continue to depend on service quality, affordability, provider availability, privacy and last-mile access.

4.3 Governance documents and public services

Beyond education and health, authenticated digital documents support a wide range of governance and public-service workflows. These include welfare eligibility verification, identity documentation, transport records, recruitment verification, KYC, beneficiary verification, DBT eligibility checks, and other administrative processes that require official records.

DigiLocker enables citizens to access authenticated electronic versions of documents such as birth certificates, driving licenses, vehicle registration certificates, and other government-issued records. These documents can be shared digitally with requesting organizations, reducing the need for repeated submission of physical copies. Its use in recruitment and verification workflows further illustrates how authenticated credentials can simplify administrative checks and reduce the burden on both citizens and institutions.

The broader governance ecosystem also includes platforms such as UMANG, API Setu and Aadhaar, which collectively support paperless and citizen-centric public-service delivery. Within this ecosystem, DigiLocker contributes to authenticated document exchange by allowing verified records to move across departments, service providers, and user-facing workflows.

From a governance perspective, digital document exchange can reduce transaction costs associated with document submission, minimize duplication of records, and improve the efficiency of verification processes. For women, this can be particularly relevant where documents are held by other household members, where physical visits impose time and mobility costs, or where intermediaries are required to complete documentation processes. Authenticated digital document exchange can therefore reduce procedural barriers and improve service-delivery efficiency, provided requesting organizations are integrated with digital verification systems and users have access to assisted, consent-based and privacy-protective channels.

Synthesis

Across education, health and governance, authenticated digital documents help reduce a recurring administrative barrier between citizens and public services: the need to obtain, preserve, carry and repeatedly submit physical records. By making identity documents, certificates and official records easier to retrieve, share and verify, digital document infrastructure strengthens the service-access layer of e-governance.



For women, this has important empowerment relevance, even if the evidence should be understood as an enabling pathway rather than a direct outcome claim. Where physical documentation, mobility constraints or dependence on intermediaries restrict access, authenticated digital records can improve the conditions under which women access rights, entitlements and opportunities. The impact is strongest when digital document systems are accepted by institutions, supported through safe assisted channels, and designed around privacy, consent and usability.

5. Implications for women's access to rights

Access to authenticated identity documents and official certificates is often a prerequisite for claiming rights, services and opportunities. School admissions, scholarships, employment, bank account opening, health services and welfare programmes frequently require proof of identity, age, residence, education, health status or eligibility. For women, these documentation requirements can create additional barriers where mobility constraints, limited personal custody of documents, dependence on household members, lower digital confidence or limited control over phones and account-linked credentials restrict service access.

Authenticated digital document infrastructure can reduce these barriers in four ways. First, it provides secure access to verified records. Second, it reduces the need for repeated submission of physical documents. Third, it enables faster verification by authorized institutions. Fourth, it supports continuity of records across life events such as migration, marriage, school transition, employment, healthcare visits or changes in residence.

The relevance for women's empowerment lies in this rights-access pathway. Digital documents can make it easier for women to retrieve, share and verify records required for education, healthcare, welfare, financial services and employment. However, this potential depends on whether women can access and use these systems themselves; whether platforms are available in accessible, local-language and low-literacy formats; whether assisted channels protect privacy and consent; and whether institutions accept digital credentials without imposing parallel paper requirements.

The gender lens is important because digital access remains uneven. NFHS-6 indicates that 63.6% of women aged 15–49 own and use a mobile phone, while 64.3% have ever used the internet. These indicators point to expanding digital readiness among women, but they also underline the need for assisted, privacy-protective and offline-supported pathways for women who are not regular smartphone or internet users.

The policy implication is that digital documents should be treated not only as a platform service, but as part of a women-responsive access journey. Authenticated digital records become meaningful when women can retrieve them independently or through safe assistance, share them with confidence, have them accepted by



institutions, and rely on consent safeguards and grievance mechanisms when access fails or records are misused.

6. Evidence interpretation: what digital document infrastructure enables

The secondary evidence demonstrates clear progress in digital identity coverage, authenticated document availability, electronic verification, and administrative efficiency. These outcomes are important because they address a recurring barrier in public-service access: the need to obtain, preserve, carry, and repeatedly submit physical certificates and identity documents.

The strongest evidence is at the level of service-access enablement. Digital identity and document platforms can make it easier for citizens to retrieve verified records, share credentials with authorized institutions, and complete documentation-dependent service journeys. For women, this is particularly relevant where mobility constraints, limited personal custody of documents, reliance on intermediaries or repeated physical verification create additional barriers to accessing services and entitlements.

At the same time, the evidence should be interpreted with appropriate caution. Existing secondary sources do not consistently measure whether women independently control their digital credentials, whether they can access DigiLocker without assistance, whether they control the mobile number linked to Aadhaar or DigiLocker, or whether digital document access has changed women's agency in household or institutional decision-making.

The case-study finding is therefore best understood as an enabling claim. Digital document infrastructure strengthens the conditions through which women can access rights-linked services, but empowerment outcomes depend on women's ability to access and use these systems, institutional acceptance of digital credentials, privacy and consent safeguards, local-language usability, grievance redressal and trusted last-mile support.

7. Priority agenda: from digital documents to women-responsive service access

The next policy priority is to ensure that authenticated digital documents translate into usable, trusted and women-responsive service access. This requires moving beyond platform availability to focus on last-mile usability, institutional acceptance, privacy safeguards, grievance redressal and gender-disaggregated measurement.

Priority areas include:

- Enable assisted but private access: Strengthen support through Common Service Centres, SHGs, frontline workers and local government service points, while ensuring that assistance does not compromise consent, confidentiality or women's control over their documents.



- Design for low-literacy and mobile-first use: Improve local-language, low-literacy and mobile-first interfaces so that women can retrieve, store and share documents with minimal dependence on intermediaries.
- Ensure institutional acceptance: Increase acceptance of digital credentials across schools, colleges, hospitals, banks, employers, transport services and welfare offices to avoid parallel paper requirements and repeated physical verification.
- Build practical user awareness: Run targeted awareness campaigns on document retrieval, QR-based verification, eSign, account recovery, safe sharing of credentials and correction of inaccurate records.
- Measure women's actual use: Track gender-disaggregated indicators such as women's independent access to documents, use of DigiLocker or assisted document services, successful verification attempts, account recovery requests, grievance resolution and service outcomes linked to digital credentials.
- Strengthen privacy, consent and grievance systems: Build clear redressal pathways for document misuse, access failure, incorrect digital records, mobile number changes, account recovery and unauthorized sharing.

The policy objective should be to make authenticated digital documents not only available, but usable, accepted, and trusted. For women, digital records become meaningful when they can be accessed independently or through safe assistance, accepted by institutions without additional paper requirements, protected through consent safeguards and supported by effective grievance mechanisms.

8. Conclusion

India's digital identity and authenticated document infrastructure demonstrates how DPI can strengthen e-governance by creating secure, interoperable and verifiable channels for accessing official records. Aadhaar provides the foundational identity layer; DigiLocker and related repositories provide the authenticated document layer; and verification interfaces enable records to be shared and validated across public and private service providers. Together, these systems reduce administrative friction and make paperless, citizen-centric service delivery feasible at a population scale.

For women, the core relevance lies in the fact that access to rights, entitlements and opportunities is often mediated through identity documents, certificates and proof of eligibility. Authenticated digital documents can strengthen access to education, healthcare, welfare, financial services and employment when women are able to retrieve, share and verify records with confidence, privacy and institutional acceptance.

For BRICS and other emerging economies, India's experience offers a clear policy lesson: digital document infrastructure is most effective when platform scale is



matched by inclusive design, trusted last-mile support, institutional acceptance of digital credentials, data protection, consent safeguards and measurement of women's actual use. The transition from physical documents to authenticated digital records is therefore not only an e-governance reform; it is an important enabling layer for more accessible, efficient and women-responsive public service delivery.

3.5 Impact on Household Decision-Making

From digital access to better-informed financial, health, educational and welfare choices

89.0% currently married women usually participate in three household decisions NFHS-6, 2023-24	89.0% women aged 15-49 operate their own bank/savings account NFHS-6, 2023-24	64.3% women aged 15-49 have ever used the internet NFHS-6, 2023-24	4 in 5 women G2P recipients receive government payments directly into an account Global Findex 2025/ World Bank Blog, 2026
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Case-study thesis:

India's DPI ecosystem has expanded the channels through which women can access financial services, government transfers, digital information, learning resources and health-service interfaces. Secondary evidence suggests that these channels can strengthen the enabling conditions for women's participation in household decision-making by improving access to information, resources, records, entitlements, and service delivery, while also strengthening women's ability to access and exercise control over the resources where supported by the broader household context. However, the evidence should be read as an enabling pathway rather than direct causal proof of changes in intra-household agency, as outcomes also depend on social norms, family structures and women's control over digital devices and financial resources. The core policy task is therefore to move from access and enrolment towards informed, independent, safe and regular use by women.

1. Why household decision-making is a useful empowerment lens

Household decision-making is a critical marker of women's agency, reflecting the extent to which women can participate in choices that shape their own welfare and that of their families. These choices include decisions on healthcare, major household expenditure, children's education, mobility, access to services, and the use of welfare benefits. This lens is especially relevant to an assessment of digital public infrastructure because DPI contributes to women's empowerment not merely through

platform access, but by strengthening the resources, information, documentation, service access and financial channels that women can draw upon within household negotiations.

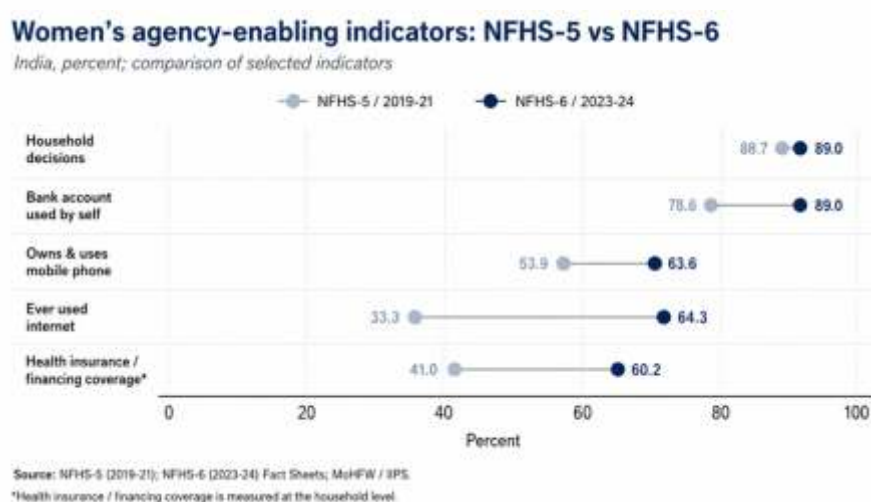
India's DPI ecosystem brings together foundational identity, financial and payment rails, including Aadhaar-enabled authentication, Jan Dhan bank accounts, Direct Benefit Transfers, UPI and Aadhaar-enabled payment services. It also includes sectoral platforms such as DIKSHA and the Ayushman Bharat Digital Mission, which can improve access to education, health records, entitlements, and public services. Drawing on secondary evidence, this case study examines how these systems can support women's financial, health-related, educational and welfare-linked decision-making, while recognizing that DPI creates enabling conditions and should not be interpreted as direct causal evidence of changes in intra-household agency.

2. What the secondary evidence shows

NFHS-6 points to a strengthening enabling environment for women's agency in India. The share of currently married women who usually participate in three household decisions stood at 89.0% in 2023–24, broadly stable compared with 88.7% in NFHS-5. This indicates that the formal decision-making indicator was already high in the earlier survey round and has remained largely steady.

Over the same period, women-specific indicators linked to independent access to services improved more visibly. The share of women aged 15–49 who have a bank or savings account that they themselves use increased from 78.6% to 89.0%; ownership and use of mobile phones rose from 53.9% to 63.6%; and the share of women who had ever used the internet nearly doubled from 33.3% to 64.3%. In parallel, household-level health insurance or financing scheme coverage increased from 41.0% to 60.2%, reflecting wider access to financial protection in healthcare.

Figure 1: Women's decision-making and access-enabling indicators, NFHS-5 vs NFHS-6.
Source: NFHS-6 Fact Sheets / PIB release, 2026.



The evidence therefore suggests that the most visible progress is not in the household decision-making indicator alone, but in the enabling channels that can make women's participation more informed and substantive. Direct access to bank accounts, mobile connectivity, internet exposure, and health-financing coverage can strengthen women's ability to access money, information, records, services, and grievance channels. These inputs matter because household decision-making is shaped not only by whether women are formally consulted, but also by whether they have the resources, documentation, confidence and service access required to exercise meaningful voice within household negotiations.

At the same time, these findings should be interpreted with caution. NFHS indicators establish broad trends in women's agency and access, but they do not by themselves prove that DPI has directly caused changes in intra-household decision-making. The evidence is therefore best understood as indicating that DPI-linked access channels can strengthen the conditions under which women are better positioned to participate in household decisions.

3. Financial and welfare decisions: from account access to digitally enabled use

The clearest pathway through which DPI can support women's household agency is financial, but it is important to distinguish between DPI rails, financial inclusion infrastructure and usage outcomes. Aadhaar-enabled authentication, UPI, and Aadhaar-enabled payment services constitute core digital rails. Jan Dhan accounts provide the account-access layer through which women can receive and use formal financial services, while Direct Benefit Transfers represent a welfare delivery mechanism enabled by the integration of identity, bank accounts and payment systems.

This combined financial inclusion and DPI ecosystem can reduce dependence on intermediaries and create a more direct interface between women, welfare transfers and formal financial services. Where women are able to receive benefits directly into accounts and transact through accessible digital or assisted channels, they may be better positioned to plan household consumption, save, respond to shocks and participate in decisions on the use of welfare resources.

As shown in Figure 2, Global Findex 2025 indicators point to improving account activity and digital welfare-payment use among women in India. The share of women with inactive accounts declined from about one-third in 2021 to 18% in 2024, indicating that formal account access is increasingly being converted into use. Over the same period, the share of women receiving digital government-to-person payments increased from 13% to 24%.

A related but distinct delivery indicator shows that about four out of five women G2P recipients received funds directly into an account. This figure uses a narrower



denominator: it refers only to women who received government payments, not to all women. Taken together, these indicators suggest that digitised welfare transfers and payment systems are helping bridge the gap between account ownership, active use and more direct receipt of benefits.

However, financial inclusion should not be equated with automatic financial autonomy. A woman may hold a bank account but may not independently control the phone, PIN, passbook, debit card, account-linked mobile number or the use of DBT funds. For financial inclusion and DPI-enabled delivery to influence household decision-making, access must be accompanied by control, confidence, privacy, grievance redressal and regular use. The evidence therefore points to an enabling pathway: DPI-linked systems can improve women's access to financial resources and services, but their effect on household agency depends on whether women are able to exercise effective control over those resources.

Interpretation: Financial inclusion should not be read as an automatic financial autonomy. A woman may have an account but may not control the phone, PIN, passbook, debit card, account-linked mobile number or the use of DBT funds. For DPI to affect household decisions, access must be matched by control, confidence, privacy, grievance redressal, and regular use.

4. Health-related decisions: Digital Health Infrastructure and financial protection

DPI can support health-related household decision-making by improving the information, documentation and service-access conditions within which care decisions are made. In the health sector, the relevant DPI layer is digital health infrastructure, particularly systems that enable identification, record-linking, portability, and consent-based sharing of health information. Under the Ayushman Bharat Digital Mission, the ABHA number is designed to help individuals link and access health records across providers, while consent-based data exchange mechanisms can support secure digital sharing of records with registered healthcare providers.

Alongside digital health infrastructure, health-financing coverage provides an important contextual indicator for understanding household health decisions. It should be understood as a related service delivery and financial protection indicator, rather than as DPI itself. Its relevance lies in the fact that financial protection can shape whether households are able to seek formal healthcare, manage treatment costs, and use available entitlements.

NFHS-6 reports that household coverage under a health insurance or financing scheme increased from 41.0% in NFHS-5 to 60.2% in NFHS-6. This expansion is relevant



to women's household agency because the affordability of care, clarity of entitlements and ability to manage claims can influence whether and when households seek treatment. When combined with digital health infrastructure such as ABHA-enabled health records and consent-based information exchange, wider financial protection can strengthen the conditions under which women participate in health-related decisions.

For women, this enabling pathway can be particularly relevant in maternal healthcare, chronic disease management, family health planning, and continuity of care after migration or relocation. However, the evidence should be interpreted with caution. Digital health records and health-financing coverage can improve the conditions for informed health-related decisions, but they do not by themselves establish direct causal evidence of increased intra-household agency. Women's effective participation in health decisions also depends on privacy, digital literacy, provider responsiveness, intra-household norms, and their ability to independently access services.

5. Educational and information decisions: access to learning resources and public-service information

DPI can strengthen the information environment within which households make education- and welfare-related decisions. In this context, DIKSHA should be understood as a sectoral digital public platform for school education, while women's access to mobile phones, internet and assisted digital channels should be treated as enabling conditions that determine whether such platforms can be meaningfully used.

DIKSHA provides a national digital learning platform for students, teachers and parents, supporting access to curriculum-linked learning resources across Indian languages. Where women and girls have reliable access to devices, connectivity and assisted digital support, such platforms can help households make more informed decisions on school continuity, learning support, remedial education and engagement with teachers and schools. More broadly, access to digital public information channels can also improve awareness of scholarships, skilling opportunities, documentation requirements, and welfare schemes.

The relevance of this pathway has increased as women's digital exposure has expanded. NFHS-6 reports that 64.3% of women aged 15–49 had ever used the internet, almost double the level recorded in NFHS-5. This indicator should not be read as a DPI outcome in itself; rather, it is a digital access and readiness indicator that shapes the extent to which women can benefit from education-focused platforms and online public-service information.

The impact of education- and information-related digital systems on household decision-making therefore depends on conditions beyond platform availability. Device



access, language, data affordability, digital confidence, quality and relevance of content, assisted access, and the ability of women and girls to use phones privately and regularly all influence whether digital access translates into meaningful participation in education- and welfare-related household decisions. The evidence should therefore be interpreted as an enabling pathway: digital platforms and information systems can strengthen the resources available to women, but their effect on household agency depends on access, control and use.

6. How DPI can influence household agency

The secondary evidence supports an enabling pathway rather than direct causal attribution. DPI can influence household agency when it reduces women's dependence on mediated access and strengthens their ability to directly access resources, records, learning content, entitlements and public-service information. In practice, this pathway operates through a combination of digital rails, service-delivery systems, and contextual access conditions.

Evidence-led interpretation by decision domain

Decision domain	DPI/Digital channel	Related Service or access layer	Secondary evidence used in this case study	Agency implication
Financial / welfare	Aadhaar-enabled authentication, UPI, AEPS and digital payment systems	Jan Dhan accounts and Direct Benefit Transfers	Account use improved, women's inactive accounts declined, and digital G2P receipt increased	More direct access to welfare resources, improved visibility of transfers, and stronger ability to participate in decisions on benefit use
Health-related decisions	ABDM, ABHA, and digital health record systems	Health insurance / financing schemes, including PM-JAY	Household health-financing coverage expanded from NFHS-5 to NFHS-6	Better access to health information, improved record portability, and stronger conditions for treatment planning
Educational decisions	DIKSHA and digital learning platforms, including PM eVIDYA-linked content	School systems, teacher engagement, scholarships and skilling information	Women's mobile-phone access and internet exposure increased, improving digital readiness	Improved access to learning resources, school-related information, remedial support and education-continuity decisions

Decision domain	DPI/Digital channel	Related Service or access layer	Secondary evidence used in this case study	Agency implication
Entitlements / documentation	DigiLocker, UMANG and scheme portals	Certificates, identity documents, application systems and grievance channels	Government documents and services are increasingly available through digital channels; women's actual use depends on digital access and assisted support	Reduced dependence on intermediaries for documents, scheme information and public-service access

The framework should be interpreted carefully. Not all indicators used in this case study are DPI indicators. Account ownership, account activity, health-financing coverage, mobile-phone use and internet exposure are better understood as contextual or outcome indicators that help assess whether the wider DPI-enabled ecosystem is creating usable conditions for women. Similarly, Jan Dhan, DBT, PM-JAY and scholarships are service-delivery or programme layers that may be strengthened by DPI, but are not themselves equivalent to DPI.

The central implication is that DPI contributes to household agency through mediated pathways. It can improve the availability, portability and usability of resources, records and information; however, its effect on women's decision-making depends on whether women have control over devices and accounts, privacy in use, confidence, digital literacy, grievance redressal and meaningful access to services.

Interpretive note: This case study synthesises secondary evidence to identify enabling pathways between DPI-linked access and women's household agency. Findings from the planned primary research will be used to triangulate these pathways through beneficiary experience, non-user barriers, and stakeholder perspectives.

7. Forward-looking agenda: from access to meaningful use

The next phase of gender-responsive DPI should move beyond enrolment and access metrics towards meaningful-use indicators. For household decision-making, the critical question is not only whether women are included in a digital system, but whether they can use DPI-linked services safely, independently, regularly and with sufficient confidence to influence decisions related to finance, health, education and welfare.

Priority	What needs to change
Track agency-sensitive use, not only access	Move beyond indicators such as account ownership, mobile access or platform registration to measure women's independent use of accounts, DBT funds, digital payments, health records, documents and scheme information.
Enable assisted access without compromising privacy	Strengthen trusted last-mile channels such as Banking Correspondents, BC Sakhis, SHGs, ASHAs, Anganwadi workers and Common Service Centres, while ensuring consent, confidentiality, dignity and women's control over transactions and information.
Close digital-confidence and financial-capability gaps	Embed practical digital and financial literacy around PIN safety, fraud prevention, DBT verification, UPI and AePS use, ABHA-linked record access, document retrieval and grievance filing.
Strengthen grievance redressal and service accountability	Establish clear escalation pathways for failed DBT credits, authentication errors, account-linking issues, digital fraud, health-record access problems, scheme-status disputes and service denial.
Design for local-language and low-literacy use	Prioritise vernacular interfaces, voice-based support, assisted search, visual cues, simple dashboards, feature-phone-compatible journeys and offline-assisted options for low-connectivity contexts.

This agenda recognises that several enabling factors — such as device ownership, literacy, confidence, family support and assisted service channels — are not DPI in themselves. However, they determine whether women can meaningfully use DPI-enabled services. The policy focus should therefore shift from building access alone to ensuring that women have the capability, privacy, trust and support required to convert digital access into substantive participation in household decision-making.

8. Conclusion

The secondary evidence suggests that India's DPI-enabled ecosystem has strengthened several conditions that can support women's participation in household decision-making. Digital identity, payment rails, DBT-linked delivery, digital financial services, digital health infrastructure and education platforms have expanded the channels through which women can access resources, records, information, entitlements and services. Related indicators, such as account usage, mobile and internet exposure, and household health-financing coverage, further indicate that the broader access-and-use environment has improved.

However, household agency is not produced by digital access alone. The ability of women to influence financial, health, educational and welfare-related decisions depends on whether they can use these systems independently, control the resources



and information that flow through them, trust the safety and privacy of service interfaces, and act within household and community contexts that permit meaningful choice.

Key implication: DPI has created a stronger enabling environment for women's participation in household decisions, but the next phase must focus on women-controlled usage, privacy, safety, grievance redressal, assisted-but-confidential access, and measurement of actual agency outcomes. The planned primary research for this report will be important for triangulating these secondary pathways through women's lived experiences, non-user barriers, and stakeholder perspectives.



4 CHAPTER

Role of Private Sector Innovation in Scaling DPI Benefits



4 CHAPTER

Role of Private Sector Innovation in Scaling DPI Benefits

4.1 DPI and the API Economy

The API economy and DPI are converging to transform how societies and businesses exchange value. DPI acts as a foundational, modular digital operating system (built on identity, payments and data exchange layer), while the API economy provides the programmable interface that allows private enterprises, and developers to build on top of it.

A leading example is India Stack, a suite of open APIs and digital public goods that enables governments, businesses, startups, and developers to deliver online, paperless, and consent-based services. It has evolved into a globally recognized model of public-private co-creation at scale. While the government builds the foundational digital rails, the private sector develops applications on them, transforming infrastructure into tangible economic and social value.

This API-driven model enables:

- Non-linear value creation through compounding innovation
- Mass-scale, low-cost service delivery
- Rapid ecosystem expansion across sectors

The result is a platform economy, where public infrastructure acts as a base layer, and private firms continuously build differentiated, user-centric services on top.

API-First Design as an Enabler of Co-Creation

An API first, modular system, enables seamless integration across sectors and stakeholders in the following way as it offers:

Core Architecture

- Identity (Aadhaar): Authentication and e-KYC APIs
- Payments (UPI): Real-time interoperable payments APIs
- Data Sharing (DEPA): Consent-based data exchange

Design Principle: Shared Rails

- Government builds baseline infrastructure



- Private players build interfaces, algorithms, and services

This “shared rails” approach underpins a public-private partnership (PPP) model, where public sector ensures trust, scale, and interoperability and private sector ensures innovation, usability, and market penetration

From Infrastructure to Applications

Private sector innovation scales DPI by translating APIs into consumer-facing applications, creating sector-specific solutions (fintech, healthtech, commerce) and embedding services into everyday workflows. As a result, foundational infrastructure becomes accessible, usable, and widely adopted. For instance, Fintechs leverage Aadhaar-based e-KYC, UPI, and consent-based data sharing frameworks to provide low-cost savings products, digital payments, microcredit, and insurance to women customers who may have previously been excluded from formal financial systems. Digital commerce platforms enable women entrepreneurs, self-help groups (SHGs), and microenterprises to access wider markets and receive instant digital payments. Similarly, healthtech and edtech platforms use digital identity and payment rails to deliver affordable healthcare consultations, skilling programmes, and educational services to women in remote and underserved regions. By building on shared DPI rails, private firms are able to reduce customer acquisition costs, overcome documentation barriers, and offer personalized services at scale.

Illustrative Example: Aadhaar-enabled e-KYC & e-Sign

A compelling illustration of how API-led DPI drives large-scale impact can be seen in the adoption of Aadhaar-enabled e-KYC and e-Sign services. By digitizing identity verification and document authentication, these APIs have fundamentally transformed customer onboarding processes across the financial sector.

Previously, onboarding was a time-consuming and paper-intensive process, often involving significant costs and operational friction. With the introduction of e-KYC and e-Sign, financial institutions have been able to seamlessly integrate digital identity verification into their workflows. The impact has been particularly significant for women users and women-led enterprises. Digital onboarding through e-KYC and e-Sign has reduced the need for physical branch visits and paper documentation, making it easier for women to open bank accounts, access digital financial services, and participate in the formal economy. Fintech lenders increasingly combine Aadhaar-based verification, digital payment histories, and consent-based financial data to assess creditworthiness, enabling women entrepreneurs and SHGs with limited collateral or formal credit histories to access working capital and business loans.



Value Creation Mechanisms

The convergence of APIs and DPI creates multiple pathways for value generation, primarily through the multiplier effect, market expansion, and the decentralization of innovation. As DPI reaches critical adoption, a powerful multiplier effect emerges: more users attract more services, which in turn drive further innovation. This self-reinforcing cycle fuels investment, draws in talent, and enables the emergence of new business models.

At the same time, this convergence drives market expansion by unlocking access to underserved populations. Firms can design localized, context-specific solutions, extending digital services beyond urban centers. Shared infrastructure further enhances efficiency by reducing duplication, lowering operational costs, and decreasing entry barriers for startups.

Additionally, APIs decentralize innovation. Both startups and established enterprises can develop niche, embedded solutions, ensuring that innovation occurs closer to user needs and at greater speed.

Expanding Innovation Ecosystems

API-driven DPI is increasingly catalysing innovation beyond fintech. Across healthcare, education, commerce, and financial services, private enterprises are building specialized solutions on top of digital public infrastructure. Healthtech platforms use digital identity and interoperable data-sharing frameworks to facilitate access to healthcare services for women and maternal health beneficiaries. Edtech providers leverage digital identity and payments infrastructure to deliver skills training, certifications, and employment-linked learning opportunities to women and girls. Commerce platforms enable women-led microenterprises and SHGs to participate in digital marketplaces, receive payments through interoperable payment systems, and establish transactional histories that can support future credit access. Meanwhile, lenders use consent-based data-sharing frameworks to develop alternative credit models that extend formal finance to previously underserved women entrepreneurs.

Regulatory sandboxes further support this ecosystem by enabling controlled experimentation with emerging technologies. This approach reduces risk while fostering innovation and collaboration between regulators and market participants.

As these ecosystems evolve, they attract investment, enable startup creation, and generate employment—contributing to broader digital economic growth.

Conclusion

The convergence of DPI and the API economy represents a shift toward collaborative



value creation, with the private sector playing a critical role in translating digital infrastructure into real-world impact. While public infrastructure provides scale, trust, and interoperability, private innovation ensures usability, adaptability, and relevance. Together, they drive inclusive and sustained economic growth while expanding economic participation for women by improving access to finance, entrepreneurship opportunities, digital markets, education, healthcare, and other essential services.

4.2 Case study 6: Women-Led Enterprises and Business Enablement

Evidence on digital financial use, industry initiatives, credit linkages and market enablement

Evidence boundary

All primary research instruments were reviewed for relevance. The analysis draws primarily on perspectives from participating FICCI member companies, supplemented by contextual evidence from women beneficiaries, NGO representatives and bank officials. A focused subgroup of women identified as self-employed or operating a microenterprise; this classification was self-reported, and occupation data were unavailable for a small share of participants. Respondent groups were analysed separately and were not linked across instruments. This case study examines the digital and institutional foundations supporting women's enterprise participation, including digital financial use, perceived access to formal credit and industry-led support. Enterprise-level outcomes—such as registration, sales, profitability, employment generation, digital-market transactions and business continuity—fall outside its analytical scope, and no business outcomes are attributed specifically to DPI. Given the focused, purposively selected participant groups, the findings are indicative and exploratory rather than statistically representative; they nevertheless provide useful evidence on emerging trends, shared challenges and opportunities across participating stakeholders.

1. National context: the enterprise stack extends beyond payments

India's digital enterprise ecosystem extends beyond payments to online formalization, credit enablement and digital market access. As of 24 July 2026, the Ministry of MSME dashboard recorded 3.42 crore registrations in the female category across Udyam Registration and Udyam Assist. This represents an administrative indicator of formal recognition; it does not establish whether the registered enterprises are active, profitable or digitally integrated.

The MSME Trade Enablement and Marketing (TEAM) Initiative, launched in 2024, aims to support five lakh micro and small enterprises—including 2.5 lakh women-owned enterprises—in accessing e-commerce markets through ONDC. Support includes



digital onboarding, cataloguing, account management, transport and logistics, packaging, and capacity building. Its design recognizes that digital-market participation requires operational support beyond access to digital infrastructure. The primary research does not evaluate the initiative, which is presented only as national policy context.

2. Financial DPI use provides a foundation for enterprise participation

Within the focused subgroup of women identifying as self-employed or operating a microenterprise, all participants were from rural areas. A large majority reported using UPI, while a majority used Jan Dhan and DBT and a smaller share used AePS. All participants reported operating their bank accounts fully or mostly independently, and nearly all undertook digital transactions at least monthly.

These responses indicate regular and largely independent use of digital financial services among the participating subgroup. As the beneficiary instrument primarily examined access to and use of digital financial services, the findings should be interpreted as indicative evidence of transactional readiness rather than enterprise performance or growth.

3. Business-led initiatives are building foundational capabilities

A majority of participating FICCI member companies reported active initiatives supporting women's digital empowerment, while a smaller share reported either planned initiatives or no current activity. Digital literacy was the most frequently reported area of activity. A substantial share also reported employability-skilling and women-led entrepreneurship initiatives. The survey indicates an opportunity to deepen industry engagement in e-commerce and digital-marketplace onboarding.

Enterprise dimension	Survey finding	Analytical interpretation
Industry activity	A majority reported active initiatives; a smaller share reported planned initiatives or no current activity	Most surveyed companies reported current or planned engagement in women's digital empowerment, although initiatives were at different stages.
Enterprise focus	A substantial share reported entrepreneurship enablement; none reported e-commerce or digital-marketplace onboarding	Reported support was concentrated on capability building and enterprise readiness, providing a foundation for future market-access linkages.



Enterprise dimension	Survey finding	Analytical interpretation
DPI platforms	Among valid responses, Aadhaar was most frequently identified, followed by UPI; SIDH was cited by a smaller share, while DigiLocker, ONDC and Account Aggregator were not selected	Identity and payment systems were the most frequently reported DPI components. Broader use of credential, marketplace and consent-based financial-data platforms was not evident in this sample.
Outcome evidence	Though limited, the available evidence points to a need for more standardised outcome measurement across company initiatives	The available responses were insufficient to assess employment, income, market access or enterprise sustainability. More consistent results measurement would help demonstrate program contribution.

Core finding

Participating companies demonstrate meaningful engagement in digital capability building and selected forms of entrepreneurship support. These initiatives provide a foundation for connecting women entrepreneurs with digital markets, enterprise finance and other business services. However, the available responses provide indicative insights only and do not permit an assessment of whether these connections have translated into measurable enterprise outcomes.

4. Formal credit access is widely perceived to have expanded

All participating bank officials perceived that DPI had expanded access to formal credit among women previously excluded from the formal financial system. A large majority reported improvement to a great extent, while a smaller share reported improvement to some extent. These responses reflect institutional perceptions rather than an analysis of lending portfolios.

When asked which credit products had shown the strongest uptake among women, participating officials most often identified SHG/JLG-linked credit and personal or consumer loans, while a smaller share selected PM Mudra loans. Account Aggregator-enabled credit was not selected. The findings indicate that established group-based and mainstream lending channels currently have the greatest visibility among the participating stakeholders.

Nearly half of participating NGO respondents reported an increase in women's uptake of credit. Among those providing a valid response on the intervention contributing most strongly to credit access, a majority selected SHG-bank linkages,

while a smaller share selected digital-literacy training. Together, these indicative responses highlight the enabling role of institutional networks, trusted facilitation and digital capability. As the instruments did not separately identify business credit or enterprise performance, the findings should be interpreted as exploratory evidence of improved credit access rather than enterprise growth.

5. FICCI and industry platforms can strengthen the enterprise pathway

A clear majority of companies providing a valid assessment rated FICCI and similar industry platforms effective or very effective in catalysing private-sector action. Regarding cross-BRICS engagement, a smaller share expressed specific interest in knowledge sharing, while a majority indicated openness to exploring collaboration. These indicative responses suggest strong receptiveness to an industry-led convening platform for knowledge exchange, partnership development and coordinated action.

For a BRICS-level enterprise agenda, the opportunity is to connect digital access and capability building with business formalization, finance, procurement and markets. Four priorities emerge:

- Build an integrated enterprise pathway: connect digital capability and formalization with payments, finance, procurement and market access.
- Translate capability into market participation: complement training with cataloguing, buyer discovery, logistics support and digital-marketplace onboarding.
- Deepen enterprise-finance linkages: connect women entrepreneurs with suitable credit products through consent-based records, trusted assistance, financial literacy and fraud safeguards.
- Track enterprise progression and performance: complement reach indicators such as training and registration with measures of credit access, digital listings, completed sales, revenue, business continuity and employment generation.

6. Conclusion

The primary research presents an encouraging, exploratory picture of the foundations for women's enterprise participation. Within the focused group identifying as self-employed or operating a microenterprise, digital payment use was widespread and bank-account operation was largely independent. Participating bank officials perceived formal credit access for previously excluded women to have improved, while company respondents reported activity in digital literacy, employability skilling and entrepreneurship support.

The case study examines the digital and institutional foundations supporting women's enterprise participation, including digital financial use, access to formal



credit and industry-led support. It does not assess enterprise performance or attribute business outcomes specifically to DPI. The next opportunity is to build on these foundations by more closely connecting identity, payments and trusted digital records with enterprise finance, procurement, digital markets and business-support services.

FICCI and other industry platforms can contribute by convening public, private and civil-society actors, facilitating integrated enterprise-support models and promoting comparable measures of enterprise participation and performance across BRICS countries.

4.3 BRICS Collaboration Opportunities

Knowledge sharing, technology cooperation and principle-based pathways for DPI

India's BRICS 2026 Presidency identifies innovation, including digital public infrastructure (DPI), fintech, artificial intelligence and knowledge sharing, as a priority for inclusive and future-ready growth. This provides a timely platform for BRICS members to deepen practical cooperation on DPI. The secondary evidence indicates that the greatest value lies in exchanging implementation knowledge, strengthening institutional and technical capability, and enabling countries to adapt proven approaches to their own legal, governance and development contexts.

1. Knowledge Sharing and Technology Cooperation

DPI combines shared digital systems with the legal, institutional, and operational arrangements required to deliver services at scale. Its value therefore cannot be transferred through technology alone. Countries also need access to evidence on governance, safeguards, procurement, financing, adoption and service performance. Structured exchange across BRICS can shorten learning cycles, reduce avoidable duplication and help members select approaches appropriate to their national priorities.

The 2023 G20 Digital Economy Ministers' Outcome Document provides an established foundation for such exchange. It welcomed the Global Digital Public Infrastructure Repository (GDPIR) as a resource for sharing DPI experiences and recognised the need for multistakeholder financial and technical cooperation, including through the voluntary One Future Alliance. The UNDP DPI Playbook complements this approach: it is explicitly country-centred, rights-based and designed to help governments consider technology, governance, institutional capacity, sustainability and implementation across the DPI lifecycle.

India's experience also demonstrates how public digital rails can enable wider ecosystem participation. Common interfaces and interoperable infrastructure allow financial institutions, technology providers, start-ups and other enterprises to build



services for citizens and businesses. Platforms such as India Stack Global make implementation material available across multiple languages, while India's digital initiatives provide practical reference points for identity, payments, document exchange and service delivery. For BRICS cooperation, these examples are most useful as adaptable design and implementation knowledge rather than as prescriptive templates.

Technology cooperation can further extend this value through open standards, documented specifications, APIs and digital public goods. Reusable components can lower entry barriers and support interoperability, provided that countries evaluate them within domestic requirements for security, privacy, accessibility, resilience and accountability. The World Bank's practitioner guidance similarly places openness, interoperability, modularity, user choice and public-private cooperation at the centre of DPI, alongside institutional and legal frameworks.

Priority areas for BRICS cooperation

COLLABORATION AREA	FOCUS
Implementation Knowledge	Curate comparable country experiences on service design, governance, safeguards, procurement, financing, adoption and operational performance.
Technology Cooperation	Exchange open standards, specifications, APIs and reusable digital public goods that countries can assess and adapt to national requirements.
Institutional Capability	Develop practitioner exchanges and joint learning for public officials, regulators, technologists and frontline institutions across the DPI lifecycle.
Inclusive Innovation	Bring industry, academia and civil society into women-responsive use cases, with attention to accessibility, assisted access, privacy, safety and user control.

2. Pathways towards a Global DPI Framework

A global DPI framework is most credible when understood as a shared reference for principles and cooperation, not as a single global platform or uniform technology stack. The G20 definition describes DPI as secure and interoperable shared digital systems, built where appropriate on open standards and specifications, governed by legal frameworks and enabling rules, and designed to provide equitable access while advancing development, inclusion, innovation, trust and competition. This provides a strong common foundation while preserving national ownership of architecture, regulation and delivery.



The UNDP Playbook reinforces this balance by recognising that every country's DPI journey is distinct and that tools must be tailored to national contexts. World Bank evidence adds the importance of whole-of-government and cross-sector coordination, user-centricity, choice and safeguards. Taken together, these sources support a flexible global approach in which countries converge around trusted design principles and interoperable practices, while retaining the ability to sequence investment and choose technologies in line with domestic institutions and needs.

A practical BRICS pathway

- Establish a shared vocabulary. Use existing international definitions and principles to build a common understanding of DPI components, governance requirements and public-interest outcomes, without prescribing a common stack.
- Organise voluntary exchange. Connect national focal points, technical agencies and practitioner networks to share implementation cases, reference architectures, reusable components and lessons on safeguards, sustainability and adoption.
- Demonstrate through country-led use cases. Apply shared principles to selected service journeys - including payments, public transfers, health, skilling, enterprise support and authenticated records - with clear attention to women's access, safety, privacy and successful service completion.
- Build an evidence and learning cycle. Use comparable but adaptable measures of reach, regular use, service completion, convenience, assistance required, trust and user control; review results collectively and scale through national systems where value is demonstrated.

A multi-stakeholder model is essential to this pathway. Governments provide policy direction, accountable governance and foundational infrastructure; industry contributes innovation, technical capability and service delivery; international organisations support capacity and knowledge exchange; and academia and civil society strengthen research, user-centred design and independent feedback. For women, this collaboration can help ensure that DPI is assessed not only by platform scale, but also by whether services are accessible, trusted, safe and responsive to different lived contexts.

Overall opportunity. BRICS can contribute to the evolution of trusted and interoperable DPI by combining country-led implementation with structured peer learning, adaptable technology cooperation and common public-interest principles. This approach can accelerate innovation and inclusion while respecting national sovereignty and diverse development pathways.





5 CHAPTER

Addressing Challenges and Mitigating the Gender Digital Divide



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Addressing Challenges and Mitigating the Gender Digital Divide

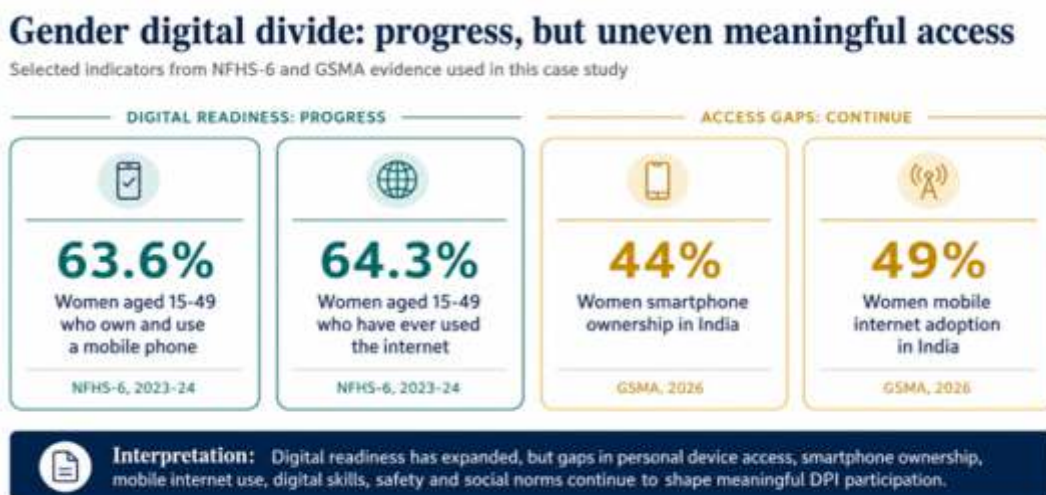
5.1 Advancing Meaningful and Safe Digital Participation

From platform availability to meaningful, safe and independent digital participation

Case-study thesis

India's progress in women's mobile and internet access has created a stronger foundation for DPI-enabled service delivery. Scope and importance in device ownership, smartphone access, mobile internet use, digital literacy, affordability, online safety and social permission continue to limit women's independent and safe use of digital public services. These persistent gaps are evident in NFHS-6, which shows that women in rural areas continue to report lower levels of mobile phone ownership and internet use than their urban counterparts. For BRICS and other emerging economies, the key lesson is that DPI's empowerment potential depends not only on platform scale, but on whether women can access, trust and use digital services regularly, privately and with confidence.

Figure 1: Selected indicators of women's digital access and remaining digital divide in India.



1. Context: the digital divide as a binding constraint for DPI-led empowerment

Digital Public Infrastructure can reduce the cost, distance, and administrative friction

associated with accessing public services, welfare benefits, financial systems, health platforms, and digital learning resources. However, these benefits are not automatic. Women can participate meaningfully in DPI-enabled services only when they have reliable access to digital devices, affordable connectivity, digital skills, trust, privacy and supportive social conditions.

The gender digital divide is therefore not only a technology-access issue; it is also a service-access and empowerment issue. Where women depend on shared devices, family members or intermediaries to use digital public services, platform availability may improve the efficiency of service delivery without necessarily strengthening women's independent use, privacy, confidence or control. In such contexts, for some users, trusted assisted access remains a valuable bridge to independent adoption.

This case study synthesizes evidence on the persistence of the gender digital divide in India, with emphasis on internet access, mobile ownership, smartphone access, mobile internet adoption, urban-rural disparities, socio-economic barriers, online safety and implications for women-responsive DPI design.

2. Progress in women's digital access in India

National evidence indicates that women's access to digital technologies in India has improved significantly. NFHS-6 (2023–24) shows that the share of women aged 15–49 who own and use a mobile phone increased from 53.9% in NFHS-5 (2019–21) to 63.6%. Over the same period, the share of women who have ever used the internet increased from 33.3% to 64.3%.

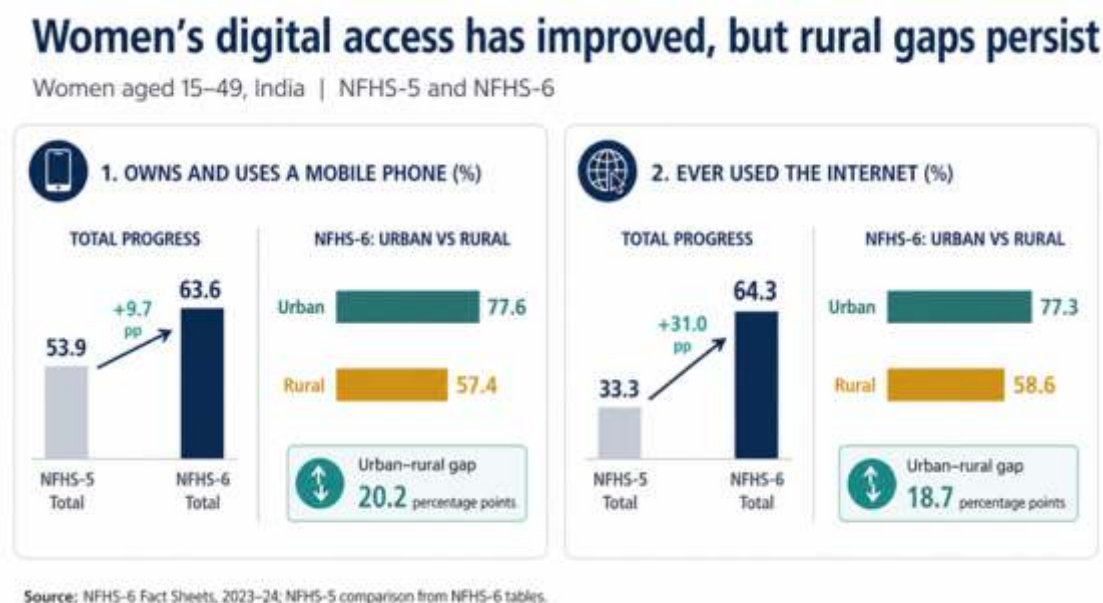
These gains are important for DPI-led inclusion because mobile phones and internet access are foundational enablers of digital public services. They support women's ability to access digital payments, identity authentication, online certificates, benefit information, telemedicine, skilling platforms, grievance mechanisms, and other citizen-facing services.

However, the progress varies across geography and socio-economic contexts, reinforcing the importance of differentiated last-mile approaches. NFHS-6 shows that the share of women who own and use a mobile phone is 77.6% in urban areas compared with 57.4% in rural areas. Similarly, the share of women who have ever used the internet is 77.3% in urban areas compared with 58.6% in rural areas. These differences indicate that national-level gains coexist with a continuing rural–urban differential that merits focused last-mile support .

The NFHS indicators should therefore be read as measures of access and exposure, not as measures of meaningful digital use. They do not fully capture whether women own smartphones, control phone use, transact independently, trust digital platforms, use services regularly, or can complete digital journeys without assistance.



Figure 2: Women's digital access, NFHS-5 vs NFHS-6, with NFHS-6 urban-rural split.



3. Device ownership, smartphone access and mobile internet gaps

While national indicators show improvement in women's digital access, evidence from GSMA indicates that gender gaps persist in the quality and independence of that access. In India, relatively higher percentage of men own a mobile phone compared to women. The gap widens for smartphone ownership and a similar gap is visible in mobile internet use.

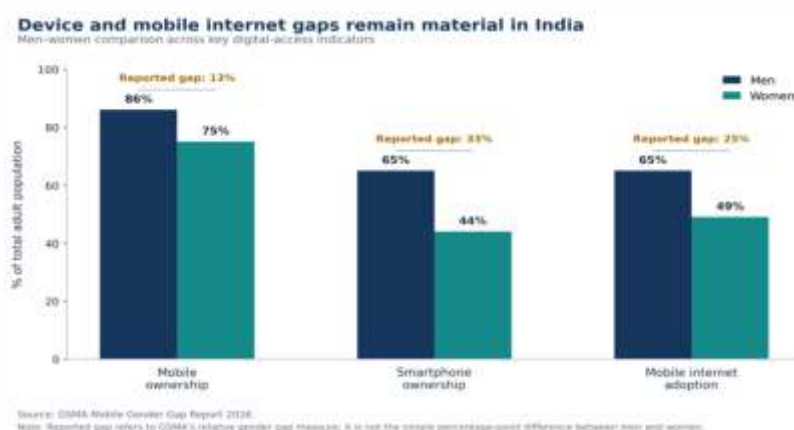
These figures point to a critical distinction for DPI policy: access to any mobile phone is not equivalent to meaningful access to internet-enabled public services. Many DPI-enabled use-cases require more than basic connectivity. They often require smartphones, mobile data, application navigation, identity-linked credentials, OTP-based authentication, digital-payment familiarity, and the confidence to complete transactions independently.

The quality of access also matters. GSMA evidence indicates that women are more likely than men to access mobile internet through shared devices rather than independently owned smartphones. Shared access may enable occasional use, but it can limit privacy, regularity, autonomy and safe engagement with sensitive services such as digital payments, health records, identity documents, benefit information and grievance redressal.

For women-responsive DPI design, the implication is clear: closing the digital divide requires moving beyond headline access indicators. Policy and programme design must address personal device access, smartphone affordability, digital skills, safe use, privacy, trust and independent control over digital credentials. Without these

enablers, women may remain connected to DPI systems through family members or intermediaries but not necessarily empowered as independent digital users.

Figure 3: Gender gaps in mobile ownership, smartphone ownership and mobile internet adoption in India.



4. Rural, urban and socio-economic disparities

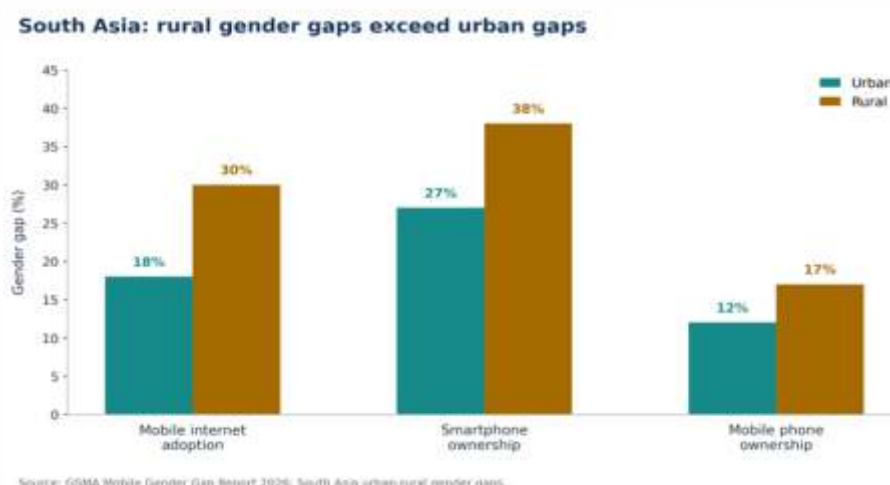
The gender digital divide is shaped not only by differences between women and men, but also by geography and socio-economic location. Priority attention is warranted for rural and low-income women, for whom device affordability, connectivity and capability support can accelerate participation.

GSMA evidence indicates that gender disparities in digital access are wider in rural areas than in urban settings across low- and middle-income countries. In South Asia, the mobile internet gender gap is 30% in rural areas compared with 18% in urban areas. The smartphone ownership gender gap is 38% in rural areas compared with 27% in urban areas, while the mobile phone ownership gap is 17% in rural areas compared with 12% in urban areas.

This evidence is important for India and other emerging economies because DPI-enabled services are often intended to reach populations that face the greatest offline barriers. If rural and low-income women remain less likely to own smartphones, access reliable connectivity or use mobile internet independently, DPI systems may improve administrative efficiency without fully translating into women's direct access, privacy or control.

The policy implication is that digital inclusion cannot be addressed through platform expansion alone. DPI-led empowerment requires targeted investment in affordable devices, reliable rural connectivity, local-language interfaces, assisted but privacy-protective access points, digital confidence-building and safeguards against exclusion for women who remain outside regular digital use.

Figure 4: Urban-rural gender gaps in digital access indicators in South Asia.



5. Barriers to adoption and continued use

The evidence indicates that expanding digital infrastructure delivers greater value when paired with affordability, capability-building, safe access and trusted local support. Women's digital participation is shaped not only by the availability of networks and platforms, but also by affordability, device access, literacy, digital confidence, online safety, social norms and the ability to use services independently.

GSMA evidence identifies affordability, particularly the cost of smartphones, as a major barrier to mobile internet adoption among women. Limited literacy and digital skills further constrain effective use. For women in India who are aware of mobile internet but do not use it, key barriers include literacy and digital skills, safety and security concerns, and affordability. This indicates that awareness alone does not translate into adoption unless women have the capability, confidence and resources to use digital services.

Figure 5: Barrier framework for meaningful women's participation in DPI-enabled services.

From digital access to meaningful DPI participation

Barriers that determine whether women can use digital public services regularly, safely and independently



Core message: DPI inclusion requires more than platform roll-out; it requires women to have the means, skills, confidence and safeguards to use digital services on their own terms.

The barrier profile changes, but does not disappear, once women begin using mobile internet. Among women who already use mobile internet, concerns relating to online safety and security, affordability of mobile data, network connectivity and confidence in use continue to affect regular and meaningful participation. This distinction is important for DPI policy: interventions must address both first-time adoption and sustained, safe use.

UN Women similarly emphasizes that women's participation in digital ecosystems is influenced by multiple and intersecting factors, including access to technology, affordability, digital literacy and prevailing social norms. These constraints can be more pronounced for women in rural and underserved communities, affecting their ability to access and benefit from digitally enabled services.

World Bank evidence from G2Px and Global Findex reinforces the same conclusion. Effective participation in digitally enabled service delivery depends on foundational digital enablers such as mobile connectivity, internet-enabled devices and digital capabilities. Meaningful use of digital financial services also depends not only on account ownership, but on whether women can access digital technologies and use them effectively, safely and regularly.

The policy implication is clear: closing the gender digital divide requires a shift from infrastructure availability to meaningful digital capability. For women-responsive DPI, this means addressing smartphone affordability, local-language digital literacy, online safety, privacy, fraud protection, reliable connectivity, and trusted support systems that help women move from assisted use to confident independent use.

6. Implications for DPI-enabled services and women's empowerment

For DPI-enabled public services, the gender digital divide creates a translation gap between platform availability and women's effective use. A woman may be formally eligible for digital payments, telemedicine, online certificates, skilling platforms or grievance redressal, but may still be unable to use these services independently if she lacks a smartphone, affordable data, reliable connectivity, digital confidence, language comfort or control over credentials.

This gap matters because many DPI-enabled service journeys involve sensitive information. Bank balances, welfare payments, health records, identity documents, passwords, OTPs, biometric authentication, grievance details and personal data all require privacy, trust and secure handling. Where women depend on family members or intermediaries to complete digital transactions, access may improve, but privacy, agency and control may remain limited.

The report's primary-research instruments reflect this concern by separately examining women non-users of digital public services. The non-user instrument captures barriers such as limited awareness, lack of digital skills or confidence, no device or shared-device access, poor connectivity or unreliable electricity, family



restrictions or low perceived need, safety and data-misuse concerns, and language barriers. It also tests adoption pathways including local-language training, trusted hand-holding, access to a personal device, reliable connectivity, assurance against fraud and data misuse, and family support.

The policy implication is that DPI-enabled empowerment requires more than inclusive platforms; it requires inclusive access journeys. Women must be able to discover, access, use, correct and complain about digital services without losing privacy, safety or control. For BRICS and other emerging economies, this means treating digital inclusion as a core design condition for DPI-led empowerment, not as a separate downstream intervention.

7. Evidence synthesis: what the research shows

The evidence reviewed for this case study points to a clear conclusion: India has made measurable gains in women's digital access, but meaningful DPI participation remains constrained by the quality, affordability and independence of that access. Mobile phone ownership and internet exposure have improved substantially, but rural women continue to be less digitally connected than urban women. This indicates that digital readiness is expanding, while rural access, usability and assisted support remain critical for inclusion.

The GSMA evidence further shows that the divide is not limited to whether women have access to any mobile phone. India continues to show material gender gaps in mobile ownership, smartphone ownership and mobile internet adoption. This distinction is important because many DPI-enabled services, including digital payments, online certificates, health records, skilling platforms and grievance systems, require smartphones, mobile data, application navigation, authentication and confidence in use. For women, access to a shared or basic device may enable occasional connectivity, but may not support regular, private or independent use.

The evidence on barriers also shows that digital exclusion is not a one-time adoption problem. For women who are aware of mobile internet but do not use it, affordability, literacy and digital skills, safety concerns and the cost of smartphones remain important constraints. For women who already use mobile internet, online safety and security, data affordability, network quality and confidence continue to shape whether use is regular and meaningful. This means that DPI policy must address both first-time adoption and sustained, safe use.

International evidence reinforces this interpretation. UN Women highlights that women's participation in DPI is shaped by access to technology, affordability, digital literacy and social norms, particularly in rural and underserved communities. World Bank evidence from G2Px and Global Findex similarly indicates that digital service delivery and digital financial inclusion depend on foundational enablers such as mobile connectivity, internet-enabled devices and digital capabilities.



The report's primary research reinforces this pattern. Women non-users identified device access, digital confidence, connectivity, language comfort, fraud concerns and trusted handholding as key factors shaping whether they can adopt digital public services. These findings confirm that women-responsive DPI requires not only platform availability, but also the social, technical and institutional conditions that allow women to use digital services independently, safely and with confidence.

Figure 6: Enabling conditions for women's meaningful participation in DPI-enabled services.



Taken together, the evidence shows that the gender digital divide is not a peripheral implementation issue; it is central to whether DPI can translate into women's empowerment. The case-study finding should therefore be understood as an enabling claim: reducing the gender digital divide strengthens the conditions through which women can access DPI-enabled services, while empowerment outcomes depend on whether women can use those services independently, safely, regularly and with confidence.

8. Priority agenda: from digital access to meaningful participation

The next policy priority is to move from digital access to meaningful, safe and independent digital participation. For BRICS and other emerging economies, this requires a women-responsive digital inclusion agenda that combines infrastructure, affordability, digital capability, safety, institutional responsiveness and last-mile support. The objective should be to ensure that women are not only connected to DPI-enabled services, but are able to use them regularly, safely, privately and with confidence.

First, device and data affordability must be treated as core inclusion enablers. Smartphone costs and recurring data expenses shape whether women can access internet-enabled DPI services regularly. Targeted affordability models, device-

financing partnerships, subsidised or community-based access points, and women-focused digital access programmes can help reduce entry barriers, particularly for rural and low-income women.

Second, digital literacy must move from generic awareness to practical capability. Women need confidence to navigate applications, OTPs, passwords, digital payments, certificates, online forms and grievance systems. Local-language, use-case-based training through SHGs, Common Service Centres, frontline workers, schools and community institutions can help women move from assisted use to more independent use.

Third, assisted access must be designed around privacy and consent. Shared devices and mediated use can help women access services, but they may also limit privacy and expose women to fraud, or misuse of personal data. Assisted service channels should therefore include consent protocols, safe authentication practices, privacy guidance, fraud awareness and clear norms on handling sensitive information.

Fourth, rural connectivity and service reliability require continued investment. Unreliable networks, electricity gaps and distance from service points reduce regular digital use, particularly in rural and underserved areas. DPI-led inclusion requires reliable last-mile connectivity, functional service points, offline-assisted options and agent networks that can support women in low-connectivity geographies.

Fifth, grievance redressal and account recovery must be strengthened. Women need support when transactions fail, records are incorrect, devices are lost, credentials are compromised, mobile numbers change or accounts become inaccessible. Effective grievance systems should include local-language support, clear escalation pathways, account-recovery mechanisms, fraud reporting and measurable service-quality standards.

Sixth, measurement must move beyond platform scale. Registrations, downloads and transaction volumes do not show whether women can use services independently, safely or repeatedly. Gender-disaggregated metrics should track women's actual use, confidence, privacy, assisted-use patterns, complaint resolution, control over credentials and outcomes linked to DPI-enabled services.

For women-responsive DPI, the policy goal should be to make digital public services not only available, but usable, trusted and independently navigable. Platform expansion creates the infrastructure for inclusion; meaningful participation depends on whether women have the devices, skills, confidence, safeguards and institutional support required to use digital services on their own terms.

9. Conclusion

India's experience shows that women's digital access has expanded significantly, creating a stronger foundation for DPI-enabled service delivery. NFHS-6 indicates



clear gains in women's mobile phone ownership and internet exposure, while wider evidence shows that digital platforms are increasingly central to public services, payments, documentation, skilling, health access and grievance redressal.

At the same time, the gender digital divide remains a structural constraint on DPI-led empowerment. Gaps in smartphone ownership, mobile internet adoption, rural connectivity, affordability, digital literacy, online safety and social permission continue to shape whether women can use digital public services independently. For women, the central issue is therefore not only whether a digital service exists, but whether it can be accessed safely, privately, regularly and with control.

For BRICS and other emerging economies, the policy lesson is clear: DPI scale must be matched by women-responsive digital inclusion. Platform roll-out, transaction growth and service digitization are necessary, but not sufficient. The next phase requires targeted investment in affordable devices and data, local-language digital capability, safe assisted access, privacy and consent safeguards, grievance redressal, and gender-disaggregated measurement of actual use.

Closing the gender digital divide is therefore not a peripheral inclusion agenda. It is a core condition for translating DPI from platform availability into meaningful, safe and independent participation by women.

5.2 Case study 7: Social Norms and Digital Adoption

Evidence on autonomy, household support, trusted assistance, confidence and safe use

Evidence boundary

All nine primary research instruments were reviewed for relevance. The analysis draws primarily on a select cohort of women beneficiaries, women non-users, SHG/NGO leaders, Banking Correspondents/Banking Sakhis and bank officials, supplemented by service-specific evidence from women telemedicine patients and contextual evidence from employers. The FICCI member-company and healthcare-provider instruments were also reviewed; their evidence relates principally to organizational programmes and service delivery and is therefore not used substantively in this case study. Participant groups are analysed separately using question-specific valid bases. The findings are descriptive, unweighted and indicative of the perspectives of participating stakeholders. They are exploratory rather than statistically representative, but provide valuable evidence on emerging trends, shared challenges and opportunities across participating stakeholder groups". As the achieved evidence relevant to this case study was predominantly rural, no urban–rural comparison is made. DPI is considered alongside the household, community and institutional factors that shape adoption; the findings should therefore be interpreted as mutually reinforcing conditions rather than effects attributable to any single factor.

1. Surveyed users report strong independent account operation, confidence and trust

Among women providing valid responses, a substantial majority reported operating their bank accounts fully or mostly independently. Similarly, rated their confidence in managing finances since using digital public services as high or very high, while majority of respondents reported high or very high trust in the privacy and security of their personal data. Among participants providing a valid response on transaction frequency, a majority of participants used digital services at least weekly.

Within this predominantly rural participant group, regular digital use coexisted with strong self-reported independent account operation, financial confidence and trust. These indicative findings provide an encouraging picture of participating women's experiences with digital services, while remaining exploratory rather than statistically representative.

2. Social influence is contextual, while household and community support can enable adoption

Among participating women non-users, about half, reported that social norms or family expectations did not influence their ability to use digital services at all, while a smaller share (nearly a third) reported very little influence. The remaining participants reported either a neutral position or influence to some extent. Social norms therefore did not emerge as a uniform constraint within this focused participant group.

“Family permission and support” was the most frequently selected adoption enabler, identified by about half of participating non-users. This was followed by hand-holding from a trusted local person, access to a personal device and assurance against fraud or data misuse. As participants could select up to two options, these findings represent complementary enabling conditions.

Among participants answering the willingness-to-learn question, a majority were definitely or possibly willing to learn, while the remainder were undecided; none selected “No”. Together, these indicative findings highlight the constructive role of household encouragement, trusted community assistance, device access and safe-use assurance in supporting women's transition to digital services.

3. Trusted assistance complements independent use

Participating Banking Correspondents and Banking Sakhis consistently reported that women customers transacted mostly or almost always independently, without male family members accompanying them. They also assessed women customers as at least moderately confident in conducting AePS transactions on their own after one or two assisted attempts. When asked why women preferred a Banking Sakhi over a bank branch, a majority identified proximity and accessibility, while a smaller share identified trust and familiarity.



Institutional reinforcement

Participating bank officials and SHG/NGO leaders also reported positively on these assisted-access channels. Bank officials consistently rated the BC/Sakhi network effective or highly effective in deepening women's financial inclusion, while most participating SHG/NGO leaders rated Banking Correspondents and Banking Sakhis effective or highly effective in supporting women DBT beneficiaries.

Participating SHG/NGO stakeholders consistently reported that social norms continued to influence women's autonomous use of DBT funds to at least a limited extent. Among those providing a valid response on the intervention delivering the strongest improvement in women's financial autonomy through DPI, a majority selected SHG–bank linkages, while a smaller share selected digital-literacy training.

Together, these institutional perspectives highlight how accessible digital infrastructure, trusted local delivery networks, community institutions and capability building can reinforce women's confidence and independent use.

Core finding

Social influence emerged as contextual rather than uniformly restrictive. Surveyed users reported high levels of regular and independent digital use, while household encouragement and trusted local support emerged as practical adoption enablers among non-users. Banking Sakhis, SHG–bank linkages, assisted learning and safe-use assurance can complement DPI by supporting a pathway from initial access to confident and independent use.

4. Implications for BRICS cooperation

The primary research highlights the value of combining accessible digital infrastructure with trusted support systems that build confidence and facilitate independent use. Four areas offer potential for BRICS knowledge exchange:

- Provide complementary access pathways: combine simple self-service options with trusted assisted channels, enabling women to use the form of access that best meets their needs and preferences.
- Strengthen household and community support: engage SHGs, local champions and community networks to expand awareness, encouragement and confidence while preserving women's individual choice.
- Promote confident and safe use: complement practical demonstrations with fraud awareness, privacy safeguards and accessible grievance-support mechanisms.



- Measure meaningful adoption: track frequency of use, independent account operation, confidence, trust, assistance required and the ability to use services securely and privately.

5. Conclusion

The primary research presents indicative insights into digital adoption supported by community and institutional networks. Participating women users reported regular use, largely independent account operation, high financial confidence and strong trust in data privacy and security. Among participating non-users, the influence of social norms varied, while family support and trusted local hand-holding emerged as practical adoption enablers. These exploratory findings reflect the perspectives of the participating stakeholders and should not be interpreted as statistically representative.

Banking Sakhis, SHG networks and other trusted local institutions demonstrate how assisted access can complement DPI by helping women build confidence and progress towards increasingly independent use. For BRICS cooperation, the central lesson is to combine reliable and accessible DPI with support systems that respect individual choice and respond to household and community contexts. Comparable measures of independent, trusted and safe use can help countries assess the depth and quality of digital adoption alongside access.

5.3 Data Privacy, Safety and Security

While India's Digital Public Infrastructure has significantly expanded access to financial services, government benefits, healthcare, and digital identity, access alone does not guarantee meaningful participation. For many women, the willingness to use digital services is shaped by a more fundamental question: Can these systems be trusted with my identity, data, money, and personal information?

Trust is particularly important because women often interact with digital systems under different circumstances than men. Many rely on shared mobile devices, seek assistance from intermediaries to access services, or have limited control over digital credentials linked to their identity or financial accounts. In such environments, concerns around privacy breaches, fraud, coercion, and misuse of personal information can become significant barriers to adoption. Strengthening women's participation in the digital economy therefore requires DPI ecosystems to be designed not only for accessibility and scale, but also for safety, privacy, and user agency.

Building Confidence Through Privacy and Data Protection

Women are more likely to engage with digital services when they are confident that personal information will be collected and used responsibly. This is particularly



important for services that involve sensitive data, such as health records, welfare benefits, financial information, or identity credentials.

India's evolving data governance framework, including the Digital Personal Data Protection (DPDP) Act, provides the foundation for a more trustworthy digital ecosystem by promoting informed consent, accountability, purpose limitation, and responsible data use. However, trust is created not only through regulation but also through design. Privacy-enhancing approaches such as data minimisation, selective disclosure, and purpose-specific data sharing help ensure that women can access services without exposing more information than necessary. In doing so, privacy becomes an enabler of autonomy, allowing women to participate in digital ecosystems while retaining greater control over their personal data.

Addressing Risks That Undermine Digital Trust

As digital adoption increases, so does exposure to fraud and misuse. However, digital risks are not experienced uniformly. Women who are new to digital services, depend on assisted transactions, or have lower levels of digital literacy often face a distinct set of vulnerabilities.

Within the Indian context, As digital adoption expands, continued attention to secure authentication, fraud prevention, responsive account recovery and accessible user-support mechanisms remains important to sustaining trust and ensuring uninterrupted access to essential services.

Building trust therefore requires security measures that are invisible but effective, including strong authentication, fraud monitoring, secure account recovery, transaction alerts, and risk-based controls. The objective is not simply to prevent cyber incidents but to ensure that women can use digital services confidently without fear of financial loss or identity compromise.

Moving from Consent Collection to User Control

Trust is strengthened when users feel they remain in control of their information even after it has been shared. In many digital ecosystems, consent is often treated as a compliance requirement. For women, however, meaningful consent can become a mechanism of empowerment.

India's DEPA framework and Account Aggregator ecosystem represent an important shift toward user-centric data sharing, enabling individuals to approve, monitor, and revoke access to their information. For these frameworks to achieve their full potential, consent experiences must be understandable, multilingual, and accessible to users with varying levels of digital literacy. When women can clearly understand who is accessing their information, for what purpose, and for how long, trust becomes rooted in transparency rather than assumption.

Recognising Women's Digital Safety Needs

A gender-responsive DPI ecosystem must acknowledge that many of the barriers women face extend beyond technology itself. The challenge is often not the absence of digital services, but the lack of safe and independent access to them.

Women may be required to share devices with family members, depend on intermediaries to conduct transactions, or operate in environments where privacy cannot be assumed. These realities can increase exposure to coerced OTP sharing, unauthorized use of credentials, financial fraud through assisted channels, and breaches of sensitive personal information.

Additionally, women may face risks that are rarely considered within conventional cybersecurity frameworks, including cyber harassment, online abuse, exposure of confidential health information, and identity-based exploitation. Addressing these challenges requires a broader understanding of digital safety that combines technical controls with user awareness, support mechanisms, grievance redress, and gender-sensitive service design.

Recognising the growing risks associated with digital adoption, India has strengthened its trust ecosystem through the DPDP Act, RBI's digital payment security controls, AI-enabled fraud detection, and national cybercrime reporting mechanisms. These measures play an important role in protecting vulnerable users, including women, from fraud, identity misuse, and unauthorized access to digital services.

Sustaining Trust Through Strong Institutions

Ultimately, trust is not created by technology alone. Users place confidence in digital ecosystems when they believe that institutions can prevent harm, respond effectively when problems occur, and hold participants accountable.

India's trust architecture is supported by a combination of regulatory oversight, RBI-led digital payment safeguards, CERT-In cybersecurity frameworks, fraud monitoring systems, and cybercrime reporting mechanisms. Together, these institutions create the assurance that digital interactions are governed by clear rules and supported by effective recourse mechanisms when things go wrong.

For women, accessible channels such as the National Cyber Crime Reporting Portal, Cyber Helpline 1930, grievance redress platforms, and consumer protection mechanisms are particularly important. These safeguards provide reassurance that digital participation does not mean navigating risks alone.



Figure x: India's DPI Trust and Security Framework for Women



For women, trust is not created solely through technology but through a combination of privacy protection, security safeguards, institutional accountability, and user empowerment. A gender-responsive DPI ecosystem must therefore go beyond basic cybersecurity controls to address the realities of women's digital experiences, including identity misuse, fraud, coercion, loss of privacy, and online safety concerns. By embedding these safeguards into India's DPI architecture, digital platforms can create a trusted environment that enables women to participate more confidently in economic, social, and civic life.



6 CHAPTER

Key Findings and Insights



6 CHAPTER

Key Findings and Insights

6.1 Key Findings and Insights

DPI is moving women's inclusion from access to active participation

The evidence supports one overarching conclusion: India's digital public infrastructure is helping to move women's inclusion beyond formal access towards active participation. Interoperable systems are reducing the friction associated with financial transactions, public transfers, healthcare, authenticated records and formal-economy processes. Their impact is strongest when digital platforms are reinforced by trusted frontline institutions that enable regular, safe and increasingly independent use.

How to read the evidence:

The report draws on two complementary evidence streams. Primary research captures insights from a focused participant group across nine instruments. Each stakeholder group is analysed separately using the valid responses available for each question, providing an exploratory and indicative account of user experiences and institutional perspectives rather than statistically representative estimates. National datasets situate these findings within the broader scale and direction of change. The analysis distinguishes the use of DPI-enabled platforms and services from wider outcomes such as employment, income, enterprise performance and household decision-making, which are influenced by multiple factors.

What national and primary evidence indicates

Women's access to financial services and the practical use of DPI-enabled channels

NATIONAL CONTEXT

89.0%

Women who have and themselves use a bank or savings account

NFHS-6, 2023-24

PRIMARY RESEARCH

Majority

Surveyed women who used UPI in the preceding 12 months

Majority

Surveyed women who reported avoiding a bank-branch or government office visit

All

Telemedicine users who reported reduced need to travel to a higher-level facility

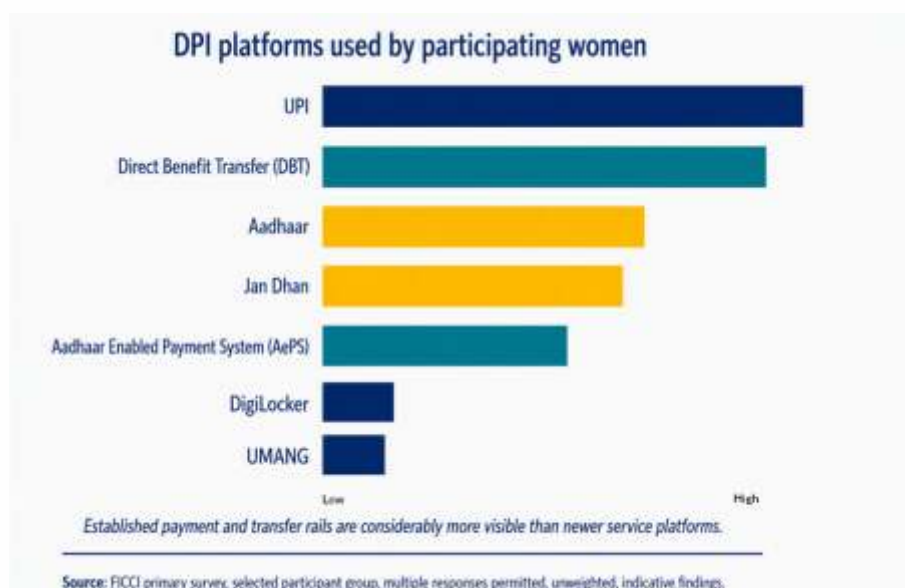
National evidence establishes scale; primary findings describe reported experiences within the surveyed respondent groups.

1. India has built population-scale foundations for women's digital inclusion

Secondary evidence shows a decisive expansion in the access conditions that allow women to participate in digital financial and public services. NFHS-6 reports that 89.0% of women aged 15–49 operate a bank or savings account themselves, compared with 78.6% in NFHS-5. Over the same period, women's ownership and use of mobile phones rose from 53.9% to 63.6%, while the share who had ever used the internet increased from 33.3% to 64.3%. As of 10 June 2026, women accounted for 32.58 crore of 58.45 crore PMJDY beneficiaries (55.7%).

These gains reflect the combined value of India's DPI layers. Aadhaar supports identity verification; PMJDY provides the account layer; UPI and AePS enable transactions; DBT connects public transfers to beneficiary accounts; and DigiLocker supports authenticated records. RBI's Financial Inclusion Index rising to 67.0 in March 2025, with progress across access, usage and quality, further indicates that the ecosystem is deepening beyond account opening alone.

Figure 6.1. Visibility of established and emerging DPI platforms among participating women. Findings are unweighted and indicative.



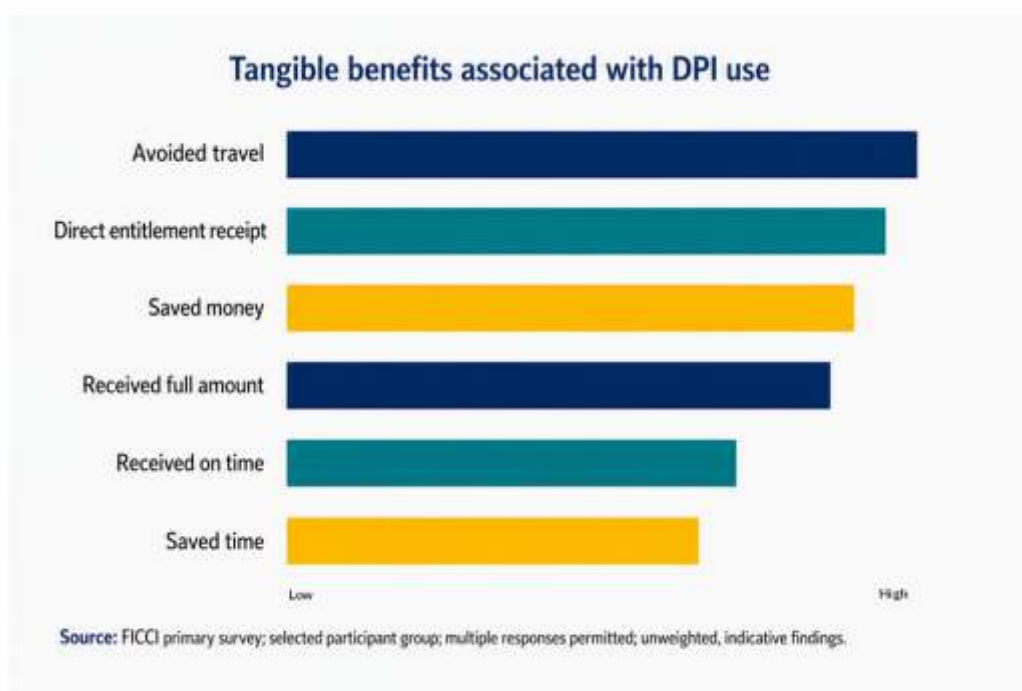
2. DPI is converting formal access into frequent, direct and more convenient use

The primary research suggests that women within the focused participant group were actively engaging with digital services rather than merely possessing formal access. UPI and DBT were the most visible platforms, followed by Aadhaar, Jan Dhan and AePS, while awareness and use of newer services, such as DigiLocker and UMANG, remained comparatively limited. A large majority of participating women

reported avoiding travel, receiving entitlements directly and saving money; substantial shares also reported receiving the full amount, obtaining benefits on time and saving time. For some participants, the time saved ranged from approximately half an hour to more than half a day per transaction, illustrating how digital delivery can reduce both direct expenditure and the opportunity cost of accessing services.

Direct Benefit Transfer provides the clearest evidence of improved public-service delivery. A majority of participating users identified receipt of the full entitlement as an improvement, while nearly half highlighted direct receipt without an intermediary. Smaller shares referred to more timely transfers, clearer information and reduced commission-related friction. Participating SHG and NGO leaders likewise perceived an increase in transfers reaching women-owned accounts and a reduction in leakage and intermediary dependence. Although exploratory, these findings indicate that interoperable identity, account and payment systems can make public transfers more direct, transparent and dignified while strengthening women's control over benefit receipt.

Figure 6.2. Tangible benefits associated with DPI use among participating women. Findings are unweighted and indicative.



3. Trusted frontline support multiplies the value of digital infrastructure

Across financial services and healthcare, assisted access emerges as a core component of inclusion rather than a temporary workaround. Participating Banking Correspondents and Banking Sakhis reported growing demand for AePS services among women and observed that confidence and independent use often improved



after a limited period of support. Bank officials broadly regarded these networks as effective, while SHG and NGO leaders emphasized their role in connecting women with accounts, transfers, savings and credit. Frontline delivery needs strengthening with respect to biometrics, connectivity, authentication, data use and challenges impacting the commercial viability of local agents. Service reliability, fraud prevention, effective grievance redress and sustainable agent networks should therefore be treated as integral elements of inclusive DPI design.

Telemedicine evidence reflects the same combination of digital infrastructure and human support. Participating women generally found eSanjeevani easy to access and relied on Health and Wellness Centre staff to facilitate consultations. Nearly all indicated that they would recommend the service, while valid responses pointed to a reduced need to travel to higher-level facilities. Providers identified general medicine and pediatric care as important use cases and highlighted stronger ABHA-linked records and multilingual interfaces as priorities. Connectivity and bandwidth limitations, documentation requirements, continuity of specialist availability, waiting times and access to medicines remain practical constraints. The evidence therefore suggests that remote healthcare generates the greatest value when it is supported by trusted facilitation, reliable infrastructure and continuity of care.

Figure 6.3. Last-mile constraints and priority responses for inclusive digital public infrastructure.

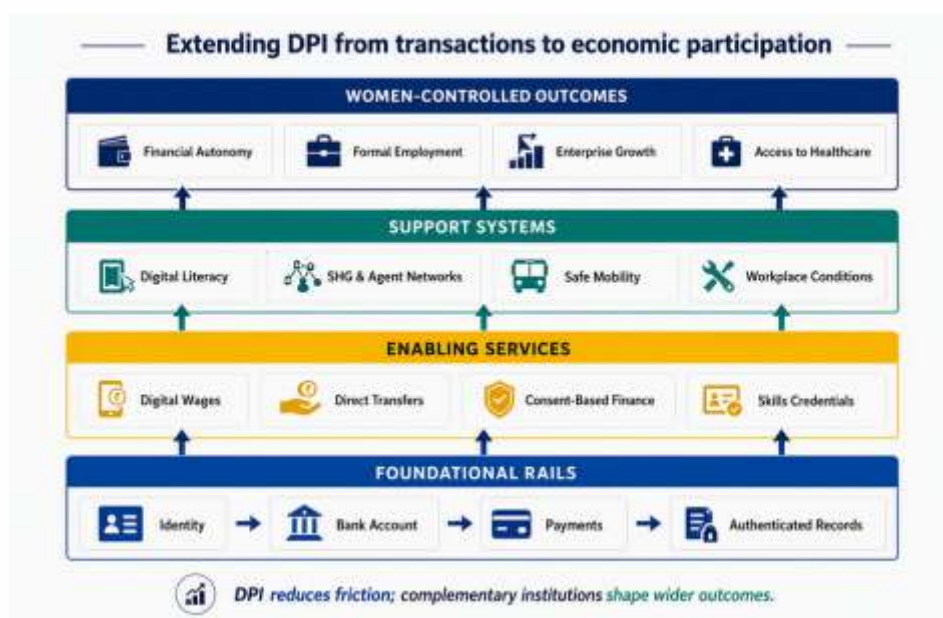
Last-mile constraints and the corresponding design response	
Constraint	Priority response
 Biometric or authentication failure	Resilient authentication and assisted fallback
 Connectivity and bandwidth	Low-bandwidth design and offline continuity
 Fraud and safety concerns	Transaction alerts, fraud assurance and rapid redress
 Shared or limited device access	Assisted channels and privacy-protective service design
 Frontline agent viability	Sustainable incentives, liquidity support and supervision
 Documentation burden in telemedicine	Streamlined workflows and linked digital health records
 Inclusive DPI depends on service reliability, trusted support and effective recourse.	

4. DPI now supports wider pathways into work, enterprise and rights-linked services

The evidence also shows that DPI extends beyond financial inclusion into the administrative systems that support formal employment. Most participating employers used Aadhaar-enabled onboarding or electronic know-your-customer processes and digital wage payments, while a majority reported using DigiLocker and EPFO-linked services. Employers generally viewed direct digital wage payments as strengthening women's financial autonomy and considered digital and numeracy skills important for entry-level employment. However, family and social pressures, skills availability, mobility and accommodation continued to influence women's access to work. DPI can therefore reduce formalization and payment frictions, but its employment impact depends on complementary investments in skills, safe mobility and enabling workplace conditions.

Evidence relating to enterprise and digital documentation points to a similar enabling role. Within the select cohort of participating women engaged in self-employment or microenterprise, UPI use was widespread and bank accounts were generally operated independently. Participating bank officials also perceived DPI as widening pathways to formal credit. Among participating companies, digital literacy was the most common women-focused intervention, followed by skilling, entrepreneurship and financial literacy. By contrast, newer platforms such as the Open Network for Digital Commerce, the Account Aggregator framework and Skill India Digital Hub were less visible. The next opportunity is to connect identity, payments and authenticated records with market access, consent-based finance, skills credentials and enterprise support, enabling women to progress from transactional inclusion to productive economic participation.

Figure 6.4. Extending DPI from transactional inclusion to women's economic participation.



5. Women's independence, confidence and trust indicate depth of participation

Within the participating group, nearly all women reported operating their bank accounts fully or mostly independently; a similarly large majority expressed high financial confidence, and a clear majority reported high trust in privacy and security. Taken together, these indicators show whether women can use financial services independently, make decisions with confidence and trust the digital channels through which they transact. They therefore provide a fuller measure of meaningful participation than account ownership alone. Pockets of neutral or low trust nevertheless remain significant. Sustained empowerment requires women to understand transactions, retain control over credentials and consent, recognize fraud risks and obtain effective redress when problems occur.

Figure 6.5. Indicative signals of women's digital agency within the participating group.



The evidence supports a positive but appropriately bounded empowerment claim. DPI strengthens women's access to accounts, payments, transfers, records, information and services—the resources and channels through which agency can be exercised. Employment, income, enterprise performance and household decision-making remain shaped by additional factors such as opportunity, control over resources, safe mobility, childcare, workplace conditions and household context. They should therefore be assessed as distinct outcomes rather than inferred from platform use.

6. The next value frontier is safe, regular and women-controlled participation

National progress has established a strong foundation for deeper inclusion, while also revealing where policy and design can unlock further value. NFHS-6 reports that

women's mobile-phone ownership and use stands at 77.6% in urban areas and 57.4% in rural areas; the corresponding levels of internet exposure are 77.3% and 58.6%. The primary evidence adds an important qualification: participating non-users were not uniformly resistant to digital services. Nearly half appeared willing, or potentially willing, to learn. Family support and trusted handholding emerged as prominent adoption enablers, while device access and assurance against fraud were also relevant. Digital exclusion should therefore be understood as a potentially solvable combination of access, capability, confidence, trust and social support, rather than as an absence of demand.

The implication is constructive. DPI can deepen its contribution when platforms are complemented by personal device access, reliable connectivity, local-language design, secure authentication, fraud safeguards, privacy-protective assistance and accessible grievance support. The inclusion frontier is therefore not simply online versus offline; it is whether women can use digital services regularly, safely, privately and with sufficient control.

Figure 6.6. An integrated pathway from digital infrastructure to women-controlled participation.



Core finding

India's experience demonstrates that DPI can advance women's empowerment most effectively as a connected inclusion architecture: digital rails reduce friction and expand choice; trusted institutions translate access into use; and women-responsive design helps convert use into sustained participation and greater agency.

7 CHAPTER

A Forward- Looking Agenda for BRICS



7 CHAPTER

A Forward-Looking Agenda for BRICS

7.1 Strategic Opportunities for BRICS Nations

As DPI evolves from foundational digital systems to a strategic enabler of inclusive development, BRICS nations have an opportunity to shape the next phase of digital transformation across the Global South. Members differ in digital maturity, institutional arrangements and development priorities, but share objectives around expanding economic opportunity, improving public-service delivery and reducing exclusion. The cooperation agenda should therefore be practical and federated: identify common outcomes and minimum principles, test interoperability and women-responsive delivery through country-led demonstrations, exchange implementation evidence, and scale approaches that prove usable, safe and institutionally sustainable. This direction is aligned with the growing BRICS emphasis on DPI, affordable and meaningful connectivity, institutional capacity building and knowledge sharing.

Creating Trusted Cross-Border Digital Ecosystems

As economic and people-to-people linkages between BRICS nations deepen, there is an opportunity to explore interoperable approaches for digital payments, credentials and trusted digital interactions. Rather than creating common platforms, countries could pursue federated interoperability models that allow national systems to remain sovereign while interacting through shared standards, trust frameworks and technical protocols. Over time, such approaches could support cross-border payments, educational mobility, professional mobility and digital service delivery while preserving national control over domestic infrastructure.

Building the Foundations for Trusted Data Exchange and AI-Enabled Development

As artificial intelligence becomes a major driver of economic growth, the availability of trusted, high-quality and responsibly governed data will become increasingly important. BRICS nations have an opportunity to explore consent-based and privacy-preserving approaches to data exchange that enable innovation while protecting individual rights and national interests. Such approaches could support the development of AI-enabled solutions across sectors such as health, agriculture, education, climate resilience and public services, helping ensure that future AI ecosystems remain inclusive, trusted and development-oriented.



Advancing Digital Credentials and Portable Opportunities

Verified digital credentials have the potential to become a key layer within future DPI ecosystems. Trusted mechanisms for verifying educational qualifications, professional certifications, skills credentials and selected public records could help reduce verification costs, improve access to employment opportunities and support greater mobility for students, workers and entrepreneurs. For women in particular, portable and verifiable digital credentials could strengthen access to jobs, skilling pathways, financial services and formal economic participation across increasingly digital economies.

Positioning BRICS as a Global South DPI Knowledge and Innovation Hub

Growing global interest in DPI presents an opportunity for BRICS nations to move beyond implementation towards shaping and exporting knowledge, good practices and reusable digital building blocks. Through knowledge-sharing platforms, innovation networks, regulatory collaboration and implementation case studies, BRICS countries can contribute to the development of practical, adaptable and inclusive DPI approaches for other emerging economies. Such cooperation can accelerate learning while reinforcing the principle that successful DPI ecosystems are adapted to local priorities, institutions and development needs.

Realising these opportunities will require more than technological advancement alone. Success will depend on ensuring that digital infrastructure remains accessible, trusted, inclusive and capable of delivering tangible outcomes for citizens. The following recommendations outline practical priorities that BRICS members may consider adapting to their national contexts

7.2 Recommendations

From population-scale access to safe, sustained and women-controlled participation

Observation

The combined evidence indicates that the next phase of women-centred DPI should focus on how reliably women can complete service journeys, not only whether a platform or account is available. The following recommendations translate the report's findings into practical priorities that BRICS members can adapt to their institutional arrangements, digital maturity and national development objectives



01 Build connected, end-to-end service journeys

Prioritise interoperability across digital identity, accounts, payments, benefit transfers, authenticated documents and sector platforms. Countries should map high-value journeys, such as welfare receipt, healthcare access, skilling-to-employment and enterprise finance, from enrolment through successful service completion. Common standards, consent-based data exchange, institutional acceptance of digital credentials and assisted or offline fallbacks can reduce repeated verification, travel and intermediary dependence.

02 Institutionalise trusted assisted access while strengthening autonomy

Treat Banking Sakhis, SHGs, health workers and comparable community-based intermediaries as part of the delivery architecture. Define service roles, certification, remuneration, device and connectivity support, referral protocols and escalation channels. Assistance should protect consent and confidentiality and be designed as a bridge: practical demonstrations and repeated support should help women progress from first use to more confident and independent transactions wherever they choose.

03 Make safety, privacy and women's control core design requirements

Build local-language and low-literacy interfaces, secure but usable authentication, account-recovery options, clear transaction confirmations, fraud awareness and accessible grievance redressal into every service. Assisted channels should provide sufficient privacy for financial, health, and document-related transactions. Implementation should also address uneven personal-device access and rural connectivity so that digitisation does not create new dependence on household members or intermediaries.

04 Connect DPI to economic and rights-linked opportunities

Link recognised digital credentials and skilling platforms with jobs, apprenticeships and employer demand; use DPI to streamline onboarding, wage receipt and social-security access; and connect women-led enterprises with formalisation, suitable finance and digital markets. These pathways should be paired with employer engagement, safe mobility, childcare, mentoring and market-support measures. DPI can lower procedural friction, but complementary institutions are necessary to translate access into durable participation.



05 Measure meaningful participation and use evidence to improve delivery

Complement scale indicators with sex-disaggregated measures of regular use, direct receipt, successful completion, time and travel saved, assistance required, privacy, trust, user control, fraud incidence and grievance resolution. Employment, income, enterprise performance and household decision-making should be evaluated separately as wider outcomes influenced by multiple factors. BRICS cooperation can support a shared measurement vocabulary and exchange findings from comparable, country-led pilots without imposing a single delivery model.

06 Voluntary BRICS delivery and learning mechanism

Connect the BRICS ICT Working Group, DPI Focus Group, relevant sector tracks, development-finance institutions, industry and women's organisations through a light coordination mechanism. Its annual work programme should maintain a repository of tested practices, convene technical clinics, match peer countries for implementation support and sponsor a small portfolio of country-led demonstrations. Participation should remain voluntary, with national systems, data and regulatory authority retained domestically.

7.3 Call to Action for Senior Leaders

From shared ambition to coordinated, country-led action

Core finding

The report's evidence points to a clear leadership priority: move beyond expanding digital access towards women-centered service delivery that is trusted, usable and measurable. Senior leaders should connect public digital infrastructure with accountable institutions, responsive service design and outcomes that matter to women, including successful service completion, convenience, privacy, effective grievance resolution and user control. BRICS cooperation can accelerate this transition through structured peer learning and country-led implementation that recognises differences in digital maturity, national priorities and domestic legal frameworks.

Leadership responsibilities

01 Government

- Set direction and accountability: define the public-interest mandate and assign accountable leadership for priority service journeys.

- Create the enabling framework: establish interoperable standards, proportionate safeguards, inclusive procurement and sustainable financing; retain assisted and offline channels.
- Monitor meaningful outcomes: track access, completion, privacy, grievance resolution and user control through sex-disaggregated data.

02 Industry

- Build trusted services: deliver secure, affordable and interoperable services on public digital rails, using local-language, low-literacy and accessible design.
- Protect and support users: enable meaningful consent and responsive assistance.
- Connect capability and opportunity: link digital capability with credentials, employment, wage receipt, social protection, enterprise finance and markets; share appropriate service-performance evidence.

03 Civil society

- Bring lived experience into decisions: embed women's perspectives in service design, delivery and review.
- Support trusted adoption: engage women's organisations, SHGs, frontline workers, community networks and research institutions.
- Provide independent feedback: identify exclusion and harm early, strengthen awareness and grievance referral, and assess usability, safety and responsiveness.

Advancing a Coordinated BRICS DPI Agenda

A country-led cycle from shared priorities to responsible scale

01 ALIGN

Agree one priority women-centred service journey, shared outcomes and an accountable national lead, without prescribing a uniform technology or delivery model.

02 DEMONSTRATE

Run a country-led demonstration around the end-to-end journey, with a baseline, safeguards, user feedback and clear delivery responsibilities.

03 LEARN

Use an adaptable results vocabulary and exchange implementation evidence, reusable standards and operational lessons while protecting sensitive data.



04 SCALE

Subject proven approaches to technical and user review; mobilise appropriate public, private and development finance; and integrate them through national systems using country-specific models.

Leadership commitment for the next cooperation cycle

Each participating country should select one priority women-centred service journey, designate an accountable national focal point and convene a multi-stakeholder group. It should establish a baseline and agreed performance measures, then bring early implementation evidence and operational lessons into a structured BRICS peer exchange. This creates a practical cycle of country-led action, evidence-based learning and responsible scale without prescribing a uniform technology or delivery model.

7.4 Action Pathway

A credible cooperation pathway should translate shared ambition into a small portfolio of visible, country-led deliverables. The 36-month cycle below combines national ownership with structured BRICS support: countries select priority service journeys, agree a minimum results vocabulary, test women-responsive delivery, compare implementation evidence and scale only after safeguards and user outcomes have been demonstrated. No personal or sensitive data need to move across borders; cooperation can focus on standards, methods, aggregated results, reusable technical components and operational lessons.

Priority Collaboration Opportunities

Opportunity	Collaborative action and illustrative example	Early deliverable
Meaningful connectivity and assisted access	Compare gender-disaggregated connectivity gaps and test low-bandwidth, offline and trusted-assistance models—for example, a rural telehealth journey supported by trained community facilitators and offline appointment confirmation.	Common diagnostic template and paired-country demonstrations.
Interoperable payments and portable credentials	Develop voluntary technical profiles and test recognition in sandboxes—for example, verify a woman worker's digital skill certificate across two BRICS jurisdictions before any live cross-border deployment.	Sandbox specification, trust-registry model and prototype.

Opportunity	Collaborative action and illustrative example	Early deliverable
Privacy, safety and grievance redressal	Exchange consent patterns, secure recovery methods and fraud typologies—for example, test a local-language lost-phone and account-recovery journey with a defined escalation time.	Women-responsive safety checklist and complaint-handling principles.
Women's livelihoods, enterprise and digital markets	Link skills, credentials, finance and market onboarding—for example, connect women-led food-processing enterprises with verified training, suitable working-capital products and buyer discovery.	Sector pathway pilots and a mentor-and-market network.
Responsible data and AI	Share non-personal datasets and evaluation methods—for example, jointly test whether an agricultural advisory tool performs equitably for women farmers across languages and low-connectivity settings.	Responsible-use template and one jointly evaluated use case.
Financing and implementation capacity	Develop bankable templates and inclusive procurement clauses—for example, package a low-bandwidth assisted-service pilot with defined capital, training and operating-cost requirements.	Demonstration-financing window and project-preparation toolkit.



8 CHAPTER

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