

Payment Infrastructure Development Fund (PIDF) Impact Assessment

September 2024



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Foreword by Payments Council of India (PCI)

I am pleased to present the PIDF Impact Assessment Report: Accelerating Digital Payments in India. This report delves into the transformative impact of PIDF, highlighting its pivotal role in deepening the digital payments infrastructure, especially in the less penetrated geographies of the country. As we navigate through a digital age, this report provides critical insights into how PIDF initiatives are shaping a more connected, efficient, and inclusive financial landscape for India.

Digital payments have emerged as a transformative force in India's economic landscape, touching every sector with its promise of accessibility, efficiency, and inclusivity. The PIDF stands as a cornerstone in this journey, catalysing the adoption of digital payment technologies across various domains.

PCI and Grant Thornton Bharat (GTB), as the knowledge partner, prepared this report to illuminate the profound impact of PIDF on the digital payments' ecosystem and furthering the financial inclusion. It explores how initiatives under PIDF have bolstered infrastructure, empowered businesses, and enriched consumer experiences nationwide. From tier III and below centres, PIDF has facilitated digital payments that have not only simplified transactions but also driven financial inclusion and economic growth.

Continuous investments in payments infrastructure development, coupled with partnerships with major private players, have significantly improved accessibility of person-to-merchant (P2M) infrastructure through physical and digital point-of-sale (PoS). These efforts have not only accelerated the adoption of digital payment solutions but have also laid a robust foundation for future innovations in financial transactions.

Consumer Adoption: The rapid proliferation of mobile devices and increased smartphone penetration have revolutionized consumer behaviour towards digital transactions. With smartphones becoming ubiquitous, consumers have embraced digital payment platforms for their convenience, reliability, and security. This shift reflects a fundamental change in how consumers conduct transactions, driving the demand for digital payment solutions across diverse demographics.

Industry Collaborations: Collaborations among stakeholders as Bank and Non-bank acquirers and merchants, have played a pivotal role in expanding the reach and usability of digital payments.

This report explores how PIDF has impacted street vendors, merchants, and small businesses in terms of ease of doing business, behavioural changes, and economic shifts.

It serves as an invaluable resource for policymakers, industry stakeholders, and researchers, offering actionable insights to inform strategic decision-making, drive policy reforms, and foster innovation in the digital payments ecosystem.

On behalf of PCI, I invite you to explore the detailed findings in this report, which illuminate both the successes we have achieved and the pathways for future advancements. Together, let us leverage the transformative power of PIDF initiatives to build a more inclusive, resilient, and digitally empowered India.

Vishwas Patel

Chairperson,
Payments Council of India

Executive Summary

The Reserve Bank of India (RBI) operationalized PIDF in January 2021 to bridge the digital divide in payment acceptance infrastructure across India's unbanked population. Targeting tier III to tier VI centres, the Northeastern states, and the Union Territories (UTs) of Jammu S Kashmir (JSK) and Ladakh, the PIDF aims to significantly increase the deployment of physical PoS and Quick Response (QR) codes. In August 2021, the scheme extended its coverage to beneficiaries of the PM Street Vendor's AtmaNirbhar Nidhi (PM SVANidhi) Scheme in tier I and tier II centres as well. In a country where 72% of the population resides in tier III and below centres, the PIDF has played a crucial role in enhancing digital payment penetration despite the high operational costs of deploying and servicing payment infrastructure in these areas. By subsidizing the cost of acceptance infrastructure, the PIDF seeks to lower the financial barriers for acquiring banks, non-banks, and merchants, fostering a widespread adoption of digital payments. This initiative aligns with the RBI's Payments Vision 2019-21 to make digital payments more accessible and affordable, particularly for merchants providing essential services such as transport, hospitality, healthcare, and retail in the targeted geographies. Through these efforts, the PIDF aims to promote financial inclusion, deepen the digital payments infrastructure at the last mile, and enhance the economic participation of small merchants in India's evolving digital economy.

As of March 2024, PIDF has deployed 89 lakh physical PoS, 3462 lakh Unified Payment Interface (UPI) QR codes, and 63 lakh BharatQR codes. Despite these successes, rural-urban disparities in digital financial activities persist. We aim to evaluate the effectiveness of PIDF in promoting sustainable digital payment adoption through our impact assessment and identify areas for improvement to optimize its implementation for merchants across India.

We conducted a meticulous 360-degree evaluation of the impact of PIDF across tier III and below centres, combining secondary research with primary research. Our secondary research utilized sources such as RBI notifications, National Institution for Transforming India (NITI Aayog) reports, and global financial inclusion studies. These findings informed our questionnaire design, which was tailored to capture the operational, economic, and behavioural impacts of digital payment adoption on merchants.

Our primary research involved engaging directly with 700 merchants across five states: Assam, Bihar, Jharkhand, Gujarat, and Uttar Pradesh. We selected these states based on per varying capita digital payment density as low, medium and high, as reported by the Ministry of Electronics and Information Technology (MeitY), to ensure a representative sample. We sampled 100 merchants each

from high-density areas like Noida and Barabanki, medium-density areas like Ahmedabad and Ranchi, and 200 and 100 merchants from low-density areas like Guwahati and Patna, respectively. We conducted in-depth interviews with merchants and leading acquirers, as well as payment networks. The questionnaire was designed to capture detailed insights on cash management efficiency, sales revenue growth, transaction frequencies, and merchant satisfaction.

We assessed the impact of PIDF on various facets of digital payment adoption by focusing on both qualitative data from merchant experiences and strategic perspectives from acquirers and payment networks. This comprehensive methodology ensured high-quality data collection through pilot testing, stakeholder feedback, and trained surveyors, providing a thorough assessment of PIDF's effectiveness in enhancing digital payment infrastructure in unbanked regions.

The secondary research details how PIDF plays a critical role in addressing the digital payment infrastructure gap in India's tier III and below centres. Below are the inputs on deployment trends and transaction volumes, highlighting the scheme's impact on accelerating the adoption of digital payment technologies. Additionally, the research identifies disparities in digital financial activities between urban and rural areas, emphasizing the need for targeted interventions to achieve equitable financial inclusion nationwide.

- **Differential Impact on QR Code Deployment:** UPI QR codes saw rapid growth post-PIDF implementation, adding incremental growth of 274% in three years (Mar'21 to Mar'24) with total UPI QR code growth from 925 Lakh to 3462 lakh. In contrast, growth of BharatQR codes is much slower at 75% in three years, from 36 Lakhs in March 2021 to 63 Lakhs in March 2024.
- **Accelerated Growth of PoS:** Physical PoS experienced significant growth with increase from 44 lakh in March 2020 to 89 lakh by March 2024, reflecting a heightened compounded annual growth rate (CAGR) of 23.72%.
- **Surge in UPI Merchant Transactions:** UPI transactions exhibited substantial growth, especially in merchant payments. The share of UPI P2M transactions increased from 34% in FY 2021-22 to 59% in FY 2023-24, highlighting the positive impact of PIDF on digital payment adoption.

The below key findings from the primary survey reflects significant transformations in the payment ecosystem following the introduction of the PIDF, demonstrating substantial improvements in merchant adoption and operational efficiency:

Impact on Increasing Digital Payments Acceptance Infrastructure Penetration

- **PIDF Impact on deepening of Digital Payment Acceptance Infrastructure:** 74.4% of merchants (81.9% of merchants with annual revenue of less than 5 Lakhs) adopted digital payments acceptance instrument only within the last three years, indicating a significant increase in recent adoption rates driven by the PIDF. The next few PIDF years holds great importance, wherein each uncovered nano-scale merchant would potentially be using the digital payment.
- **Merchant Profile:** 65% of merchants were from Food, Grocery and apparel merchant categories. 97% merchants were Nano-enterprises with annual turnover < INR 20 lakh with Women's participation at ~7%.
- Sound-based notification devices have successfully made inroads into tier III and below centres, with ~68% merchants' usage, despite their introduction in 2019. These devices solved the 'payment confirmation' concern in regional languages at a low cost.
- **Cash is not the most preferred mode of merchant transactions:** UPI has surpassed cash as the mode of payment acceptance, 88% of merchants have ranked UPI as the 'Most preferred and used' payment acceptance instrument for most transactions, followed by cash, ranked by 67% of merchants.

Business Impact and Operational Efficacy

- Merchants have ranked safe and secure payment acceptance as the top impact on their businesses, indicating that the digital payments ecosystem has successfully gained their trust. The reduction in efforts required to handle cash and the absence of the need to provide change have been ranked second and third, respectively.
- More than 75% of merchants reported increased sales revenue after adopting digital payments, and almost all respondents mentioned experiencing time savings when using digital payments.
- 62% of merchants highlighted saving money by visiting the bank less frequently, and 51% mentioned saving money by paying vendors digitally.
- **Efficient Inventory Management:** 63% of merchants have ranked easier inventory management due to digital payments as the top factor in increasing efficiency in fund management.
- **Time Saving:** About 61% of merchants reported significant time savings (more than an hour) due to adopting digital payments, followed by 28% reporting moderate time savings (30 minutes to an hour).

- **Digitizing the Value Chain:** Around 61% of the merchants are paying their vendors through digital payment instruments, with 16% paying all their suppliers digitally and 45% paying most of their vendors digitally.
- Around 1/6th of merchants with annual turnover less than ₹5 lakh experience less than one digital payment acceptance transaction on daily basis. This explains the reason for 'Inactive deployment basis minimum usage criteria under PIDF.

Economic Impact of PIDF to Merchants

- **Shift Towards Usage of Financial Service Instrument:** ~75% of merchants started using financial services instruments for personal and business use, post the adoption of digital payment acceptance instruments, furthered by PIDF
- **Significant Shift in Turnover to Digital Payments:** 42% of merchants reported that 30-60% of their turnover is now collected via digital payments, illustrating a substantial transition towards cashless transactions.
- For lending, the rise in fintech companies utilising alternative data sources to assess creditworthiness has likely driven increased engagement, with 39% of merchants using lending services from financial institutions.

Digital payments improvement and concerns

- **Rapid Issue Resolution:** 60% of digital payment issues are resolved within 24 hours, indicating improved customer support and service quality for merchants leveraging digital payment systems.
- Consumer side frauds have been highlighted by 36% of the merchants. These deceptive practices from consumers may deter merchants from accepting digital payment acceptance instruments.
- Transaction failures, including customers not receiving a one-time password (OTP), declined transactions, and merchants not receiving money after customers have paid, have been highlighted by 26% of merchants.

Case studies on Impact on merchants especially women merchants in north east space

As part of our primary survey, we conducted in-depth interviews with merchants compiling them into case studies. These merchants experienced several key benefits after adopting digital payments:

- **Increased Customer Conversion and Satisfaction:** The adoption of digital payments significantly improved customer conversion rates for merchants like Muskan and Dipika. Muskan's beauty parlour saw a 15-20% increase in revenue from regular customers who found it easier to pay through mobile apps, eliminating the hassle of carrying cash. Dipika's paan

shop similarly attracted new customers seeking the convenience of digital transactions, boosting daily footfall, and enhancing customer satisfaction.

- **Enhanced Safety and Reduced Theft Concerns:** For Moon and Bichitra, digital payments brought peace of mind by eliminating the need for cash handling. Moon, running a pharmacy, appreciated the reduced risk of theft during the pandemic and improved safety for herself and her customers. Bichitra, who manages an electrical shop, no longer worries about cash security after switching to digital transactions. This change has improved her overall business management and reduced her anxiety.
- **Financial Management and Savings:** Krishna Devi and Vishal found digital payments instrumental in improving their financial management. Krishna Devi, managing a hardware shop, embraced digital records, and found it easier to save and invest, enhancing her financial stability. Vishal, dealing with delayed payments previously, now enjoys consistent income through digital transactions, enabling him to invest in mutual funds and secure his family's future.
- **Operational Efficiency and Time Savings:** Shishir and Bhaskarjyoti experienced significant operational

improvements with digital payments. Shishir's hardware shop saw a 20-25% increase in daily revenue due to streamlined banking processes and reduced administrative costs. Bhaskarjyoti, running a general store, saved time previously spent on cash transactions, allowing him to focus more on customer service and business growth.

- **Community Trust and Business Growth:** Hanif and Pawan highlighted how digital payments fostered community trust and business growth. Hanif's tea stall attracted more customers and increased daily turnover, supported by the convenience and safety of digital transactions. Pawan, managing a small shop, built goodwill through transparent payment tracking and reduced bank visits, enhancing customer loyalty and business reputation.

By addressing operational costs, enhancing merchant support, and promoting both digital and physical payment acceptance, PIDF has significantly contributed to bridging the rural-urban digital divide, fostering cashless transactions, and empowering local economies.



1. Introduction

1.1 Digital Financial Inclusion in India: From Where It All Began

Over the past decade, India's strides in financial inclusion have been driven by well-planned programs and government initiatives such as PMJDY, DBT, the introduction of RuPay cards, and measures implemented by the central bank. The table below outlines significant milestones in the expansion of India's DFS sector since 2005. It highlights key government actions that have promoted digital financial services, showing India's growth in this sector. Emphasis is placed on identifying key trends and growth drivers, particularly within the digital payments sector, aimed at fostering greater financial inclusion.

1.1.1 Timeline

2005 to 2010	2011 to 2014	Post 2015
2005: RBI mandated banks to offer no-frills account, aiming to extend banking services to low-income individuals. 2005: NEFT established 2006: Banks authorized to collaborate with NGO, MFIs, and SHGs as BCs to broaden banking outreach. 2007: PSS Act 2008: Establishment of NPCI 2009: Establishment of UIDAI and roll out of Aadhaar 2009: RBI issued guidelines for PPIs including mobile wallets 2010: RBI permitted for-profit entities to act as BCs 2010: NPCI introduced IMPS	2011: Launch of AePS 2012: Permission for non-bank entities to operate WLAs 2012: RuPay cards introduced 2013: DBT scheme implemented to streamline fund transfers and enhance transparency in government fund disbursements. 2014: PMJDY, along with JAM trinity introduced.	2015: Guidelines on payment bank and small finance bank licenses by RBI 2016: NPCI launched UPI for inter-bank P2P and P2M transactions. 2016: Post demonetization, NPCI introduced BHIM for secure mobile payments to promote a cashless economy. 2017: BBPS, an interoperable platform for recurring bill payments went live. 2017: Interoperability guidelines issued for PPIs 2019: NCMC was introduced under the 'One Nation, One Card' initiative. 2020: Introduction to zero MDR for UPI and RuPay transactions 2021: PIDF was introduced
Focus on Digital Financial Inclusion		
Up until 2015, the emphasis was on establishing a unique identity through Aadhaar, ensuring universal access to banking through basic accounts, and distributing RuPay debit cards with accident insurance coverage of INR 100,000 under PMJDY.	Post 2015, efforts have focused on broadening financial inclusion by integrating more individuals into the formal financial system. Initiatives such as DBT, digital payments, and the promotion of RuPay cards have been pivotal in both retaining existing users and stimulating transaction activities.	Currently, the RBI is prioritizing expanding its reach by optimizing bank branches, BCs, expanding digital and physical payment acceptance infrastructure, new innovations on UPI stack, and digital payment mechanisms to advance towards a cashless economy.

AePS - Aadhaar-enabled payment systems
BBPS - Bharat Bill Payment System
BCs - business correspondents
BHIM - Bharat Interface for Money
DBT - Direct Benefit Transfer

DFS - Digital Financial Services
IMPS - Immediate Payment Service
MDR - Merchant Discount Rate
MFIs - Micro-Finance Institutions
NCMC - National Common Mobility Card

NEFT - National Electronic Funds Transfer
NGO - Non-Governmental Organizations
NPCI - National Payments Corporation of India
P2P - Person-to-Person
PPIs - Prepaid Payment Instruments

PSSA - Payment and Settlement Systems Act
RuPay - Rupee and Payments
SHGs - Self-help groups
UIDAI - Unique Identification Authority of India
WLAs - White Label ATMs

1.2 Snapshot of layers of Digital Payments Acceptance Infrastructure

India has made substantial strides in enhancing payment infrastructure crucial for fostering a cashless economy. This report explores pivotal elements such as the JAM Trinity, the extensive utilization of debit and credit cards, and the expansion of physical PoS, Micro-ATMs, PPIs, and QR codes. It also evaluates transaction volumes across UPI, BBPS, and FASTag, illustrating the rapid adoption of digital payments. These advancements have significantly bolstered convenience, reduced reliance on cash, and promoted greater financial inclusion.



Infrastructure Layer

JAM Trinity (in crore)

138 Aadhaar Registration ¹ (June'24)	94 Internet Subscribers ² (Dec'23)	89 Mobile Devices Users ³ (Apr'24)	52 Jan Dhan Bank Accounts ⁴ (June'24)
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Payments Infrastructure Layer (Mar 2024)

Number of Payment Infrastructures (in lakh)⁵

3462 UPI QR	882 FASTag	89 PoS	63 BharatQR	18 Micro-ATMs
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Digital Payments Transactions for FY 2023-24 (in crore)

16,443 Total Digital Payments Transactions ⁶	7,760 UPI P2M ⁷	352 FASTag ⁸
186 PoS based Credit Card Transactions ⁹ (10 crore credit cards issued as of Mar'24)	165 PoS based Debit Card Transactions ¹⁰ (96 crore debit cards issued as of Mar'24)	2 AePS P2M ¹¹ (BHIM Aadhaar Pay)

¹ Unique Identification Authority of India
² The Indian Telecom Services Performance Indicators
³ Telecom Regulatory Authority of India
⁴ Pradhan Mantri Jan Dhan Yojana
⁵ Payment System Indicators, RBI
⁶ Payment System Indicators, RBI
⁷ UPI Ecosystem Statistics, NPCI
⁸ FASTag Product Statistics, NETC
⁹ Payment System Indicators, RBI
¹⁰ Payment System Indicators, RBI
¹¹ AePS Product Statistics, NPCI

1.3 Accelerating Access: India's Digital Payment Evolution

India's payment ecosystem has experienced significant growth both in terms of digital payment acceptance infrastructure and usage. Infrastructure enhancements include the widespread adoption of QR codes such as BharatQR and UPI QR, an increase in physical PoS, and the nationwide proliferation of Micro-ATMs. AePS transactions have also seen growth, underscoring efforts to promote financial inclusivity.

On the usage front, debit card transactions have maintained stability, while credit card transactions at PoS have shown substantial growth. UPI transactions have witnessed remarkable expansion, solidifying their position as a cornerstone of digital payments in India. Despite a minor decline in transaction volumes, PPI Wallets continue to play a pivotal role in India's digital payment landscape.

1.3.1 Acceptance Side

QR Code¹²

The deployment trends of BharatQR and UPI QR codes reveal distinct adoption patterns. UPI QR codes have consistently shown rapid growth, adding nearly 900 lakh codes in FY 2023-24, reflecting an annual growth rate of 35%. In contrast, BharatQR experienced substantial initial growth, increasing from 20 lakh in March 2020 to 50 lakh in March 2022. However, its growth slowed considerably, with an addition of just 9 lakh in FY 2023-24, indicating an annual growth rate of 16%.

The impact of the PIDF implementation in 2021 is evident on UPI QR codes. The deployment of UPI QR codes has almost quadrupled (an absolute increase of 274% in three years) since March 2021. Although the year-on-year (YoY) growth rate has decreased, owing to the previous year's base. However, the PIDF benefit seems not percolated to BharatQR codes, as in the same period (Mar'21 to Mar'24), BharatQR codes have experienced a feeble growth of 75%. This growth is even more modest, considering the lower initial base compared to UPI QR codes.

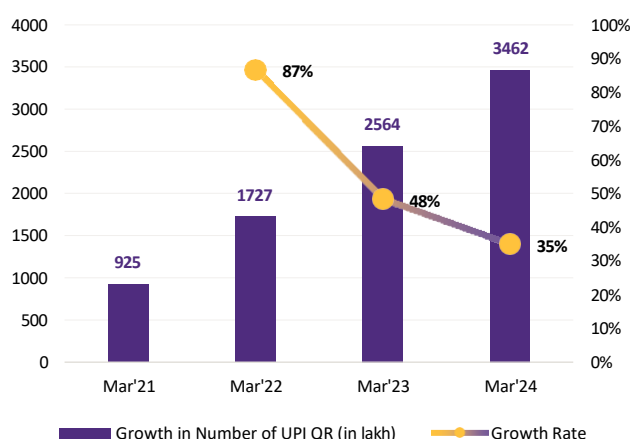


Figure 1: Impact of PIDF on UPI QR deployment growth rate

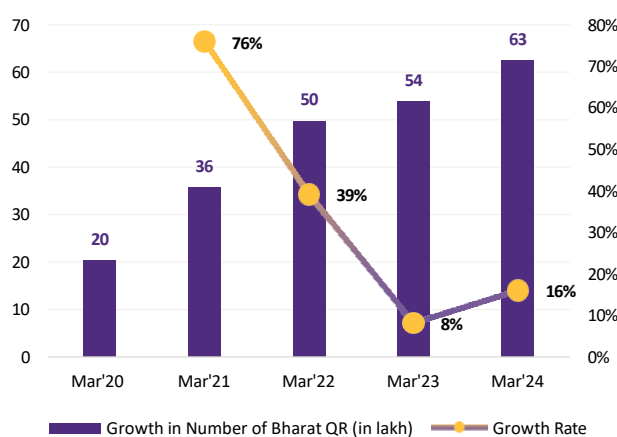


Figure 2: Impact of PIDF on BharatQR deployment growth rate

¹² Payment System Indicators, DBIE

PoS¹³

Physical PoS also benefited from PIDF at an aggregate level. During the period leading up to the PIDF implementation (Mar'17 to Mar'21), physical PoS demonstrated a CAGR of 17.01%. Post the implementation of PIDF in 2021, this growth accelerated further, with the number of devices reaching 89.03 lakh by March 2024, reflecting a heightened CAGR of 23.72%. We need to highlight that the Debit card transactions have decreased from 417 Crore (FY 2019-20) to 165 Crore (FY 2023-24) and Credit card transactions has remained almost the same, while the PoS numbers have almost doubled. Such an increase in PoS numbers should ideally be a combination of demand and supply. However, Debit card and Credit card usage has decreased in absolute numbers collectively, this big push came from the supply of digital payment acceptance infrastructure because of PIDF

Debit card and Credit card usage (indicating the demand for card based transactions) has decreased significantly in absolute numbers collectively from FY 2019-20 to FY 2023-24, while the physical PoS numbers have doubled. This big push came from the supply of digital payment acceptance infrastructure, facilitated by PIDF

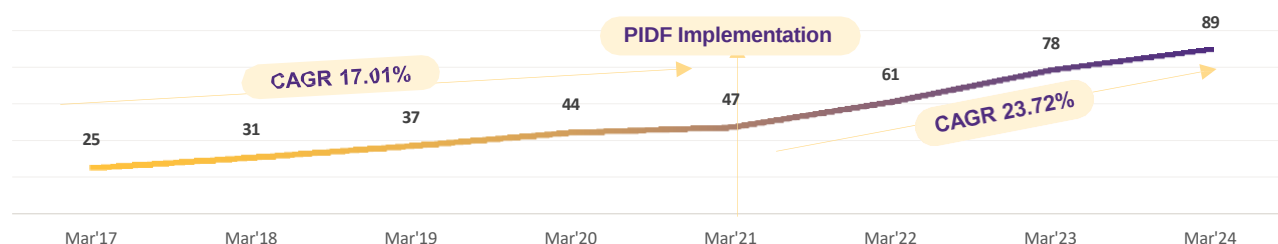


Figure 3: Impact of PIDF on physical PoS deployment growth rate (in lakh)

Micro-ATMs¹⁴

Micro-ATMs play a crucial role in enabling basic banking transactions such as withdrawals, deposits, and balance inquiries, thereby extending essential financial services to a larger population nationwide. The number of Micro-ATMs has significantly increased from 4.04 lakh in March 2021 to 17.55 lakh in March 2024. Although Micro-ATMs are not currently part of the PIDF, this substantial growth indicates their pivotal role in enhancing financial inclusion.



Figure 4: Total number of Micro-ATMs deployed (in lakh)

AePS¹⁵

AePS has shown a remarkable growth, with approved BHIM Aadhaar Pay transactions increasing from 19.6 lakh in FY 2017-18 to 194 lakh in FY 2023-24, demonstrating a robust CAGR of 46.5%. AePS plays a crucial role in providing essential banking services such as withdrawals, deposits, and balance inquiries through Aadhaar authentication.

Prior to the implementation of PIDF, AePS transactions were increasing steadily, reaching a peak of 228 lakh in FY 2021-22. However, following the PIDF implementation, transactions declined to 214.2 lakh in FY 2022-23 and further to 194 lakh in FY 2023-24. This decline suggests a shift in focus towards other digital payment infrastructures, thus pointing indirectly towards PIDF success.

¹³ Payment System Indicators, DBIE

¹⁴ Payment System Indicators, DBIE

¹⁵ AePS Product Statistics, NPCI

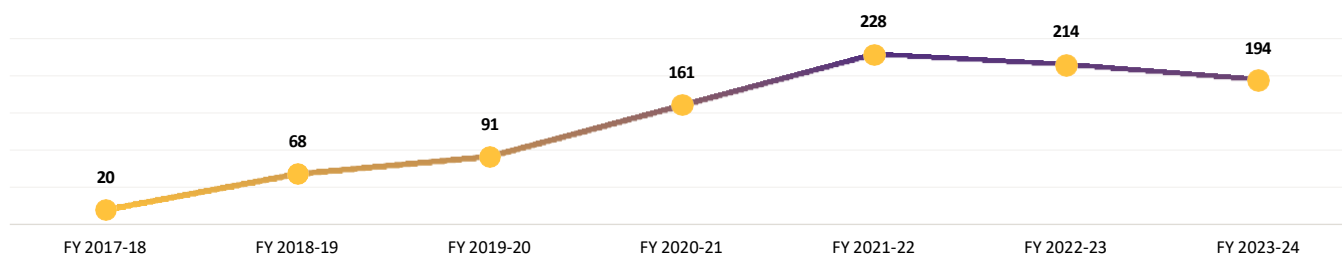


Figure 5: Growth in approved BHIM Aadhaar pay transactions (in lakh)

1.3.2 Usage Side

Debit Card and Credit Card Usage at PoS¹⁶

The volume of PoS based debit and credit card transactions displayed a substantial upward trend from FY 2015-16 to FY 2018-19. However, both experienced significant declines in March 2020 due to the COVID-19 pandemic. Debit card transactions fell from 417 crore in FY 2019-20 to 208 crore in FY 2020-21, an approximate 50% decrease, while credit card transactions dropped from 178 crore to 87 crore, a 51% decrease. The lockdown induced reduced activity, contributed to this decline. Although there was a partial recovery in the following years, with debit card transactions reaching 165 crore and credit card transactions 186 crore in FY 2023-24, credit card transactions at PoS have returned to pre-pandemic levels, while debit card transactions continue to fall, highlighting a potential shift in consumer payment preferences.

The reduced debit card transactions clearly indicate that people are preferring making payments through UPI.

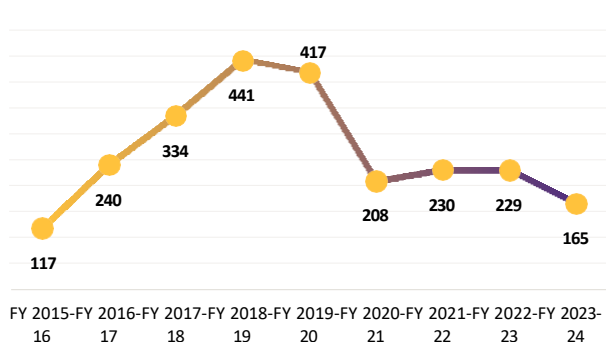


Figure 6: Impact of PIDF on volume of debit card transactions at PoS (in crore)

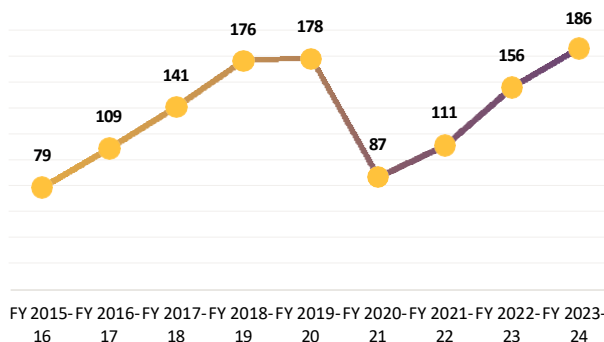


Figure 7: Impact of PIDF on volume of credit card transactions at PoS (in crore)

UPI (P2P and P2M)¹⁷

The total volume of UPI transactions has exhibited a consistent upward trajectory, escalating from 2 crore in FY 2016-17 to 13,116 crore in FY 2023-24. Particularly noteworthy is the substantial growth in UPI P2M transactions, especially evident post the implementation of the PIDF in 2021. In FY 2021-22, UPI P2M transactions accounted for 34% of the total UPI transactions. This share saw significant expansion to 51% in FY 2022-23 and further surged to 59% in FY 2023-24¹⁸.

This persistent growth underscores the increasing adoption of UPI for merchant payments, which has become notably prominent since 2021, highlighting the positive impact of the PIDF in expanding digital payments infrastructure.

¹⁶ Payment System Indicators, DBIE

¹⁷ UPI Product Statistics, NPCI

¹⁸ P2M transaction volume data is only available post FY 2021-22.

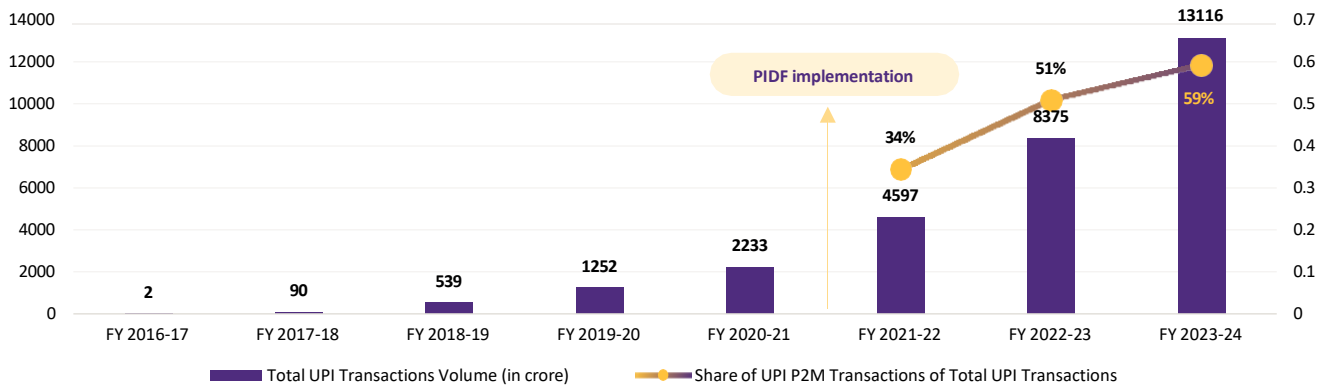


Figure 8: UPI transactions growth (overall and P2M - post 2021)

PPI (Prepaid Instruments)¹⁹

The volume of transactions through PPI Wallets and PPI Cards has exhibited notable trends over recent years. From FY 2015-16 to FY 2023-24, PPI Wallet transactions increased steadily from 60 crore to 633 crore, with a minor decline observed in FY 2020-21. Meanwhile, PPI Card transactions showed a significant rise from 14 crore to 115 crore between FY 2015-16 and FY 2019-20, stabilizing at 156 crore from FY 2022-23 onwards.

Assuming a similar proportion of P2M transactions as observed in UPI for PPI wallet transactions, the share of P2M transactions in total PPI transactions has grown substantially. In FY 2020-21, this share was 54%, which increased to 72% in FY 2022-23 and further rose to 79% in FY 2023-24. This growth is attributed to the implementation of the PIDF in 2021, which has bolstered the adoption of P2M transactions within the overall PPI landscape. The PIDF initiative has played a crucial role in enhancing acceptance infrastructure and promoting digital payments, particularly in underserved areas.

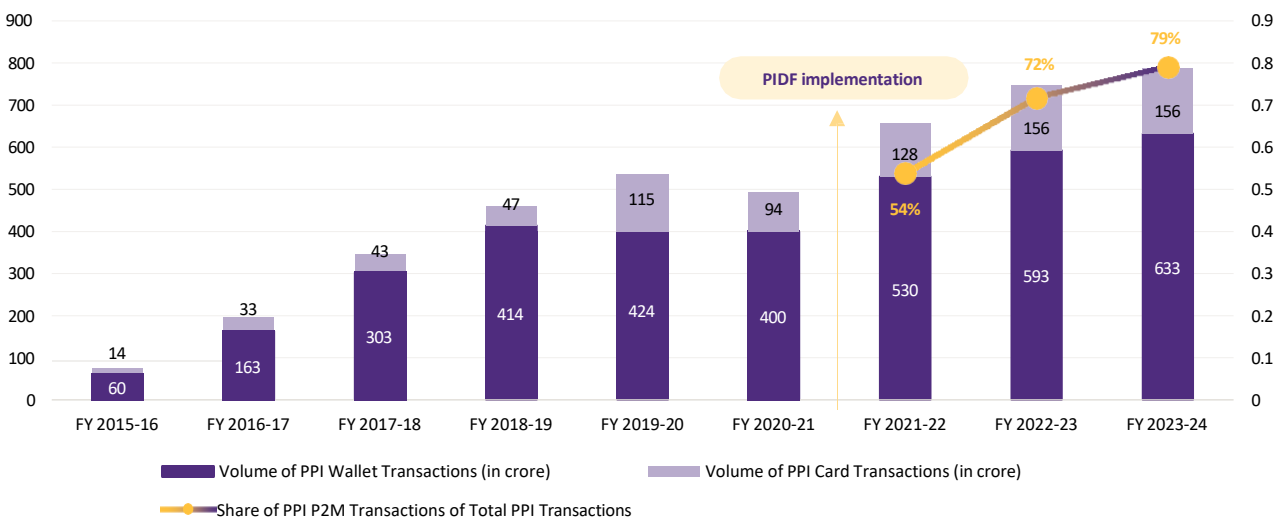


Figure 9: PPI transactions growth (overall and P2M - post 2021)

¹⁹ Payment System Indicators, DBIE

Subdued Credit Card-based growth

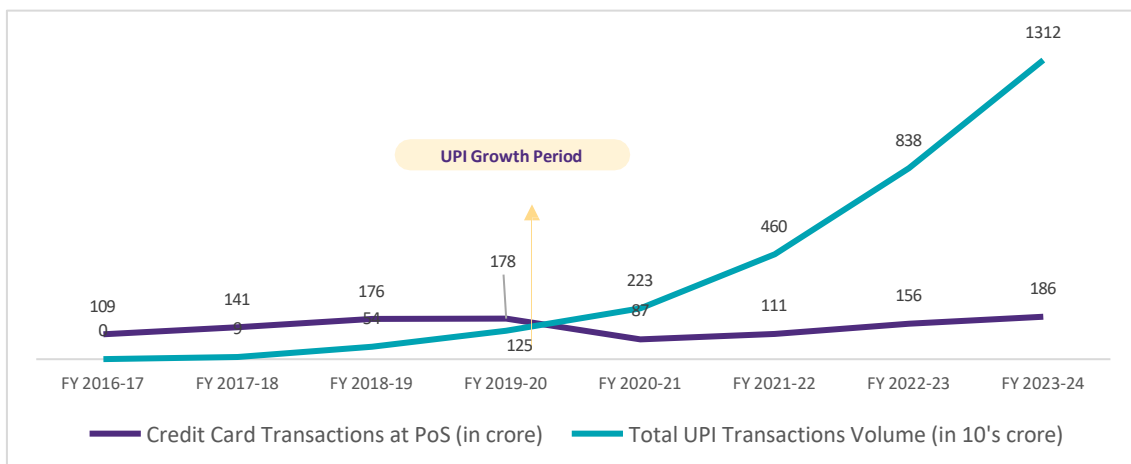


Figure 10: Comparison of Credit Card transactions (PoS) vs UPI (overall) - post FY 2016-17

The credit card volume was growing at a CAGR of 30.9% for the period FY 2015-19, which has subdued to 1.1% for FY 2019-24. In the same period (FY 2019-24), the UPI-based transactions (essentially debit card/account based transaction) has grown at staggering CAGR of 59.9%. There has been sub-optimal growth in credit card based transactions can be partially attributed to debit card/account based transaction using UPI. Over the recent years, as shared in section 1.3.1, there has been growth in physical PoS-based supply side infrastructure, but that has not translated into more Credit Card based transactions, owing to user's preference to UPI over Cards.



2. PIDF: Need, Objectives Achievements and Gaps

2.1 Need for PIDF

Penetrating Tier III and below centres with digital payment infrastructure is crucial, given that approximately 72% of India's population resides in these areas. However, these regions often face challenges such as insufficient banking infrastructure and limited access to digital financial services. To bridge this gap RBI conceptualized PIDF for innovative solutions to extend financial inclusion in underserved areas of India, particularly in tier III to tier VI towns.

2.1.1 Number of People per PoS

India's payment infrastructure had experienced notable growth, with the number of PoS reaching 0.46 crore by the end of 2020. Despite this progress, the density of PoS remained relatively low in 2020, with each device serving approximately 296 people²⁰, compared to Brazil's 16 people per PoS. This indicates a significant gap in per capita access to digital payment acceptance facilities. This **people per PoS has shown significant improvement from 296 people/PoS in 2020 to 156 people/PoS in 2024** (assuming YoY population growth for India as 0.8% since 2020)

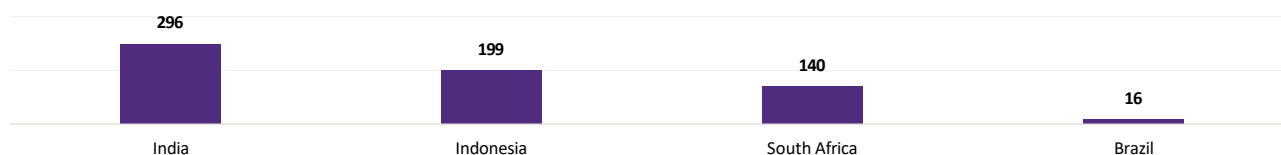


Figure 11: Number of people per PoS

2.1.2 PMJDY Spurs Demand for Digital Payments with ~99% Household Account Penetration in Rural Areas

Under PMJDY, 63.6%²¹ of all Jan Dhan accounts in 2020 were in rural areas, accounting to 25.44 crore accounts. As per the Social Economic Caste Census (SECC) survey²², the total number of rural households are 17.2 crore, which translates to >99% banking account penetration in Indian rural households. This showcases a significant increase in the inclusion of rural populations in formal banking services. Consequently, there had been a growing latent demand for digital payment solutions in rural areas.

2.1.3 State of Digital Payments in Rural India

As of December 2019, a study by IMAI reported that only 16% of rural internet users engaged in digital transactions, in contrast to about 45% of urban users²³, highlighting the disparity in digital transaction participation between urban and rural areas.

Thus, PIDF aimed to catalyse organic penetration, to build upon the existing growth achieved till 2020 and channelize this growth specifically towards tier III and smaller cities by focusing on the deployment of both digital and physical PoS systems.

²⁰ RBI Report

²¹ Ministry of Finance

²² SECC Survey

²³ IMAI

2.1.4 Rural-Urban Digital Divide in India as per World Bank Report

Parameter (% age 15+)²⁴

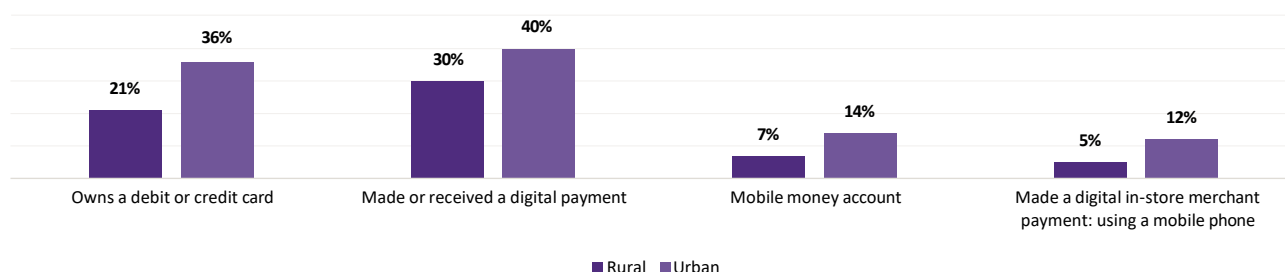


Figure 12: Rural-urban digital divide in India as per world bank report

As of June 2021, financial inclusion indicators reveal notable disparities between urban and rural areas in India, despite similar levels of access to financial institution accounts. Urban areas show higher card ownership, greater use of debit cards and a lower rate of inactive accounts compared to rural regions.

Urban residents are also more likely to engage in digital financial activities, reflecting better infrastructure and financial literacy.

To bridge these gaps, addressing barriers to financial activity in rural areas is essential for promoting equitable financial inclusion across different demographics.

2.1.5 Infrastructure Readiness for Digital Payment in Rural Areas

The JAM Trinity—comprising Jan Dhan, Aadhaar, and Mobile—has established a comprehensive infrastructure for digital payments in rural India, making it an ideal moment to capitalize on these advancements.

Sl. No.	JAM Trinity	Rural
1	Jan Dhan Account ²⁵	~99% Household penetration
2	Aadhaar Card ²⁶	90%
3	Internet Penetration ²⁷	34.60%

Table 1: Penetration of JAM Trinity in 2020

The deployment of Jan Dhan accounts (63.6% of total accounts deployed were in rural areas) provide a significant foundation for financial inclusion, while Aadhaar's near-universal coverage (90%) ensures a robust, secure biometric identity system for authentication. Enhanced internet penetration supports seamless connectivity and access to digital financial services.

This convergence facilitated the integration of financial services with digital platforms, enabling secure, real-time transactions and direct benefit transfers, and highlighted the readiness of rural areas for a transition to a comprehensive digital payment ecosystem. Despite this, the existing infrastructure faced challenges in reaching all underserved areas, necessitating PIDF to bridge gaps and facilitate digital payments, particularly in tier III to tier VI centres and the northeastern regions.

²⁴ Global Findex Report

²⁵ Ministry of Finance

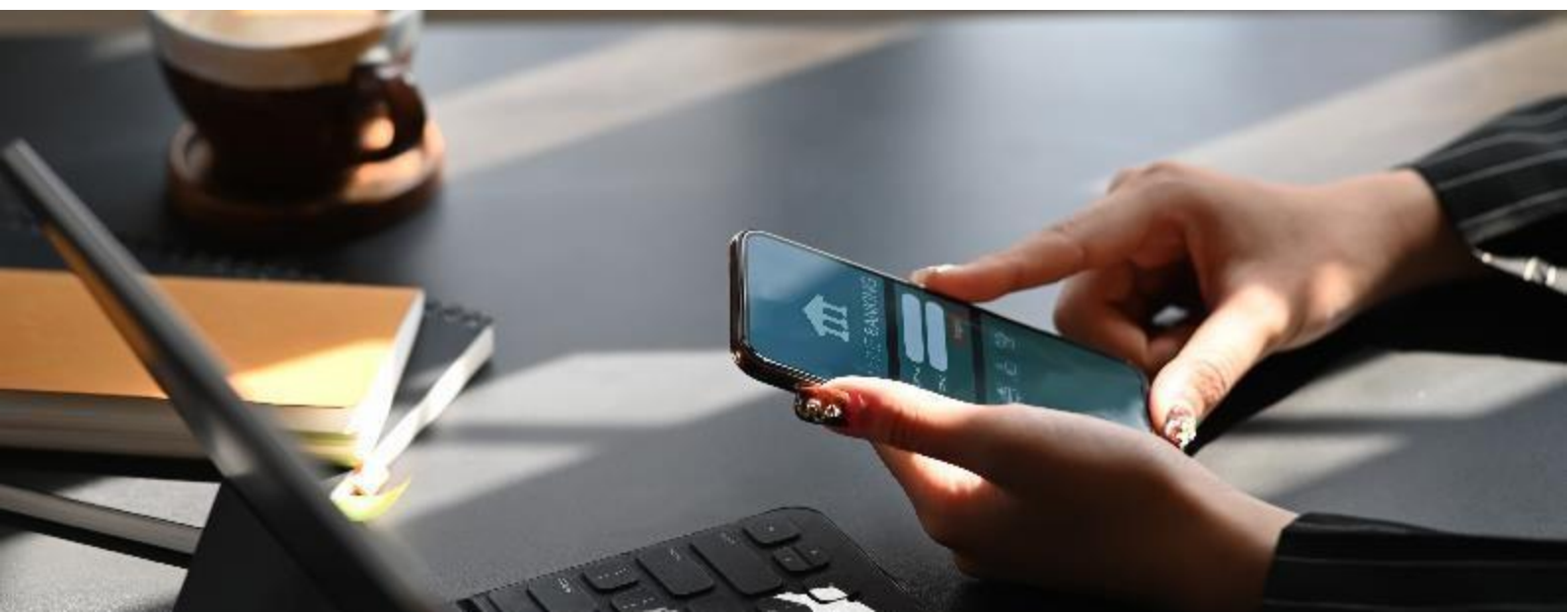
²⁶ UIDAI Annual Report

²⁷ TRAI Report

2.2 Alignment of PIDF to RBI's Payment Vision: 2019-21

The Payments Vision 2019-21 aims to enhance payment systems by offering users affordable, accessible, and convenient payment options that can be used anytime and anywhere. The PIDF aligns with this vision by making digital payment acceptance infrastructure affordable and accessible for merchants in remote areas, reducing their cost burdens and encouraging acquirers to deploy physical and digital infrastructure in underserved regions.

	Merchant	Acquirer
 Cost	Makes digital payment acceptance infrastructure accessible to merchants in remote areas, avoiding major cost overheads for them.	PIDF provides direct cost incentive to acquirers, to deepen their services in tier III to tier VI centres.
 Convenience	Digital payment acceptance helps merchants ease cash management, save time, improve security, and enter formal payment channels.	Acquirers benefit from easier merchant onboarding, support, and offering value-added services in the long run.
 Competition	Positive competition arises as more merchants adopt digital payments.	Encourages new players through viability gap funding with PIDF incentives and promotes innovation in payment solutions.
 Confidence	Promotes contactless payments in the post-Covid era, enhancing business transactions.	Instils confidence in the larger acquirer ecosystem regarding India's and regulators' support for the long-term digital payments era.



2.3 Focus Groups of PIDF

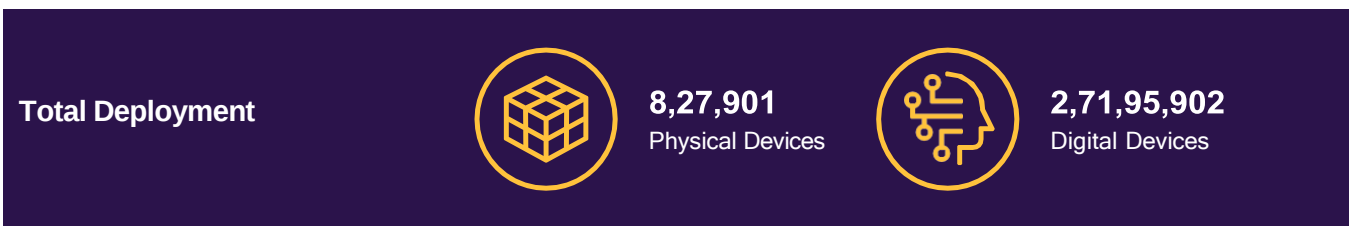
The target groups for PIDF include merchants, small businesses, and essential service providers. These focus groups are prioritized to expand digital payment access, promote financial inclusion, and boost economic activity in underserved regions.

Infrastructure Focus	Street Vendor Inclusion	Regional Emphasis	Target Essential Services	Device Allocation Priority
Establish digital payment infrastructure in tier III to tier VI centres for widespread accessibility.	Include street vendors under PM SVANidhi in tier I and tier II centres for financial inclusion.	Prioritize North-Eastern States and UTs of JSK and Ladakh for enhancing payment infrastructure.	Focus on essential services like transportation, hospitality, and small businesses, especially in specified regions.	Equip merchants without existing payment infrastructures with one physical and one digital device each.

2.4 Achievements of PIDF

2.4.1 Tier-wise Deployment as on November 30, 2023²⁸

Tier III G IV Centres Implemented 3,99,089 physical and 91,99,972 digital payment devices, enhancing transaction capabilities in semi-urban areas.	Tier V G VI Centres Deployed 3,23,236 physical and 1,47,48,608 digital devices, significantly improving accessibility to QR code-based payments in rural regions.	Special Focus Areas (North-eastern States and UTs of JGK and Ladakh) Installed 1,05,268 physical and 19,64,175 digital devices, addressing unique challenges, and promoting economic connectivity in remote regions.	Tier I G II Centres (PM SVANidhi Scheme) Initiated with 308 physical and 12,83,147 digital devices, integrating street vendors into formal financial channels.
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These achievements highlight PIDF's success in expanding digital payment infrastructure nationwide, fostering financial inclusion, and supporting economic growth across diverse geographical and economic sectors.

The above datapoint clearly shows that as of November 2023, deployment of 12.83 lakh devices (including both physical and digital devices) in Tier I and Tier II centres represent only 4.6% of the PIDF deployment, despite these centres containing 28% of Indian population (Census 2011). Coverage in Tier I and II centres extends only to the beneficiaries of PM SVANidhi and recently included PM Vishwakarma Schemes. While these schemes focus on digital inclusion for micro-merchants, they have yet to reach a significant portion of their intended beneficiaries and target only a subset of small merchants.

2.5 Need for an Impact Study

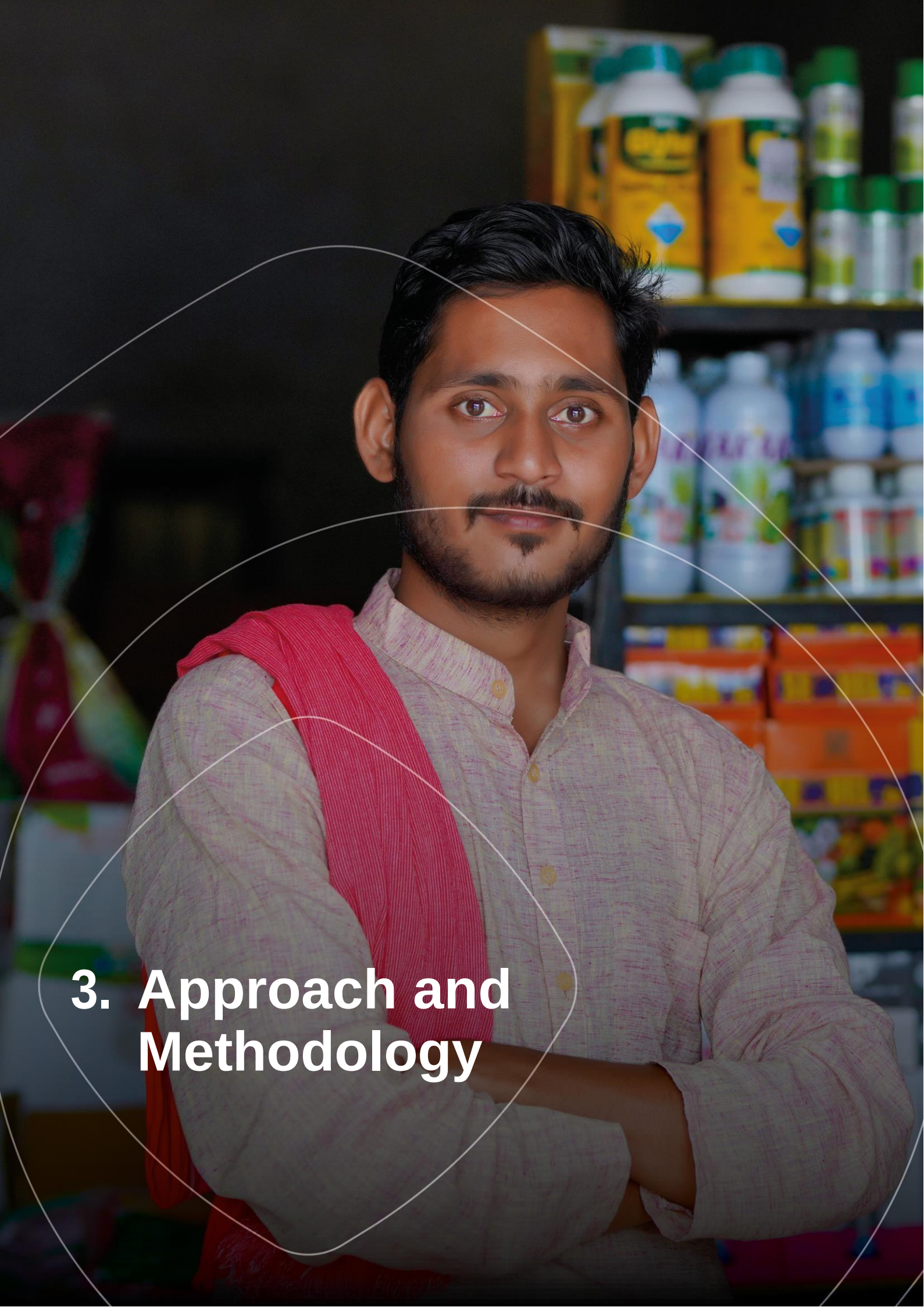
There is a need to conduct an impact study to uncover barriers to digital payment adoption, evaluate the effectiveness of current initiatives, and develop strategies to enhance the use of digital payments among merchants, supporting business growth and ensuring sustainable development. The following are the reasons for an impact study:

To assess the effectiveness of PIDF in encouraging digital payment adoption.

To understand the impact on different facet of merchants' business life cycle, including behaviour change, impact on business and economic wellbeing.

To understand how PIDF nudged acquirers for dedicating their efforts for tier III and below centres.

To assess the long-term effects on merchants' business sustainability and growth, ensuring ongoing success of digital payment systems.

A portrait of a man with dark hair and a beard, wearing a light-colored button-down shirt and a red shawl draped over his shoulder. He is standing in a pharmacy, with shelves of various bottles and boxes visible in the background. The image is framed by a dark overlay with white circular lines.

3. Approach and Methodology

3.1 Our Approach

3.1.1 Our 360° Impact Assessment Approach

PIDF is one of the pioneer schemes targeting merchants in tier III and below centres, with the aim of improving the digital payment acceptance infrastructure. This framework of deepening the digital payment acceptance infrastructure goes beyond access, which refers to just owning a financial account. It allows the end users to transact frequently and on regular basis. To understand the impact of this scheme, **we have followed a 360° approach**, wherein we have reached out to both the end-users (i.e. merchants facilitating digital payment transactions) and the acquirers (direct beneficiaries of the PIDF), as well as payment networks, as briefed below:

Stakeholders Approached	Role	Numbers (Scale)	Approach to assess the impact	Impact Area
Merchants	Front-level entrepreneurs, facilitating digital payment transactions	700	Qualitative (Questionnaire based) YoY Impact of PIDF on Payment infrastructure growth	How merchants are utilizing digital payment infrastructure and whether it has resulted in specific outcomes
Acquirers	Direct Beneficiaries of PIDF	5	Focussed one-to-one discussions	How the change can be made more holistic and sustainable
Payment Networks	Important Stakeholder	2		

Table 2: 360-degree impact assessment approach

3.1.2 Understanding the Impact on Front-Line Entrepreneurs: The Merchants

We adopted a detailed questionnaire-based approach to understand the impact of PIDF by focusing on individual experiences of the merchants. This method allowed us to gather unique insights directly from the merchants about operational, economic, and behavioural impact of digital payment adoption. This approach facilitated a comprehensive assessment of PIDF's effects on cash management, sales revenue growth, and merchants' perceptions, offering a holistic view of how digital payments enhance their business operations and overall satisfaction. Given below are the various facets of merchants' touch points assessed as part of this impact assessment.

Operational Efficacy Due to Digital Payment Adoption

- Cash management efficiency
- Reduction in operational costs
- Improvements in transaction speeds

Economic Benefits to Businesses

- Sales revenue growth
- Expansion of customer base
- Cost savings from digital transactions
- Annual turnover trends among different merchant categories

Positive Financial Impact on Merchants

- Increased access to financial services (e.g., savings, insurance)
- Financial management practices

Behavioural Shifts towards Digital Payments

- Digital payment adoption rate
- Transaction frequencies
- Merchants' perceptions of digital payment security and reliability

Perceived Value and Satisfaction

- Satisfaction levels
- Common problems faced
- Suggestions for improvement
- Perceived benefits of digital payment adoption

3.1.3 Gauging Insights from Contributors and Beneficiaries of PIDF

We engaged with leading acquirers and payment networks to understand their offerings and perspectives on PIDF. This provided insights into their strategies for reaching tier III and below centres, their experience in maintaining relevance in the market through PIDF and expanding the digital payments acceptance market in India. Given below are the various facets of acquirers and payment networks' touch points assessed as part of this impact assessment.

Realigning Business Priorities Towards Tier III and Below Centres

- Entering unchartered territories (tier III and below)
- Conducting literacy workshops
- Running national brand campaigns

Innovative Products Catering to Rural Market Needs and their Inclusion Under PIDF

- Multi-linguistic payment confirmation devices

Value Added Offerings to Rural Merchants

- Access to micro-credit facilities
- Micro-investment options and insurance products

Way Ahead to Make PIDF More Inclusive

- Recommendations to make PIDF more inclusive

3.2 Methodology

As shared above, the study employs a 360° approach to thoroughly assess the impact of digital payment acceptance infrastructure and the effectiveness of PIDF. To this end, the methodology includes secondary research, questionnaire design, survey quality assurance, and on-ground surveys for seeking insights from both merchants and acquirers. By engaging with merchants and key industry stakeholders, we aimed to understand the impact of digital payment adoption in tier III and below centres in India.

3.2.1 Connecting Merchants

The methodology used for reaching out to merchants is detailed below:

Secondary Research

- RBI notification and PIDF-related notes.
- NITI Aayog papers, DFS, and reports on digital financial inclusion.
- DigiDhan Dashboard.
- World Bank/UN financial inclusion studies.
- Other secondary financial inclusion impact analysis reports.

Questionnaire Design (Merchants)

- Preparing a conceptual framework and deciding on relevant indicators.
- Used nominal, ordinal, and interval scales to gauge the impact.
- References from 'The Global Findex Database 2021: Financial Inclusion, Digital Payments, and Resilience in the Age of COVID-19'.
- Inputs from 'Organisation for Economic Cooperation Development/ International Network on Financial Education (OECD/INFE) toolkit for measuring financial literacy and financial inclusion'.
- Designed questionnaire to assess behavioural, economic, and business impact.

Survey Quality Assurance

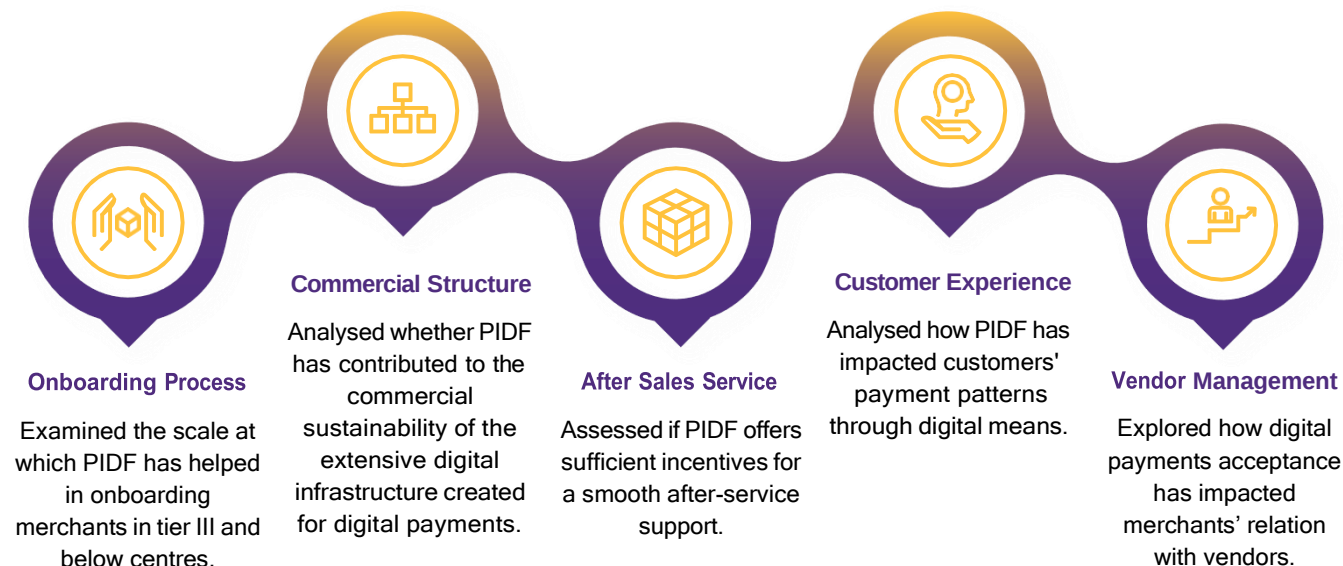
- Pilot testing to identify ambiguities/ redundancy in the survey.
- Shared questionnaire with the stakeholders (acquirers S payment networks) for inputs.
- Trained data collectors on survey protocols.
- Quality checks during data collection.

On-Ground Survey

- Shortlisted states based on per capita digital payment density.
- Conducted total 700 primary survey.
- Collated case studies, through focused discussions.

3.2.1.1 Questionnaire Design: Encapsulating the Merchant's Digital Payment Life Cycle

The questionnaire was designed to cover various stages of the digital payment journey, ensuring a comprehensive understanding of the impact of PIDF on the merchant's lifecycle. It captured the entire digital payment process from both the merchant's and acquirer's perspectives, including:



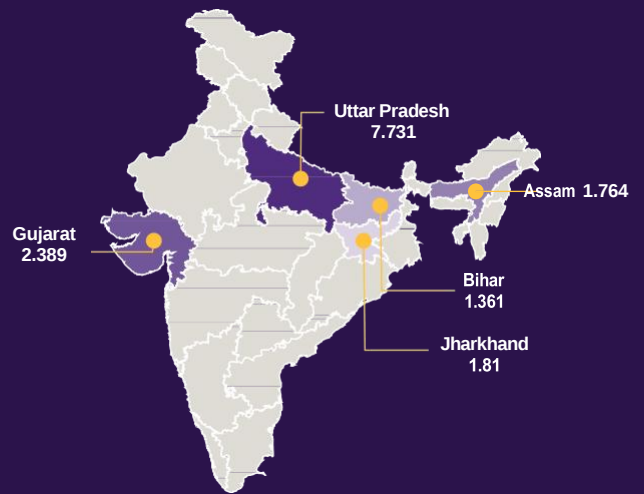
3.2.1.2 On Ground Survey: Sampling Technique for Reaching Out to Merchants

Sampling Numbers Total sample size of 700 merchants was maintained, exceeding the minimum statistical requirement of 664 to achieve a 99% confidence level. This larger sample ensured more robust findings and allowed for subgroup analyses across different states and merchant types.	Questionnaire Design (Merchants) - Selected states based on digital payment transactions per capita across states in India. - Data sourced from DigiDhan Dashboard. This criterion ensured representation of regions with varying levels of digital payment adoption.	Survey Quality Assurance Focus on regions with lower digital payment penetration to capture insights from less explored areas. High Density (>5): - Noida (7.7) - 100 samples - Barabanki (7.7) - 100 samples Medium Density (1.75 to 5): - Ahmedabad (2.3) - 100 samples - Ranchi (1.8) - 100 samples Low Density (<1.75): - Guwahati (1.7) - 200 samples - Patna (1.3) - 100 samples	On Ground Survey - Collaborated with multiple acquirers for comprehensive outreach. - Deep dived and conducted one-to-one focussed discussions to capture 10 case studies. This strategy facilitated access to a wide range of merchants across various sectors and geographic locations in tier III and below centres, thus ensuring inclusivity and diversity in participant demographics.
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Per Capita Digital Payment Density

Upto 31 May 2024

DigiDhan Mission Dashboard, MeitY²⁹



3.2.2 Connecting with Acquirers and Payment Networks

The methodology for reaching out to acquirers and payment networks is detailed below:

Secondary Research

- A thorough review from secondary data on PIDF's performance till date, including its impact on tier-wise digital payment adoption.
- Reports from RBI, DigiDhan Dashboard, NITI Aayog, and other sources were analysed to contextualize findings.
- Examined news articles, press releases, public documents related to PIDF, and other similar digital payment schemes in India. This review offered additional insights into stakeholder perceptions, policy developments, and industry responses.

Questionnaire Design and Engagement with Acquirers & Payment Networks

- Engaged with two leading payment networks and five leading acquirers to gather insights into their experiences with PIDF, focusing on observed impacts on merchants and broader expectations regarding scheme inclusivity and effectiveness.
- Separate questionnaires were prepared for both acquirers and payment networks to explore their perspectives on the specific impacts of deploying physical and digital payment acceptance infrastructure under PIDF. The questionnaires highlighted success stories and challenges faced in enhancing digital payment adoption.
- Insights were gathered on recommendations for enhancing the PIDF's effectiveness, including strategies to increase QR code utilization, target specific merchant categories, and improve geographical reach and inclusivity.

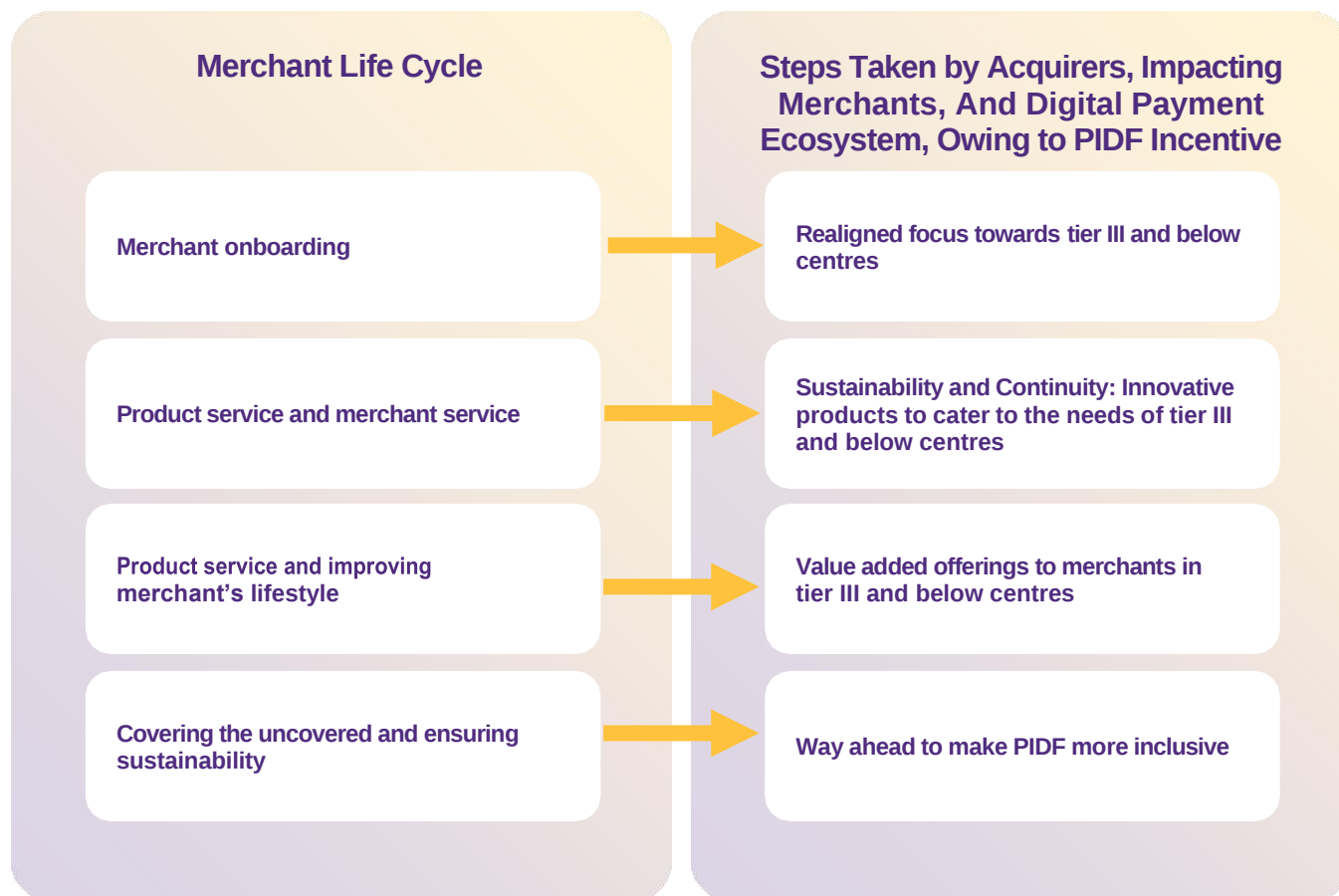
A photograph of a woman in a yellow and white sari with a red bindi, smiling and holding a credit card. A man's face is partially visible on the left. The image has a warm, golden-hour lighting and is overlaid with a thin white circular line.

4. Qualitative Impact of PIDF on Merchant Acquirers

4.1 Qualitative Impact of PIDF on Merchant Acquirers

Acquirers and the network participants are important stakeholders for the success of PIDF, along with the merchants. To gain insights on PIDF nuances as strategic tool to deepen digital payment acceptance infrastructure, along with operational challenges and ensuring efficacy in implementation of PIDF, GTB team interacted with leading payment networks as well as acquirers.

One-on-one focused discussions were conducted with heads of merchant business, public policy leads, and business leads of these companies to understand the PIDF journey and navigate the complete merchant lifecycle. We evaluated the inputs to see how PIDF has made the merchant journey more conducive through the acceptance of digital payments. The exhibit below explains PIDF's impact on the digital payment acceptance infrastructure ecosystem and the merchant's lifecycle.



4.2 Understanding the Impact on Acquirers

PIDF significantly contributes to sustainable business operations for acquirers, as the cost of operating in tier III and below centres is high. The 2011 Census shows that 72% of India's population lives in tier III and below centres³⁰, with a skew towards tiers V and VI, as shown in the table below.

Centres		India's Population Residing in These Centres (in %)
Tier 1	>1 lakh	24
Tier 2	50K-1 lakh	04
Tier 3	20K-50K	05
Tier 4	10K-20K	03
Tier 5	5K-10K	11
Tier 6	<5K	53

Table 3: Tier-wise bifurcation of India's population

There is no publicly available data on the tier-wise distribution of PoS. We requested this information from acquirers and payment networks to better understand digital acceptance penetration in each tier. However, they were unable to share the data due to company policy limitations. This chapter highlights the qualitative impact of PIDF on acquirers and the overall digital payment acceptance infrastructure in the absence of such quantitative data.

4.2.1 Realigned Focus towards Tier III and Below Centres

PIDF Created Inroads for Digital Payment Acceptance Infrastructure

- After the launch of PIDF, tier III and below centres became acquirers' business priority due to the scheme's effectiveness in alleviating the high operational costs associated with these locations.
- The scheme facilitated focused efforts in hilly areas, including the northeastern states and JSK, prompting many acquirers to establish dedicated teams for regional expansion.
- Acquirers provided dedicated training for consumers and merchants via digital platforms to reach small towns. They also ran social media campaigns in local languages to educate on the safety and convenience of digital payments, particularly targeting tier V and VI regions.
- PIDF significantly reduced merchants' costs of associating with acquirers, thereby improving their access to both physical and digital payment acceptance infrastructure.

4.2.2 Sustainability and Continuity: Innovative Products to Cater to the Needs of Tier III and Below Centres

PIDF Pushed for Indigenous Innovations

- The introduction of PIDF has necessitated innovations like sound-based notification devices and local language support for easier adaptability to digital payments in tier III and below centres.
- Grievance redressal availability in vernacular languages.
- Near-field communication (NFC) enabled QR codes or sound-based notification devices would go a long way in promoting card-based transactions in tier V and VI centres, where costs associated with buying and maintaining physical PoS may not be sustainable for small merchants.

³⁰ Census data 2011

Low Percentage of “Active Status of Payment Acceptance Devices”

Stakeholders highlighted the concern over the low percentage of active payment acceptance devices, pointing out the slower pace of consumer readiness and the challenges faced by acquirers in tier V and below centres. This low 'active status' is attributed to multiple factors, including:

- The digital payment acceptance infrastructure needs regular replacement owing to natural wear and tear, physical damage, being misplaced, or technical errors (QR codes usually have a lifespan of 6-9 months).
- Digital payment acceptance infrastructure requires regular technical support, including periodic physical inspections. Servicing and replacing these devices in tier V and below centres, as well as in hilly areas like JSK and northeastern states, result in substantial operational expenses for acquirers.
- The cost of providing comprehensive after-sale services, such as training and timely replacement of physical PoS or QR code, is significantly high in tier V and tier VI cities due to accessibility constraint.
- Micro merchants at times lose interest in digital payment acceptance due to service concerns.
- Consumers may sometimes experience interruptions, resulting in a less seamless journey.
- Another unrelated reason is frequent switching in the case of digital payment acceptance infrastructure (QR codes), due to no cost for issuance of each additional QR code for merchants.

4.2.3 Value Added Offerings to Merchants in Tier III and Below Centres

PIDF Helped with Establishing Huge Payment Network across Remote Belts of India

- PIDF enabled the acquirers in establishing large merchant networks across India (including the remotest corners), giving them access to extensive data insights, enabling the customization of value-added services, tailored to both merchant requirements and consumer preferences.
- Improved Livelihood: The scheme bolstered rural infrastructure and workforce capacity, generating additional employment opportunities and revenue streams for local communities. Additionally, this enhanced infrastructure is poised to catalyze the expansion of fintech services into underserved rural and remote regions, thereby fostering financial inclusion and economic growth at the grassroots level.
- PIDF enabled acquirers to establish large merchant networks across India, including the remotest corners, providing extensive data insights for customizing value-added services tailored to merchant requirements and consumer preferences.
- Deeper Digital Financial Inclusion: PIDF significantly improved merchants' lifestyles by providing access to various financial services such as savings, investments, and loans. Merchants began utilizing digital payments for both personal and business transactions, resulting in substantial savings in both cost and time.
- PIDF and the resulting increase in digital payment transactions have shifted the focus from theoretical financial literacy to practical understanding of digital literacy concepts. This shift extends not only to merchants, but also to their families and households.

A photograph of two men in traditional Indian clothing. The man on the left is wearing a light blue kurta and a white shawl with a purple grid pattern. He is smiling and looking at a smartphone held by the man on the right. The man on the right is wearing a white kurta and a red shawl. They are both looking at the phone. The background is blurred, showing some greenery and a yellow pole. There are white curved lines overlaid on the image.

5. Understanding the impact on front-line entrepreneurs: The merchants

5.1 Primary Survey

5.1.1 Respondent Demographics

Merchants are the centre point in understanding the impact of the PIDF, as they are responsible for integrating digital payment acceptance infrastructure into their operations. Through the primary survey, we aim to explore how digital payments have transformed the payment ecosystem following the introduction of the PIDF. This chapter will showcase the impact of the PIDF through significant changes and improvements in digital payment adoption among merchants in Tier 3 to Tier 6 centres, highlighting the specific benefits and challenges these merchants face.

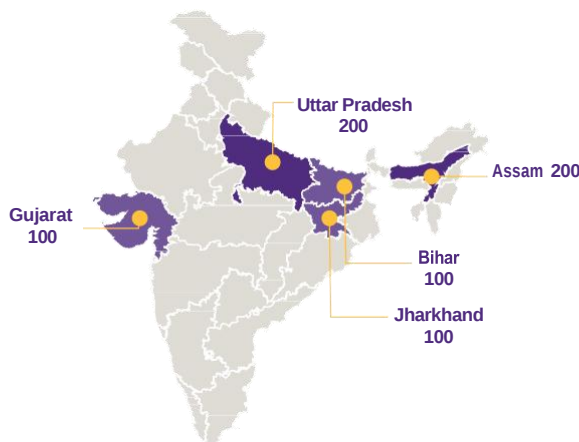


Figure 13 Geographical distribution of merchants by state district

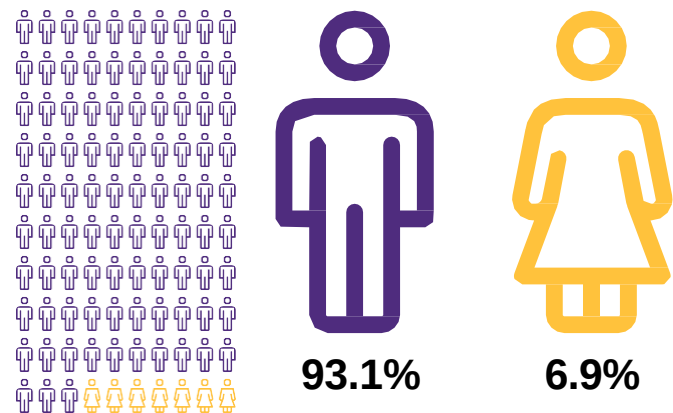


Figure 14 Gender distribution of respondents

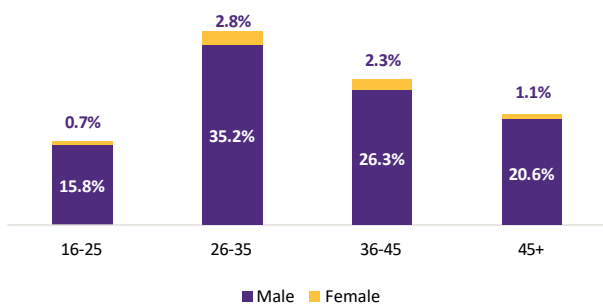


Figure 15 Age distribution of merchants based on gender

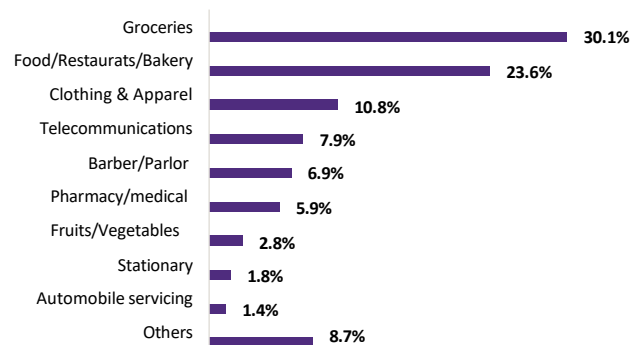


Figure 16 Merchant classification by type of business

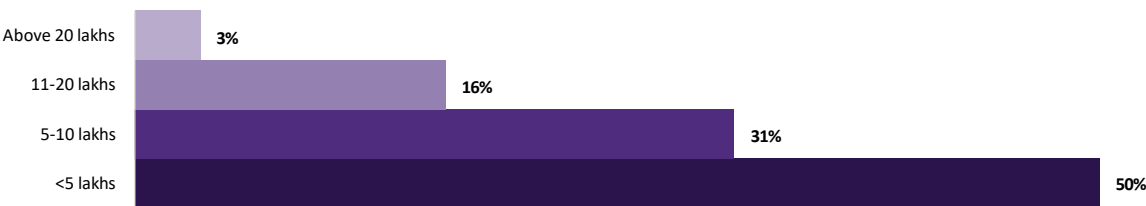


Figure 17 Annual turnover distribution of merchants

- The survey included 700 merchants across five states, selected based on per capita digital payment penetration as of April 2024, according to the DigiDhan Mission Dashboard published by the Ministry of Electronics and Information Technology. We adopted a random sampling approach. It was observed that 93% of the merchants surveyed are men and 7% are women, indicating a significant male representation in the small business sector in Tier III and below centres. Two-thirds of the merchants fall within the 25-45 age group, highlighting a predominantly young to middle-aged demographic. The majority of merchants operate in the food, grocery, and apparel sectors.
- The distribution of annual turnover among merchants in Tier 3 to Tier 6 centres reveals that a significant portion of businesses is at nano-scale enterprises³¹. With 97% of merchants reporting less than 20 lakh turnovers, the data represents the predominance of nano enterprises in these regions.

- **Tier III and below centres are still fulfilling 'Basic' needs comprising food, grocery and apparel, as 65% of merchants cater to these merchant categories. This presents an opportunity for the 'value-added services' market in India, underlining the significant potential of digital payment acceptance in future.**
- **Tier III and below centres are dominated (97%) by nano-enterprises (with annual turnover < INR 20 lakh)**
- **Women's participation as nano-entrepreneurs is relatively small (~7%).**

31 For the ease, we are mentioning the merchant business with annual turnover as < ₹20 lakh as Nano scale enterprises

5.2 Mapping Digital Payment Acceptance Infrastructure Used by Merchants

5.2.1 Digital Payment Instruments Accepted by the Merchants

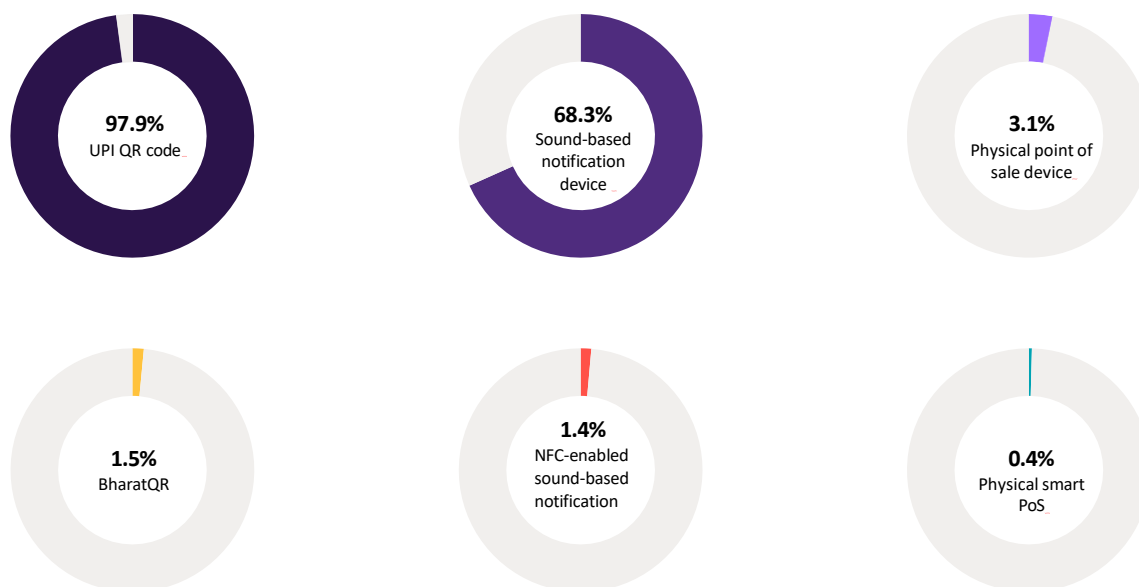


Figure 18 Percentage of merchants accepting different digital payment instruments

Sound-based notification devices have successfully made inroads into Tier III and below centres, despite their introduction in 2019.³² These devices solved the ‘payment confirmation’ concern in regional languages at a low cost. This testifies to the success formula to be adopted by any new tech innovation in the Indian market.

Quantitative Impact of PIDF:

- UPI is the largest mode of digital payment acceptance instrument accepted by 97.9% of merchants, followed by sound-based notification devices accepted by 68.3% of the merchants.
- Around 3% of the merchants accept physical point-of-sale devices, followed by 1.5% accepting BharatQR and 1.4% accepting NFC-enabled sound-based notification devices, indicating very low penetration of these digital payment acceptance instruments among merchants.

Merchants show a clear preference for low-cost or no-cost digital payment methods.

³² Strengthening our Offline Payments Pioneership with 5 Billion Soundbox Transactions Processed in FY22 | Paytm Blog

5.2.2 Frequently Used Payment Acceptance Instruments

UPI is the most frequently used payment method in terms of volume. Merchants shared that most of these are low-valued transactions. Digital payment acceptance, furthered by PIDF, has initiated a behaviour change, with consumers preferring low-value payments through digital means.

Quantitative Impact of PIDF:

- 88% of merchants have ranked UPI as the top payment acceptance instrument for most transactions, followed by cash, ranked by 67% of merchants.
- Sound-based notification devices are ranked third for transaction acceptance by 52% of merchants.
- Physical PoS and BharatQR are ranked lower due to fewer transactions through these instruments, as a significantly lower number of merchants accept them.

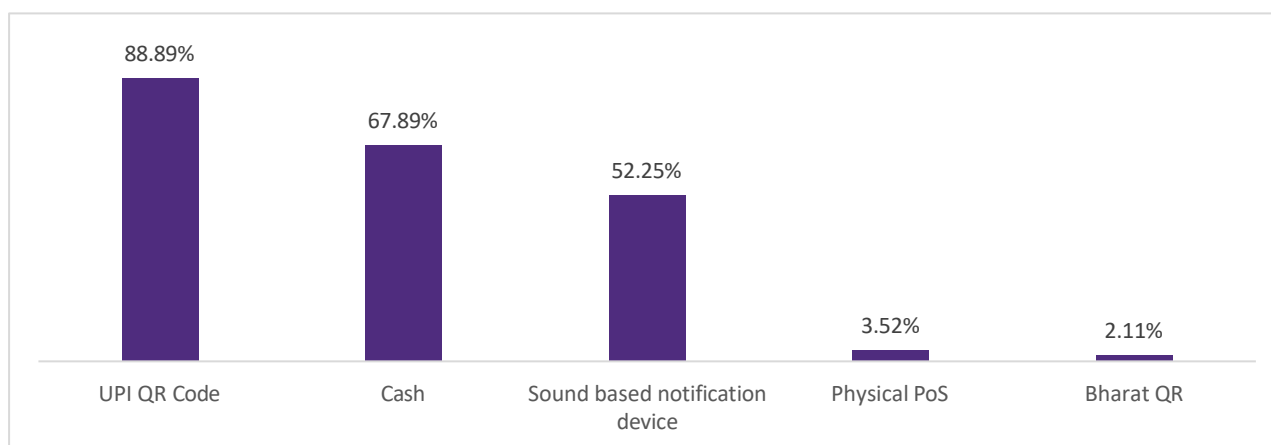


Figure 19 Frequently used payment acceptance instruments

UPI has surpassed cash as the mode of payment acceptance, in volume-terms.

5.2.3 Proportion of Turnover Collected via Digital Payment by Merchants



Figure 20 Proportion of turnover collected via digital payment

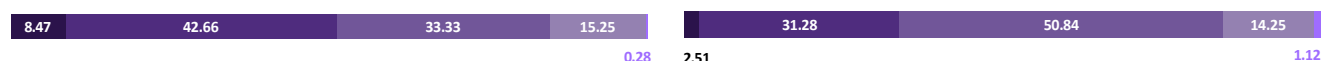


Figure 21 Percentage of turnover collected through digital payments (For merchants having turnover < ₹ 5 Lakh)



Figure 22 Percentage of turnover collected through digital payments (For merchants having turnover > ₹ 5 Lakh)

The data suggests that ~40% of merchants accept ~50% of their total payments (in value-terms) through digital mode. The PIDF, as a torch bearer for creating a digital payment acceptance infrastructure, has met initial success, but it has a long way to go. We estimate that 35% of the transactions (by value) are digital among digitised merchants in Tier III and below centres.

Quantitative Impact of PIDF:

- 42% of merchants receive 30-60% of their turnover through digital payment instruments, while a similar percentage (37%) receive 10-30%, indicating a shift towards accepting digital transactions.
- Approximately 15% of merchants receive 60-80% of their turnover through digital payment instruments, implying that a smaller percentage of their turnover is accepted through cash.
- 50.8% of merchants with a turnover of over INR 5 lakh receive 30-60% of their turnover through digital payment instruments, compared to only 33.3% of merchants with a turnover of under INR 5 lakh. It suggests that as smaller businesses grow, they will likely accept a larger share of their turnover through digital payment instruments.

Continued support of the PIDF, aided by additional incentives, would be essential to extend the digital payment adoption to Tier V and VI centres, bolstering India's comprehensive digital payment transformation.

5.2.4 Period of digital payment acceptance device usage

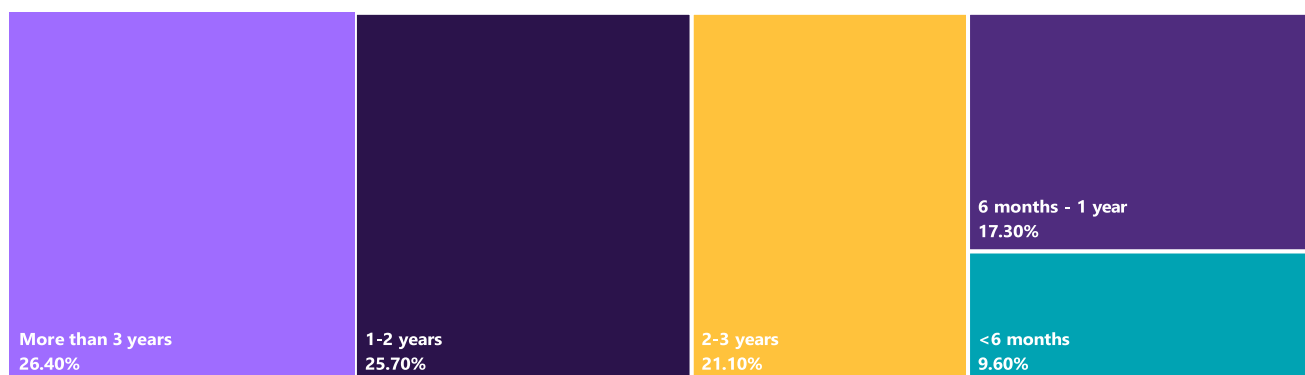


Figure 23 Period of digital payment acceptance device usage

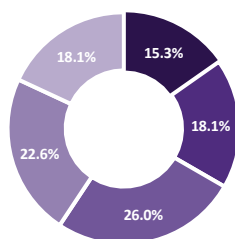


Figure 24 Duration of digital payments acceptance instruments (INR <5 Lakh turnover)

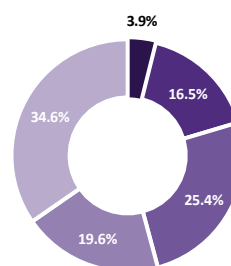


Figure 25 Duration of digital payment acceptance instruments (INR >5 Lakh turnover)

■ <6 months ■ 6 months-1 year ■ 1-2 years ■ 2-3 years ■ More than 3 years (Before 2021)

The acquirer's focus has off late shifted from larger merchants to smaller merchants, with >15% onboarding of merchants having turnover < INR 5 lakh than a meagre 3% for merchants having turnover > INR 5 lakh.

It can be inferred that the acquirer ecosystem has extensively covered the larger merchants, with the focus now on smaller merchants.

Quantitative Impact of PIDF:

- Around 26% of merchants have been using digital payment acceptance instruments for over three years and a similar percentage of merchants (27%) are recent adopters who started using digital payments within the last year.
- The remaining 47% of merchants have been accepting digital payments for the past 1-3 years, showing steady adoption of digital payment acceptance instruments over the years.
- Merchants with a turnover of less than INR 5 lakh have a higher percentage (15%) of recent QR code adopters (less than 6 months), compared to only 3% for merchants with a turnover of more than INR 5 lakh, indicating the success of the PIDF in targeting smaller merchants for digital payment adoption.

The next few PIDF years holds great importance, wherein each uncovered nano-scale merchant would potentially be using the digital payment.

5.3 Business Impact and Operational Efficacy

5.3.1 Impact of Digital Payment Adoption on Merchant Businesses

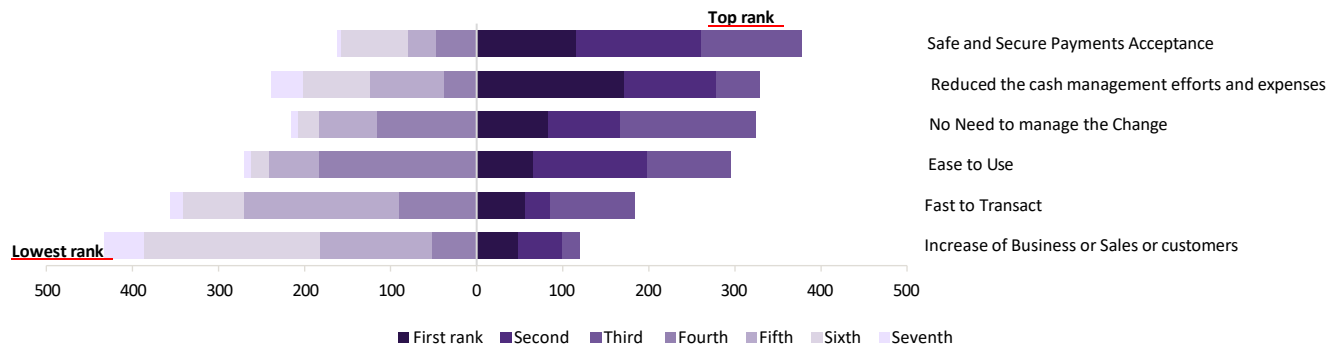


Figure 26 Impact of digital payment adoption on merchant businesses

The PIDF helped merchants win the trust of digital payment acceptance, which is the most secure way of fund management.

Quantitative Impact of PIDF:

- Merchants have ranked safe and secure payment acceptance as the top impact on their businesses, indicating that the digital payments ecosystem has successfully gained their trust.
- The reduction in efforts required to handle cash and the absence of the need to provide change have been ranked second and third, respectively, primarily due to the increased convenience, leading to a preference for digital payments over cash.
- Digital payments, primarily driven by QR codes and sound-based notification devices, have facilitated easy accessibility for accepting payments.

Digital payment acceptance has offered dual advantage to merchants: on one side, it has reduced the expenses and efforts associated with fund management, and parallelly, it has increased customer footfall and business volume for merchants.

5.3.2 Impact on Sales Revenue and Time Savings Among Merchants Since Initiating Digital Payments

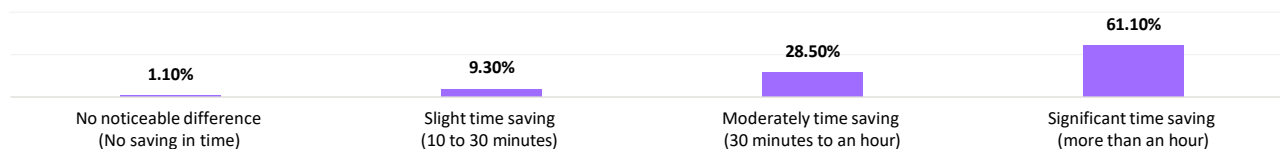


Figure 27 Impact on time savings (on a daily basis) among merchants since initiating digital payments

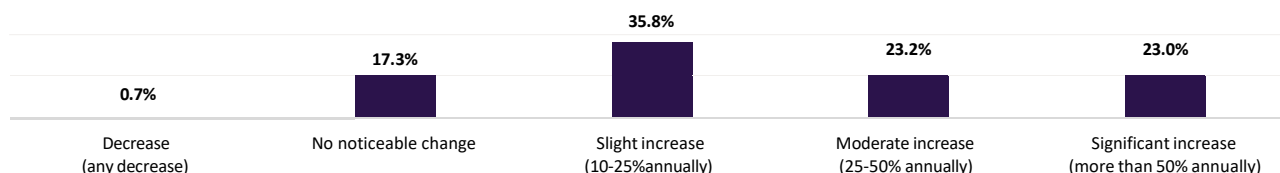


Figure 28 Impact on sales revenue among merchants since initiating digital payments

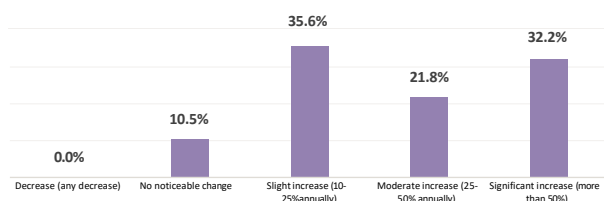


Figure 29 Impact on sales revenue among merchants since initiating digital payments (INR <5 lakh turnover)

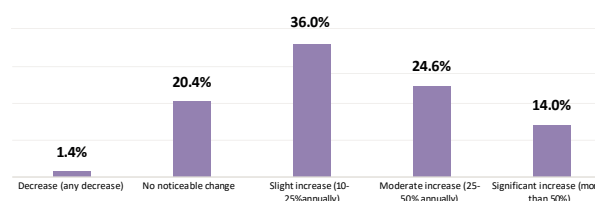


Figure 30 Impact on sales revenue among merchants since initiating digital payments (INR >5 lakh turnover)

Digital payments have increased customer footfall, induced spontaneous purchases, increased business hours on an absolute basis, and eliminated merchants' efforts on mundane activities. On average, each merchant saves 46 minutes daily due to digital payment acceptance, conservatively. As per the RBI³³, the PIDF has benefited 2.80 crore merchants in India (November 2023). Considering each merchant works six days a week, accepting digital payment is potentially generating an additional 670 crore of productive man-hours in FY 2024-25.

Considering 10 crore merchants in India and an average of 46 minutes saved by digital payment acceptance for each of these merchants, cent percent digital payment acceptance penetration has the potential to increase the man-hour availability of the total Indian workforce by 1.6%.

Quantitative Impact of PIDF:

- More than 75% of merchants reported increased sales revenue after adopting digital payments, and almost all respondents mentioned experiencing time savings when using digital payments.
- 36% of merchants reported a slight increase in revenue (between 10-25%), while 23% reported a significant increase in revenue (more than 50%). The increase in sales revenue can be attributed to accommodating spontaneous purchases and reducing the likelihood of abandoned purchases due to a lack of cash.
- The percentage of merchants with a turnover of less than INR 5 lakh, who reported a significant increase in revenue (32%), is almost three times higher than that of merchants with a turnover of more than 5 lakh (13%). This implies that digital payments had a greater impact on relatively smaller merchants in terms of sales revenue.
- About 61% of merchants reported significant time savings (more than an hour) due to adopting digital payments, followed by 28% reporting moderate time savings (30 minutes to an hour). Time savings can be attributed to factors such as eliminating bank visits for cash deposits, reduced cash handling, and easier record-keeping.

33 Reserve Bank of India - Press Releases (rbi.org.in)

5.3.3 Impact on Fund Management and Operational Efficiency

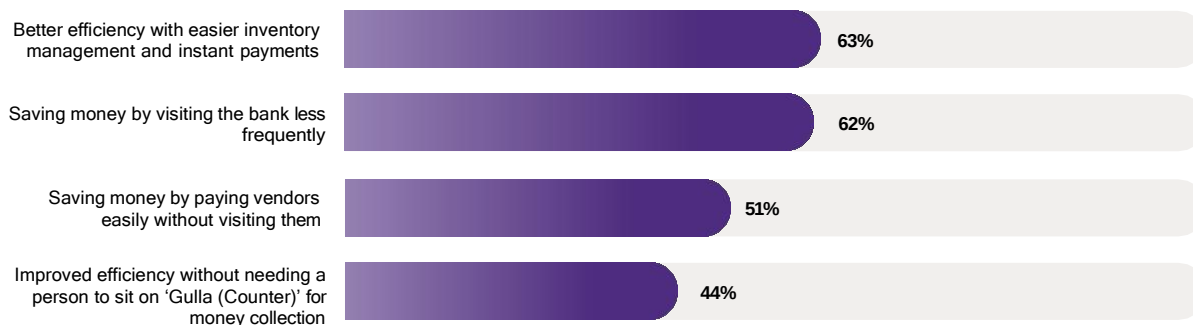


Figure 31 Impact on fund management and operational efficiency

Quantitative Impact of PIDF:

- Around 63% of merchants have ranked easier inventory management due to digital payments as the top factor in increasing efficiency in fund management. It has led to operational efficiencies for merchants by enhancing inventory management through real-time transaction records, making stock control more accurate and efficient.
- About 62% of merchants highlighted saving money by visiting the bank less frequently, and 51% mentioned saving money by paying vendors digitally. The direct bank-to-bank transfers in digital transactions have minimised the need for merchants to physically visit the bank and vendors, saving both time and money. This simplification allows merchants to focus more on core business activities.
- Around 44% of merchants reported that eliminating the need for a dedicated person to collect money reduces the risks associated with handling cash, such as theft or loss.

'Savings' is the mantra to 'Productivity and prosperity' for nano-scale merchants. PIDF-backed digital payment acceptance devices allowed these nano-scale entrepreneurs to get a hold of this 'prosperity mantra' through enhanced savings, be it through less physical visits to vendors/banks or easy inventory management.

5.3.4 Extent of Digital Payment Adoption in Merchants' Value Chain

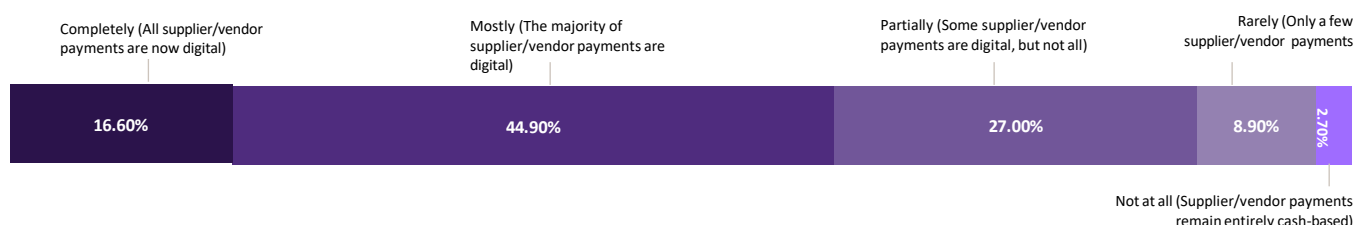


Figure 32 Extent of digital payment adoption in merchants' value chain

Quantitative Impact of PIDF:

- Around 61% of the merchants are paying their vendors through digital payment instruments, with 16% paying all their suppliers digitally and 45% paying most of their vendors digitally.
- About 26% of the merchants mentioned that they only make partial digital payments to vendors, implying that vendors still require cash payments. This presents a challenge for merchants, as the need to pay vendors in cash drives them to prefer cash transactions from customers, thereby reducing the acceptance of digital payments.
- Around 9% of merchants rarely make vendor payments through digital payment instruments. Merchants have highlighted that their vendor's reliance on cash payments as one of the top reasons for discontinuing digital payments.

The PIDF has not only digitised the payment acceptance at the merchant level, but such similar initiatives are making the complete value chain digital.

5.3.5 Average Number of Transactions Per Day

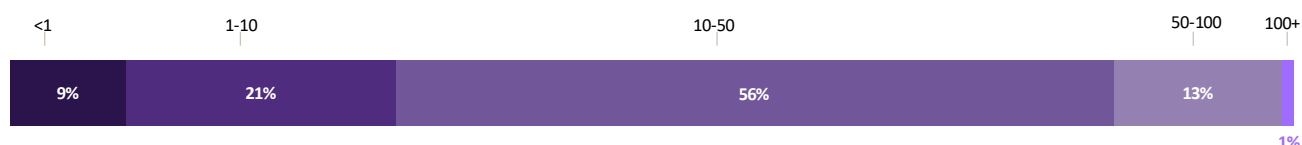


Figure 33 Average number of transactions per day



Figure 34 Average number of transactions per day (INR <5 Lakhs turnover)

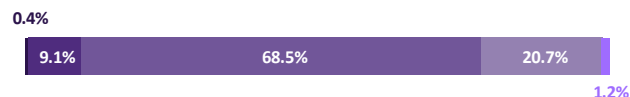


Figure 35 Average number of transactions per day (INR >5 Lakhs turnover)

There exist a good percentage of merchants (17.5%), having an annual turnover of < ₹ 5 lakh, who experience less than one transaction per day. However, the same is negligible (0.4%) for merchants having an annual turnover > ₹5 lakh. This can be easily understood that the number of smaller merchants operate largely from Tier V and VI centres.

Quantitative Impact of PIDF:

- 56% of the merchants receive 10-50 transactions per day, followed by 21% of the merchants receiving 1-10 transactions per day. This reflects that merchants are receiving significant volume of digital transactions in tier-III and below centres.
- A higher percentage, 68.5% of merchants with a turnover of more than 5 lakhs, receive 10-50 transactions per day, compared to 43.2% of merchants with a turnover of less than 5 lakhs.
- 20.7% of merchants with a turnover of more than 5 lakhs receive 50-100 transactions per day, whereas only 4.5% of merchants with a turnover of less than 5 lakhs fall into this category. It highlights that merchants with higher turnovers have higher transaction volumes and frequency. With increasing digital payments, more merchants are likely to move in this category.

Around 1/6th of merchants with annual turnover less than ₹5 lakh experience less than one digital payment acceptance transaction on daily basis. This explains the reason for ‘Inactive deployment basis minimum usage criteria under PIDF’ and need for relaxing the ‘Minimum usage and active criteria’ for Tier V and VI centres

5.4 Economic Impact of PIDF on Merchants

5.4.1 Financial Services Instruments Used Before Accepting Digital Payments

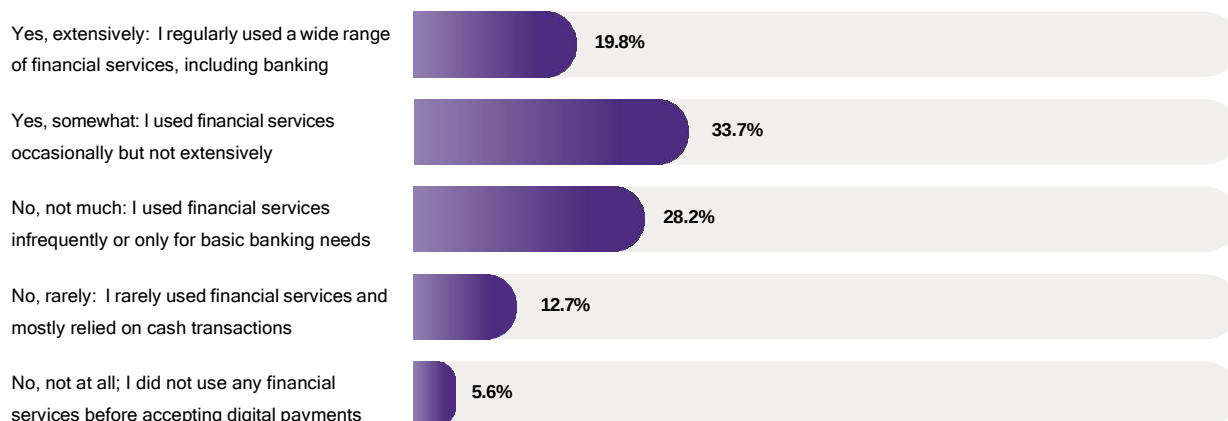


Figure 36 Financial services instruments used before accepting digital payments

Quantitative Impact of PIDF:

- Only 20% of merchants were using financial services instruments before the adoption of digital payment acceptance instruments.
- Majority of the merchants did not use financial services instruments, likely due to the predominantly cash-based nature of their businesses and the perceived complexity and inaccessibility of traditional offline banking services.
- However, since adopting digital payments, there has been a significant increase in the use of financial services instruments among merchants who previously did not use them.

Prior to embracing digital payments, a little over 80% of merchants had minimal or no engagement with banking services.

5.4.2 Financial Services Used Post Adopting Digital Payments Acceptance Infrastructure

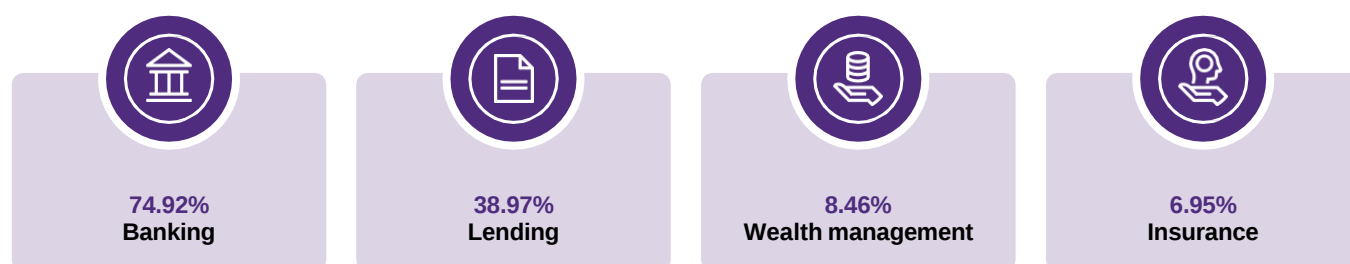


Figure 37 Financial services used post adopting digital payment acceptance infrastructure

Digital payment acceptance among merchants has paved the way for broader fintech services integration. Before embracing digital payments, over 80% of merchants had minimal or no engagement with banking services. However, approximately two-thirds of merchants are actively utilising banking services, with over one-third accessing credit facilities. Moreover, a notable percentage, ranging from 6% to 10%, have begun exploring insurance and wealth management options. This underscores the profound impact of the PIDF in enhancing India's digital payment ecosystem.

Quantitative Impact of PIDF:

- About 75% of merchants have started using banking services after adopting digital payment acceptance instruments. The ease and accessibility of banking and payment apps likely contributed to this increase. Since digital payments occur bank-to-bank, merchants need to engage with banking services.
- For lending, the rise in fintech companies utilising alternative data sources to assess creditworthiness has likely driven increased engagement, with 39% of merchants using lending services from financial institutions.

- The penetration of insurance and wealth management services remains lower, reflecting the overall picture in India.
- Adopting digital payments will likely encourage broader financial inclusion, as merchants who rarely or infrequently used financial services are now engaging more with the financial ecosystem.

One visionary step of penetrating digital payment acceptance infrastructure through targeted schematic intervention has played a multi-faced role: it improved digital financial literacy, it catapulted digital financial inclusion, it made bank-based transaction a norm than an exception, it is now acting as a great enabler for value added services, including lending, insurance and wealth management. Also, PIDs-enabled digitisation of merchants is now possible in Tier III and below centres.

5.5 Digital Payments Improvement and Concerns

5.5.1 Problems Faced by Merchants in Accepting Digital Payments

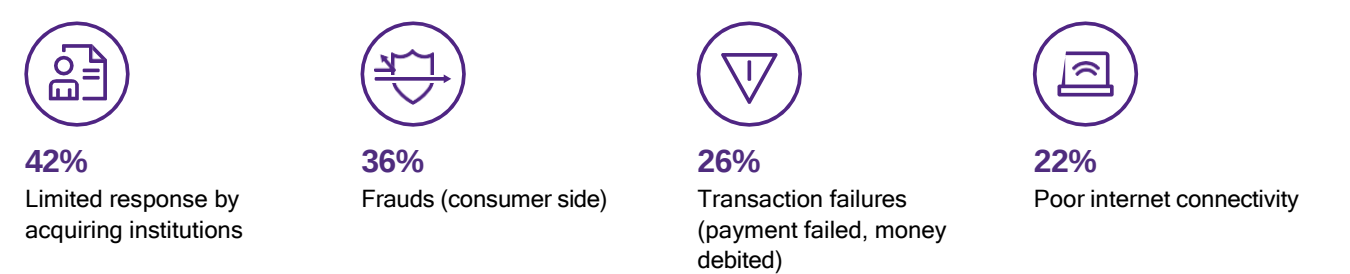


Figure 38 Problems faced by the merchants in accepting digital payments

This data highlights 'Limited response' by acquiring institutions as one of the top concerns of merchants. Unsurprisingly, the same had been echoed by acquirers too, that the cost of servicing is very high in sparsely populated areas, particularly in Tier 5 and 6 centres. This high cost limits their ability to respond in real-time or at the quickest possible timeframe, which results in them losing a few of the precious merchants.

Quantitative Impact of PIDF:

- Around 42% of merchants have ranked the limited response by acquiring institutions as the top problem they face when accepting digital payments, highlighting the need for better support and issue resolution.
- Consumer side frauds have been highlighted by 36% of the merchants. These deceptive practices from consumers may deter merchants from accepting digital payment acceptance instruments.
- Transaction failures, including customers not receiving OTPs, declined transactions, and merchants not receiving money after customers have paid, have been highlighted by 26% of merchants.

5.5.2 Time Taken to Resolve Issues Faced by Merchants in Accepting Digital Payments



Figure 39 Time taken to resolve the issues faced by merchants in accepting digital payments

Quantitative Impact of PIDF:

- Around 58.7% of merchants reported that their issues were resolved within 24 hours of raising a complaint, and 11.8% mentioned that their problems were resolved within a week. This indicates that initial support is generally efficient, with prompt handling of problems prioritised within the ecosystem.
- However, 8.5% of merchants reported that their issues took one month to six months to resolve, which is a prolonged period for merchants to hinder their operations.
- About 19.4% of merchants report unresolved issues to date, highlighting a gap in the problem-resolution process and the need for improved customer support mechanisms.

5.5.3 Reasons for Merchants Being Inactive and Processing Low Transactions With Digital Payment Acceptance Instruments

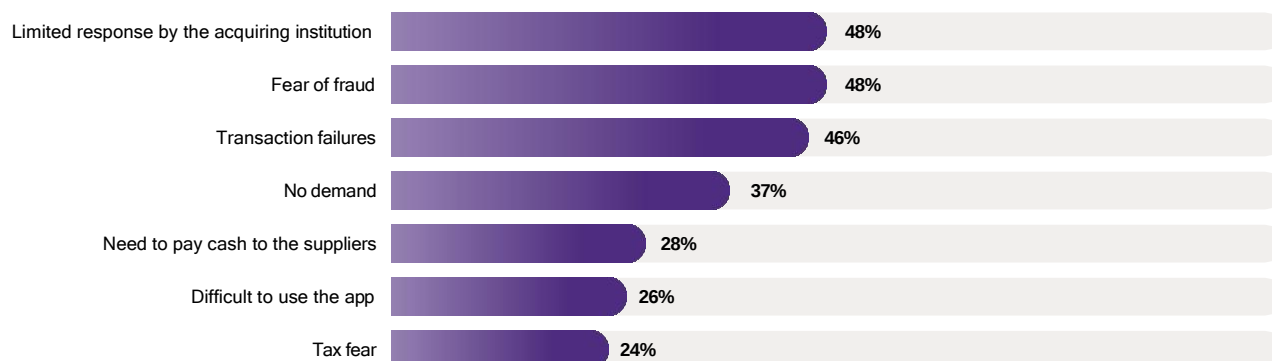


Figure 40 Reasons for merchants being inactive and processing low transactions with digital payment acceptance instruments

Sections 5.5.1, 5.5.2, and 5.5.3 highlight one important learning shared in Section 5.5.1: acquirers need additional support to better their service to merchants, especially in Tier 5 and below centres. This additional incentive support by the PIDF would aid in quick and superior service to these merchants, as the UPI QR offering is otherwise a non-revenue business.

It also highlights another important aspect: Merchants' lack of awareness or fear of fraud as the major reason for discontinuing digital payment acceptance. This calls for a dedicated campaign for deepening trust, alleviating fraud-related misconceptions, training on do's and don'ts, and targeted pop-up notifications on merchant apps.

Transaction failure is also one of the reigning concerns for merchants. The overall transaction failures for UPI-based transactions as per NPCI is less than 0.5%. One possible reason for large transaction failures may be poor internet connectivity, which merchants highlighted in Section 5.5.1.

Quantitative Impact of PIDF:

- Despite increased adoption, limited response from the acquiring institution and fear of fraud from consumers are the top-ranked reasons merchants stop using digital payment acceptance instruments, as highlighted by 48% of the merchants each. This is followed by transaction failures, ranked second by 46% of the merchants. These transaction failures include issues such as merchants not receiving money after being paid by the customer, declined transactions, recipient servers being busy, etc.
- Around 28% of the merchants still need to pay vendors in cash, which encourages them to prefer cash transactions from customers. This reliance on cash may be due to the necessity of immediate liquidity for their business operations. However, it hampers the adoption of digital payments.

Inadequate internet connectivity is a critical infrastructure issue causing transaction failures, which in turn limits service availability by acquirers. Despite being ranked last, this issue has significant indirect impacts that require urgent attention.

5.5.4 Merchants' Perception of How to Increase Digital Payments

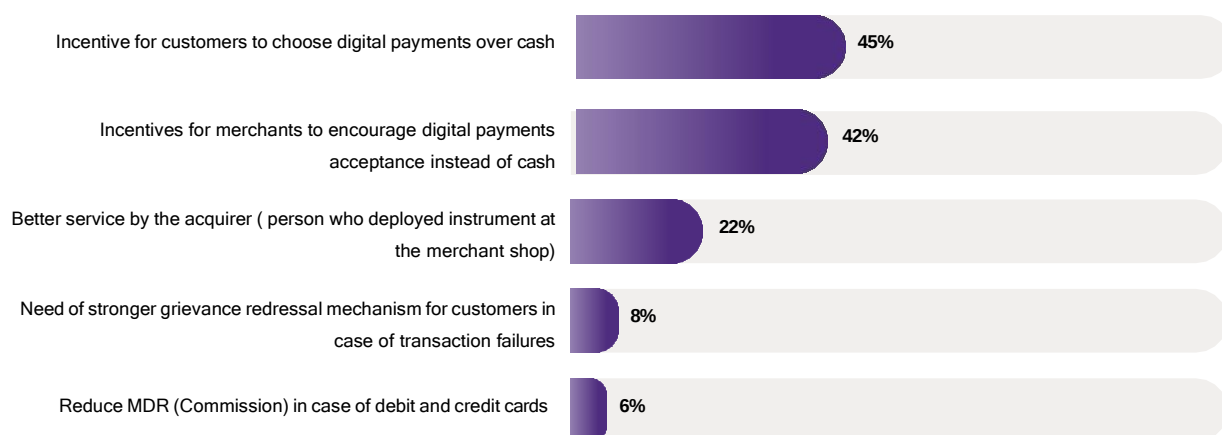


Figure 41 Merchants' perception on how to increase digital payments

Merchants mentioned that any form of incentive to either customers or merchants would push digital payments, followed by better service by the acquirer.

Quantitative Impact of PIDF:

- Around 45% of the merchants believe that providing incentives to customers to choose digital payments instead of cash is important to increase adoption, while 42% mentioned giving incentives to merchants. They suggest offering rewards and benefits to both customers and merchants as an effective strategy to boost digital payment adoption.
- Better service by the acquirer can help increase digital payments, as highlighted by 22% of merchants. This aligns with their perception that limited response from acquiring institutions is one of the top concerns in adopting digital payment acceptance instruments.

5.6 Exploring the Usage and Need of Physical PoS

As per the RBI data (November 2023) on deployment under the PIDF, 97% of deployment was for digital payment acceptance devices (majorly UPI QR code), with ~3% physical PoS. There is a need to maintain a balance between UPI and card-based transactions. This section explores merchants' stand of preferring digital devices over physical devices.

Factors influencing merchants' decision to not use physical PoS:

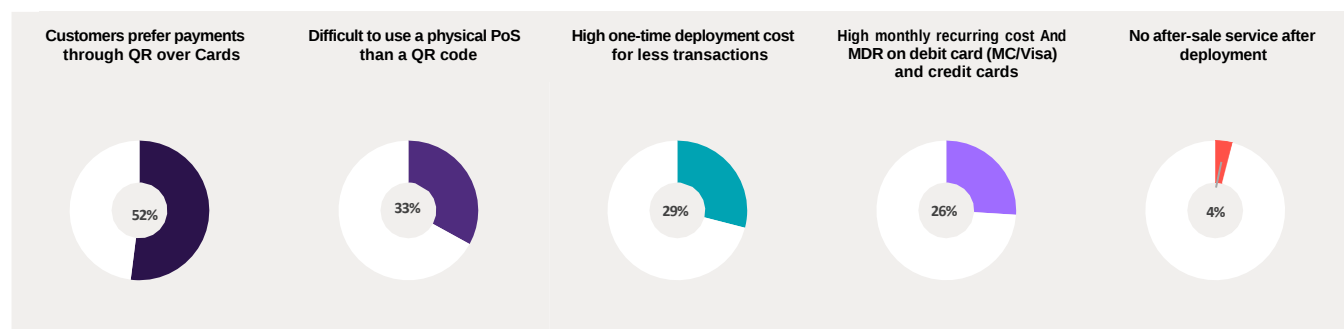


Figure 42 Factors influencing merchants' decision to not use Physical PoS

The high cost of physical PoS (one-time and monthly recurring) is a deterrent for Tier III and below-based nano-entrepreneurs. Also, the merchants feel that physical PoS are relatively more difficult to use than QR codes. These reasons clearly indicate the reasons for a meagre 1% share of physical PoS in the overall volume of PIDF beneficiaries.

Quantitative analysis:

- Around 52% of merchants cite customer preference for QR code payments as the most important reason for not using Physical PoS, highlighting a demand-side issue.
- Difficulty using physical PoS compared to QR codes is the second-ranked reason, which 33% of merchants mentioned. This implies merchants may require additional training to use physical PoS effectively.
- Cost is a significant factor affecting the use of physical PoS, with 29% of merchants reporting the one-time deployment cost and 26% mentioning the Merchant Discount Rate (MDR) fees on debit and credit cards, which increases their operational costs. In contrast, QR codes and sound-based notification devices are relatively more affordable.

Customer preference is a primary driver for the higher adoption of QR-based transactions over PoS transactions in Tier III and below centres. Card networks must explore alternatives for integrating card-based transactions with established QR-ecosystem, than the extant system of PoS showcasing dynamic QR code.

5.6.1 Merchants' Willingness to Buy A Cheaper Card-Enabled Device

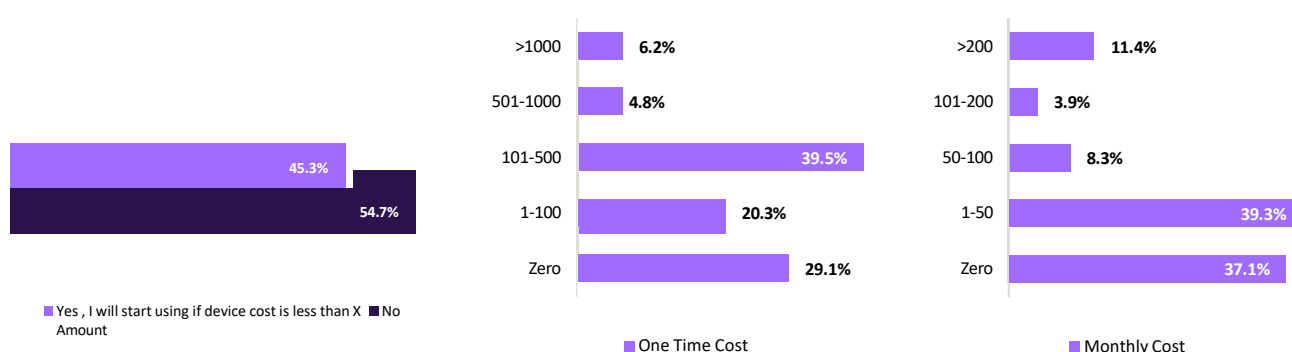




Figure 43 Merchants' willingness to use a cheaper card-enabled device. In case yes, the preferable cost. Reasons for 'No'

Almost half of the merchants (45%) shared that they would not like to opt for physical PoS, even if available at a cheaper rate, owing to low demand. Majority of the merchants (>80%) among those desiring to opt for a physical PoS at a cheaper cost would not be ready to shelve out more than INR 500 as a one-time cost and INR 50 as a recurring charge on a monthly basis.

Quantitative analysis:

- About 45.3% of merchants are willing to use a card-enabled device if available at a lower price. This indicates that beyond cost, other factors, such as ease of use, perceived complexity, or trust in the technology influence merchants' reluctance to adopt card-enabled devices.
- About 39.5% of merchants are willing to pay up to INR 500 for a one-time deployment cost, and a similar percentage of merchants are willing to pay up to INR 50 as a monthly recurring cost for card-enabled devices. This implies that merchants will likely spend the same amount on card-enabled devices as on a sound-based notification device, which typically ranges from INR 50-150 per month.
- Around 80% of merchants believe there is less customer demand for card-enabled devices because most customers prefer paying through QR codes and sound-based notification devices.
- Other than lower customer demand, merchants highlighted fraud issues with online payments (51%) and poor internet connectivity (49%) as reasons for their unwillingness to use card-enabled devices.

Penetrating card-based transactions through physical PoS is still a challenge. Acquirers should consider revising their distribution pricing models and exploring low-cost technology alternatives to address this issue effectively.

5.6.2 Incentives Required for Merchants to Shift From QR Code to Physical PoS

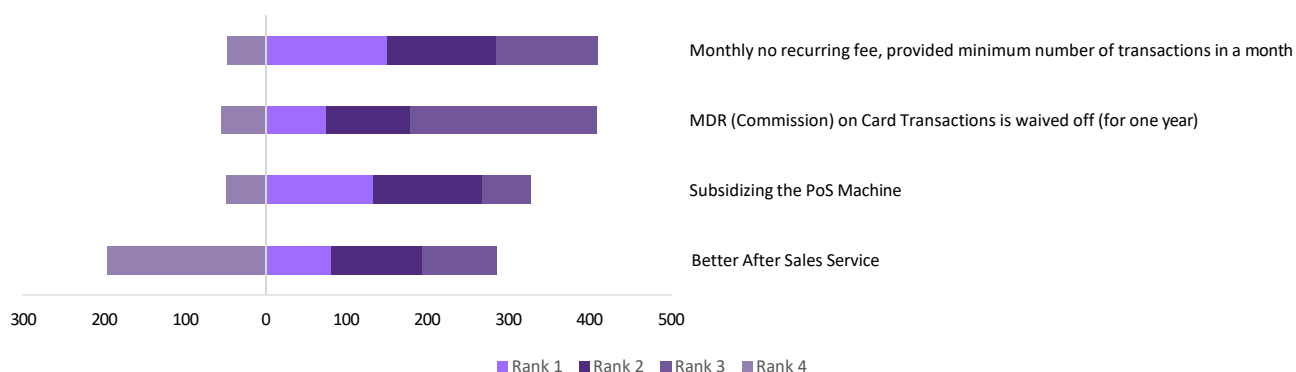


Figure 44 Incentive required for merchants to shift from QR code to Physical PoS

A non-recurring model, with waived-off MDR charges, would propel merchants to use physical PoS to carry out digital transactions.

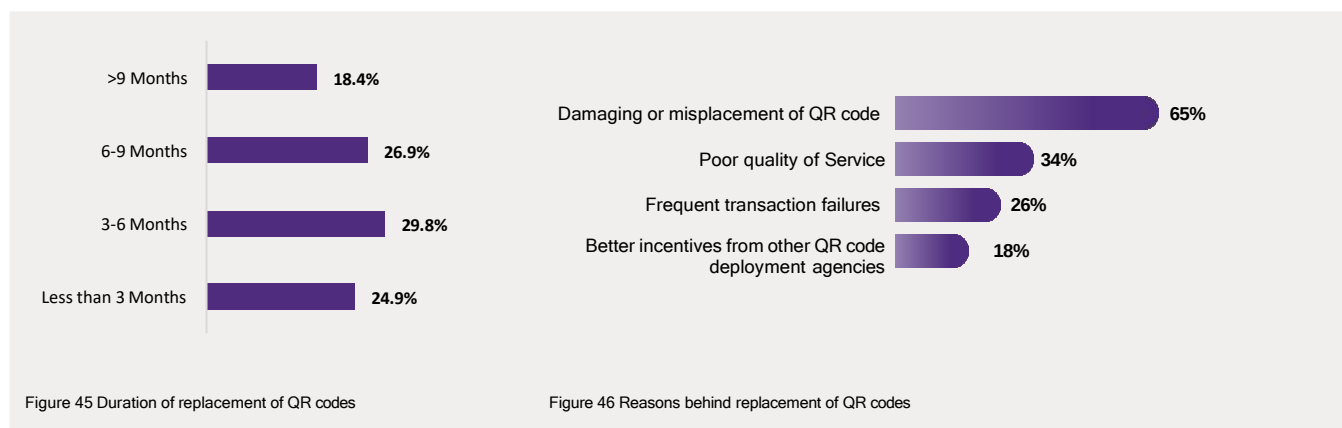
Quantitative analysis:

- Recurring cost reduction interventions are essential for merchants to adopt digital payments. The top-ranked incentive mentioned by merchants is the elimination of monthly fees for a minimum number of transactions, followed by waiving the MDR on card transactions for a period of one year.

- Subsidising the physical PoS is ranked third since the one-time deployment cost is significant compared to lower-cost instruments like QR codes and sound-based notification devices, and merchants would prefer incentives to start using these devices.

Physical PoS can get QR-code like success, only by replicating UPI pricing model - No deployment fees, no recurring charges, no MDR and low device fee.

5.6.3 Duration and Reason for Replacement of QR Codes



Nearly 80% of QR codes require replacement within nine months due to damage or misplacement, highlighting the need for acquirers to offer real-time on-ground support to enhance service reliability. Given the high cost of servicing in Tier III and below centres, there is a call for an additional service-based incentive, in addition to existing one-time device and operating costs covered by PIDF.

Quantitative analysis:

- About 54.7% of the merchants require their QR codes to be replaced within six months of deployment, and 27% of merchants need to replace their QR codes within 6-9 months of deployment. It highlights a critical issue with the longevity of QR codes. Improving the durability of QR codes could significantly reduce the frequency of replacements, leading to lower maintenance costs and increased operational efficiency for merchants.
- Around 65% of merchants cite damage or misplacement of QR codes as the top reason for replacement, followed by 34% of the merchants highlighting poor quality of service from the acquirers.
- About 18% of merchants mentioned that they receive better incentives from other acquirers, leading them to replace their QR codes.

Dropping of merchants from 'Active' deployment list under the PIDF can be reduced to a great extent, by introducing an additional 'Service-based' incentive under the scheme, in addition to existing one-time 'Device and operating cost.'

5.7 Behavioural Impact on Merchants

5.7.1 Change in Merchant Behaviour Due to Adoption of Digital Payments

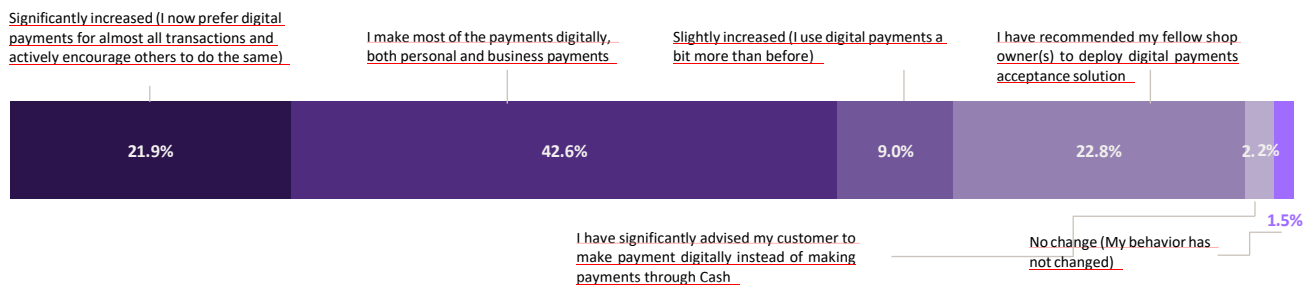


Figure 47 Change in merchant behaviour due to adoption of digital payments

Quantitative Impact of PIDF:

- Around 64.5% of merchants now conduct most of their personal and business transactions through digital payment instruments, and 9% have been using these instruments more frequently than before. Accepting digital transactions leads merchants to use digital payments for personal transactions, as it is easier and more convenient than withdrawing cash.
- About 22.8% of merchants have actively recommended digital payment methods to their fellow shop owners. This peer endorsement has facilitated greater market penetration and reduced apprehensiveness toward adopting digital payments.
- A small number of merchants (2.2%) actively advise customers to pay digitally, showing a proactive effort to promote digital transactions and reduce reliance on cash.

The adoption of digital payment acceptance devices by merchants has transformed them into consumers and advocates of digital payments, subtly reflecting the success of the PIDF in advancing India towards becoming a truly digital nation.

5.7.2 Top Digital Payment Instruments Used by Merchants

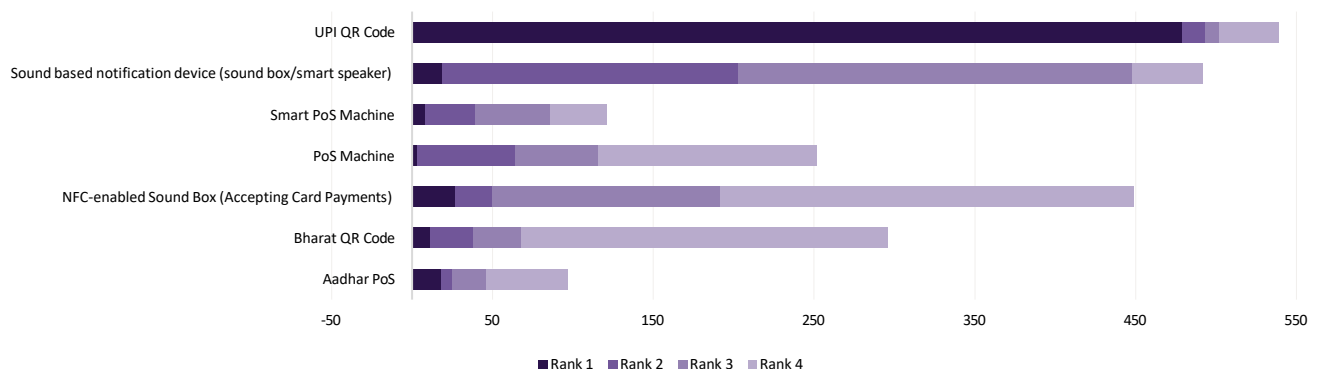


Figure 48 Top digital payment instruments used by the merchants

UPI QR code is merchants' most preferred instrument for making payments, followed by sound-based notification device.

Quantitative Impact of PIDF:

- UPI QR codes are merchants' top digital payment instruments, primarily due to their ease of use.
- Sound-based notification devices are ranked second and valued for enhancing convenience by providing instant payment confirmations without merchants needing to check their phones.
- Physical PoS and smart PoS are less favoured, likely due to their higher costs and complexity.

5.7.3 Types of Bills Paid by Merchants Using Digital Payment Instruments

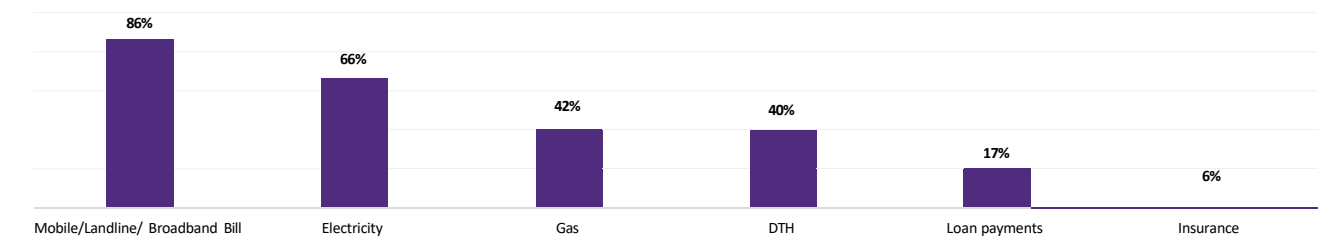


Figure 49 Types of bills paid by merchants using digital payment instruments

Quantitative Impact of PIDF:

- Most merchants pay their mobile bills (86%) and electricity bills (66%) through digital payment instruments due to the high convenience and frequency of these transactions.
- The widespread use of digital payments for a variety of bills reflects an overall shift towards digital financial management, driven by the benefits of efficiency, ease of use, and immediate transaction records.

5.7.4 Ownership of Cards by Merchants

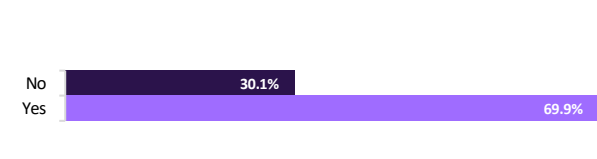


Figure 50 Ownership of cards by merchants

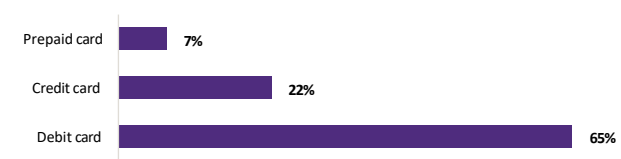


Figure 51 Type of cards owned by merchants

Quantitative Impact of PIDF:

- Around 70% of the merchants own at least one type of card for digital payments.
- Majority of the merchants (65%) possess debit cards due to their direct link to bank accounts and the ability to withdraw cash.
- Less than a quarter of merchants (22%) have credit cards, possibly due to stricter eligibility criteria and limited credit access.
- The ownership of prepaid cards is very low, primarily due to a lack of awareness and the inconvenience of loading funds onto the card before use.

5.8 Need for Balanced Growth of BharatQR Code

5.8.1 Awareness of BharatQR Among Merchants

BharatQR, an integrated QR code payment acceptance instrument, has not been successful in the market. Despite 23.7% of the merchants being aware of this product, only 1.5% are using it. It showcases that dedicated efforts are required to promote this integrated instrument, enabling payments through UPI, as well as cards.

Quantitative analysis:

- Around 63.2% of the merchants are familiar with the BharatQR code, and significantly fewer merchants use it. This contrasts sharply with merchants' widespread familiarity and usage of the UPI QR code.
- About 36.8% of the merchants are unaware of BharatQR, indicating a significant gap in knowledge about this digital payment instrument.

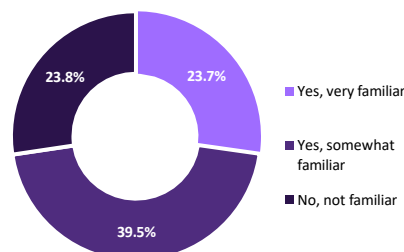


Figure 52 Awareness of BharatQR among merchants

5.8.2 Merchants' Perception of Demand for BharatQR code



Figure 53 Merchant's perception of demand for BharatQR code

As merchants belonging to Tier III and below centres are looking for cheaper options and unwilling to pay high one-time and recurring costs for physical PoS, BharatQR is the viable answer. Despite 63% of merchants being aware and 31% of merchants believing there is good demand for BharatQR, the product has not captured the market.

Quantitative analysis:

- Around 31.7% of merchants believe there is moderate to high demand for BharatQR from customers.
- About 50% of merchants believe there is low or no demand for BharatQR codes. This perception likely stems from the observation that customers are not inquiring about BharatQR.

5.8.3 Challenges Faced in Obtaining BharatQR Code

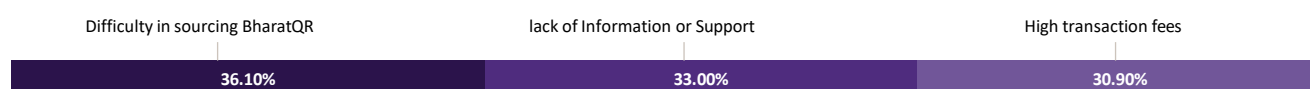


Figure 54 Challenges Faced in Obtaining in BharatQR Code

Merchants can either not source the QR codes or not get proper information/support.

Quantitative Analysis:

- Around 36% of merchants highlighted difficulties in sourcing BharatQR, indicating distribution channels need to be improved to cater to merchants better.
- About 33% of merchants mention a lack of information or support needed to obtain BharatQR, pointing to a need for better communication and assistance for greater adoption of BharatQR.

Banks need to take a step forward to fulfil the latent demand for BharatQR.



6. Case studies

"अब भुगतान के लिए ग्राहक को बार-बार बोलना नहीं पड़ता, QR कोड देखकर खुद ही भुगतान कर देते हैं।"

"Now, customers don't have to be reminded repeatedly for payment; they see the QR code and make the payment themselves."

Muskan
Naya Bans, Uttar Pradesh

Muskan runs the Pearl Beauty Parlour in Naya Bans (a small village in Noida, Uttar Pradesh). Since she started accepting digital payments, her business has seen a positive change. She remembers the days when she had to keep asking customers to pay, which was stressful. Now, with QR codes and digital payments, things have become much easier for her and her customers.

She suggests that digital payment companies can promote their usage among small merchants by offering cashbacks and vouchers, which would motivate them to adopt and benefit from digital payments.



Increased Customer Conversion

Before digital payments, many people who didn't carry cash or hadn't planned on using her services would leave without receiving them. Now, mobile-based payments have increased footfall, improving the conversion of potential customers. This boost in business due to digital payments makes Muskan happy and proud. She enjoys welcoming new customers and knows her parlour is now more inviting to everyone.



Improved Customer Satisfaction

Digital payments have made Muskan's customers much happier. She no longer worries about giving change, which used to slow things down and frustrate people. Now, payments are quick and easy, leading to a better experience for everyone. Regular customers opt for additional services, as payments can now be made through mobile, which she feels has increased revenue by 15-20% compared to earlier days when customers, especially ladies with limited cash in their purse, had to pay in cash.



Increased Safety and Reduced Theft

One of the most significant benefits for Muskan has been the enhanced security of her earnings. Previously, she had concerns about theft by her staff while she was away from her parlour. With digital payments, all transactions are deposited directly into her bank account, alleviating worries about cash theft. This newfound security has provided her with peace of mind, ensuring her earnings remain safe regardless of her presence at the parlour.



Payment Convenience

Digital payments have saved Muskan a lot of time. She remembers a time when a customer didn't have cash and her PhonePe wasn't working. The customer called her husband, who scanned the QR code from home, and Muskan received the payment instantly. This quick and easy solution made Muskan realize how convenient digital payments are.

"कैश और डिजिटल पेमेंट दोनों में जोखिम है, पर कम से कम डिजिटल पेमेंट में तुरंत एसएमएस आ जाता है तो नुकसान होने से बच जाता है।"

"Both cash and digital payments have risks, but at least with digital payments, you get an instant SMS, which helps prevent any loss."

Dipika,
Bavla, Gujarat

Dipika, a middle-aged woman from Bavla, Gujarat frequently struggled to calculate change whenever a customer visited her Paan shop. Additionally, keeping accurate records was a significant challenge, especially as she balanced her domestic responsibilities with managing her shop. The introduction of digital payments transformed her situation. Now, Dipika no longer needs to worry about managing change or maintaining meticulous accounts, making her business operations smoother and more efficient.



Increased Footfall

Since Dipika began accepting online payments at her small paan shop, she noticed a steady stream of new customers. Unlike other nearby shops that only accepted cash, her willingness to embrace digital transactions made her store a convenient choice. This simple change brought in more business, helping her paan shop grow steadily as customers appreciated the ease and flexibility of paying without cash, as most of the transactions are small valued.



Savings and Investment

Since adopting digital payments, Dipika has discovered several loan options that could support her business growth. Although she hasn't utilized any loans yet, she's now equipped with the knowledge to do so when needed. The transition to digital transactions has also enabled her to start saving regularly in a post office account, a financial practice that has added a layer of security to her future. These changes have not only expanded her financial options but have also instilled a sense of stability and preparedness for the days ahead.



Better Balance Between Shop and Family

Dipika values digital payments for their time-saving benefits, which are crucial for her dual responsibilities as a small seller and a homemaker. By minimizing the time spent on financial transactions, she can efficiently serve more customers while also fulfil her family responsibilities with greater ease.



Behavioural Benefits

Since Dipika began making vendor payments digitally, she has noticed a significant improvement in efficiency. No longer she travels to meet vendors in person for which she had to close her shop; she saves valuable time that can now be used to serve more customers.

"कई बार जल्दी में दवाई लेने के लिए लोग आते हैं पर हड़बड़ी में वे वॉलेट घर पर भूल गए होते हैं, अब UPI से वो समस्या हल हो गई है।"

"Many times, people come to buy medicine in a hurry but forget their wallet at home in the rush; now, UPI has solved that problem."

Moon
Kamrup Rural, Assam

Moon, a resilient pharmacy owner, embraced digital payments during COVID-19, enhancing safety by eliminating cash handling. This shift not only secured her business but also empowered her to manage utility payments digitally, fostering financial awareness.



Mental and Physical Safety

During the peak of the COVID-19 pandemic, Moon was faced with a tough decision: to keep her pharmacy open or close it due to the heightened risk of virus transmission. But the introduction of digital payments became a turning point. "Digital payments saved my business and kept us safe," she recounted. With no need to handle cash, Moon significantly reduced the risk of spreading the virus, both for herself and her customers.



Utility Payments – A Click Away

Moon shared how digital payments have not only helped her business but also transformed her personal financial habits. With the convenience of online transactions, she now pays her electricity bills, other utility bills, and expenses digitally. Although she hasn't yet ventured into taking loans or investing in mutual funds, Moon feels more informed and aware of these options. She notes that the shift to digital payments has sparked greater financial awareness among people, making them more conscious of the various investment opportunities available to them.



Digital Payment Saves the Day

One day, a customer had forgotten her wallet while rushing to purchase essential medication for her child. In a state of panic, she feared she would have to return home and delay the treatment. However, Moon's pharmacy had enabled QR-based payments. Though the customer was not using UPI, but she shared the QR code with someone in her family and they made the payment, avoiding any delay in her child's care.



Keep Shop Open for Longer Hours.

Earlier Moon had to close her shop early as she feared robbery or theft in dusk hours, but with onset of digital payments, much of her earnings are directly transferred into the bank account.

"पहले किसी न किसी वेंडर के पास जाना पड़ता था एडवांस पैसे जमा करने, उसकी वजह से आने-जाने में रिक्शा पर बहुत पैसे खर्च हो जाते थे। डिजिटल पेमेंट ने अब आसान कर दिया।"

"Earlier, we had to go to a vendor to deposit advance money, which meant spending a lot on rickshaw fares for commuting. Digital payment has now made it easy."

Krishna Devi
Noida, Uttar Pradesh

Krishna Devi runs a modest general store in Noida, Uttar Pradesh, that has been providing people all the necessities. Her journey, however, took a transformative turn when she embraced the world of digital payments.



Convenience

Krishna Devi recalls the days when she had to continuously juggle between giving change and recording each transaction in a register. On days when she had to be away and someone else looked after the shop, she used to be worried about missed transactions. Now, with digital payments, these concerns have been resolved.



Participation in Wider Fintech Services

Krishna Devi's adoption of digital payments has not only streamlined her financial transactions but has also paved the way for significant savings. The digital platforms have also provided her with knowledge about online insurance, and she has procured online insurance for her family. This would not have been possible without the onset of digital payments.



Digital Payment as a Saviour

Krishna Devi vividly recalls a distressing incident when her purse was stolen while traveling by public transport. This unfortunate event caused significant disruption to her business, as she faced severe liquidity issues in her business. However, this setback strengthened her resolve to rely more on digital payments.



Increased Savings

She recalls that in the pre-digital payments era, paying the advance to the vendor required a physical trip, which meant spending money on a rickshaw or auto. This was a significant financial burden. Now, with digital payments, she can transfer the advance with the click of a button, saving both time and money.

"डिजिटल पेमेंट के इस्तेमाल से अब तो फोन पर ही खाता बुक बन जाता है, पेपर पर लिखने की जरूरत नहीं है।"

"With the use of digital payment, the account book can now be created on the phone itself, no need to write it down on paper."

Bichitra Saharia
Noonmati, Assam

Bichitra Saharia runs an electrical shop in Noonmati (a small locality in Guwahati, Assam). Since she started accepting digital payments through QR codes, her business has experienced increased efficiency. The switch to digital payments has not only attracted more customers but also brought a sense of security and convenience to her daily operations.

Bichitra believes digital payments will continue growing, essential for small businesses like hers to thrive. In the future, she hopes more businesses adopt digital payments for safer, more efficient operations.



Increased Daily Customers

The ease of paying digitally has made her shop more welcoming. Customers find it convenient and quick to make purchases without the hassle of carrying cash or worrying about exact change, especially small ticket purchases. She loves seeing her shop busy and watching familiar faces come back more often because she made things easier for them.



Safety and Convenience

Before using digital payments, Bichitra often worried about the safety of keeping cash at her shop. Now, with digital payments, she feels much safer knowing that all transactions are securely deposited directly into her bank account. This change has relieved her of the constant anxiety of cash handling and security issues.



Improved Financial Management

Adopting digital payments has changed how Bichitra manages her finances. She has shifted from traditional cash-based accounting to digital record-keeping, using apps and platforms to track transactions. This shift has reduced errors and saved her valuable time, allowing her to focus more on serving her customers.



Streamlined Operations

The transition to digital payments has significantly improved Bichitra's daily operations. She now pays distributors digitally on a regular basis, encouraging them to adopt digital methods as well. While she still uses some cash transactions, the move towards digital has made her business more efficient and reliable.

"बचत बहुत बढ़ गई है, क्योंकि पैसे सीधा अकाउंट में आ जाते हैं तो फालतू का खर्चा नहीं होता।"

"Savings have increased significantly because the money goes directly into the account, so there is no unnecessary spending."

Bhaskarjyoti
Borni, Assam

Bhaskarjyoti runs a battery shop in Borni village, in Hajo sub-division of district Kamrup, Assam. Before he started using digital payments, he often had trouble managing his money and keeping a track of transactions. Now, with the help of digital payment acceptance, Bhaskarjyoti believes his business will grow even more. He plans to keep using digital payment methods and hopes to get more loans to expand his battery shop even further.



Limited Unnecessary Expenditures

Digital payments have transformed Bhaskarjyoti's financial habits and helped him save money. Before adopting digital payments, he often spent cash on small, unnecessary purchases throughout the day. Now, with digital payments, the money goes directly into his bank account. This shift has curbed his impulsive spending and helped him build financial discipline.



Instant Payments

Since Bhaskarjyoti started accepting payments digitally, customers pay him instantly. This change has relieved him of the stress of waiting for payments, allowing him to manage his cash flow more effectively. Now, even when he doesn't have cash on hand, he can purchase supplies without worry, ensuring his business runs smoothly.



Time Saving

Digital payments have made Bhaskarjyoti's daily work much simpler. Now, he doesn't have to worry about handling cash or giving change to customers. The need for someone to constantly manage cash is eliminated, saving him a lot of time and allowing him to focus more on running his business smoothly. Customers also appreciate the easy and modern way to pay.



More Customers

Bhaskarjyoti has experienced that digital payments helped him increase customer base as well as transactions collectively by 10-15%, as digital convenience attracts more people to his shop. This change has made a big difference in Bhaskarjyoti's life. Before using digital payments, he often worried about losing sales when customers didn't have cash. Now, with more customers and steady sales, he feels relieved and confident.

"डिजिटल पेमेंट से प्रॉपर रिकॉर्ड रहता है। एक बार मैंने एक ग्राहक को गलती से एक्सपायर सामान बेच दिया और जब वह वापस करने आया तो मैं उसे पहचान पाया क्योंकि वह ट्रांजैक्शन डिजिटल रूप से रिकॉर्ड था।"

"With digital payment, a proper record is maintained. Once, I mistakenly sold expired goods to a customer, and when they came back to return it, I was able to recognize them because the transaction was digitally recorded."

Pawan Yadav
Mithapur, Bihar

Pawan Yadav, a sweets and chaat shop owner in Mithapur, faced considerable challenges with cash transactions. Once, while transporting cash to the bank, he faced an attempted robbery that made him fearful of carrying large amounts of money. As more customers started preferring cashless payments, Pawan decided to switch to digital payments.



Payment Tracking Made Easier

The ability to track digital payments has significantly enhanced Pawan's service level to his customers. For instance, he was able to refund money to a customer for an expired good after a few days due to digital payment tracking. This has created deep goodwill for him in the market. This goodwill and the transparency enabled by digital payments have not only fostered deeper trust but also established his shop as a preferred choice among locals.



Digital Savings Helped in Procuring Immovable Assets

Pawan's financial situation improved as his earnings began going directly into his bank account through digital payments. This change allowed him to save more effectively and make modest investments in land and gold, enhancing his financial stability without needing to take out loans.



Reduced Bank Visits

With over half of his earnings now seamlessly deposited into his bank account directly through digital payments, Pawan found himself making fewer trips to the bank—just once every week or two. This gave him more time to devote to improve his shop.



Mental Well-Being

Pawan's concerns about the safety of holding large sums of cash in his shop peaked after a close encounter with a robbery attempt. The incident left him anxious about both his shop and personal safety. However, with the introduction of digital payments, Pawan found a sense of security. Now, instead of worrying about cash on hand, he can focus on serving his customers.

"एक बार एक इंसान आया था, उसके पास कैश नहीं था। उसने मेरे QR कोड को स्कैन किया और मैंने उसे पैसे दे दिए। UPI से पहले यह कहां संभव था?"

"Once, a person came without any cash. He scanned my QR code, and I gave him the money. This wasn't possible before UPI."

Hanif
Nawabganj, UP

Hanif is a tea stall owner in Nawabganj, who often faced challenges with providing "chutta" (loose change) to customers due to the small amounts involved in transactions. Many customers would end up taking tea on credit, promising to pay the next time. To solve this issue, Hanif switched to digital payments, to ensure timely payments.



Economic Benefits

Hanif struggled with regular customers asking for tea on credit due to the non-availability of chutta (loose change). But that all changed when he started accepting digital payments. Now, customers scan and pay, making payments with ease. This convenience didn't just simplify his life; it also attracted more customers each day and steadily increased Hanif's daily turnover, boosting his modest venture into a more sustainable livelihood.



Safety and Security

Hanif's tea shop is his primary source of income. The cash lying in the shop left him anxious about the threat of robbery. But the shift to digital payments changed everything. Now, with most transactions flowing seamlessly into his bank account, that old worry of being targeted for robbery had vanished.



Positively Impacted Lives

One afternoon, Hanif stood behind the counter of his tea stall, when a man approached him. The man was in urgent need of cash but couldn't find an ATM. He approached Hanif and without hesitation, Hanif pulled out his phone, the man scanned the QR code for digital payment, and Hanif handed over the required cash. This simple gesture not only solved the man's dilemma but also showcased the incredible convenience and trust that digital payments had brought.



Saving for Small Shopkeepers

Hanif reflected on how digital payments had transformed his life as a small shopkeeper. Before, it was all too easy to spend on "faltu" (wasteful) expenses when dealing with cash on hand. But now, with payments going directly into his bank account, he found it much simpler to save significant amounts. For Hanif and many others like him, digital payments has become a crucial tool in achieving not just daily stability but also the ability to save for a brighter future.

A photograph of Shishir Sourabh, a man with glasses and a beard, standing in his hardware store. The store is filled with shelves of various products, including boxes and bags. The image has a purple tint.

**"पहले मुझे हिसाब के लिए किसी की मदद लेनी पड़ती थी, अब सब इन डिवाइस पर हो जाता है।
जो पैसा मैं हिसाब के लिए किसी को देता था, वह अब बचत हो जाती है।"**

"Earlier, I had to take someone's help for accounting, but now everything is done on these devices. The money I used to spend on accounting help is now saved."

Shishir Sourabh
Hehal, Jharkhand

Shishir Sourabh, who runs a hardware store in a small town of Hehal, Jharkhand has experienced improvements through the adoption of digital payments, specifically QR code-based UPI transactions. Over the past 3-4 years, the shift to digital payments has led to a substantial increase in both customer numbers and daily transactions.



Growth in Business

Shishir, one of the few early adopters of digital payments in his area, experienced a rise in his customer base after adopting digital payments, with 10-15 new customers each month during the first year. This is a significant number, considering the small town of Hehal. His shop now encounters 20-25 transactions via QR codes on a daily basis.



Operational Efficiency

He often had to ask for help managing finances, a cost that ate into his earnings. Since Shishir switched to digital payments, the records are now digitally available. This change saved him money and cut down his banking time by 2-5 hours weekly. With more time and potential savings, his daily revenue soared by 20-25% on a quarterly basis. The simple switch transformed Shishir's business, bringing newfound ease and prosperity.



Enhanced Customer Relationships and Trust

Shishir fondly recalls how customers increasingly prefer the convenience of cashless payments at his small shop. Whether it's for a small purchase of ₹10 or a larger transaction of ₹20,000, the ease of digital payments has transformed the way he does business. This shift has significantly boosted his sales, with digital transactions contributing to an impressive 60-70% of overall sales.



Personal Convenience

Shishir used to spend hours visiting his vendors, often carrying large sums of cash. It was a time-consuming and sometimes nerve-wracking task. Nowadays, most of his vendors have embraced online payments, making life much easier. In fact, around 50% of his vendors have adopted UPI, which has streamlined the payment process considerably.



"हम तो चाहते हैं कि ग्राहक पूरा डिजिटल पेमेंट ही करे, अब कैश पेमेंट से डर लगता है, कैश से ज़्यादा फ़ाँड होते हैं।"

"We prefer customers to make entirely digital payments now; we are afraid of cash payments because there are more frauds with cash."

Vishal
Kanka, Jharkhand

Vishal runs a small printing shop in Kanka (a small town near Ranchi) in Jharkhand. Before he started accepting digital payments, he had to note down all transactions manually. If he forgot any transaction, it caused problems. Now, with digital payments, he has a record of everything.

Vishal is confident that digital payments will become a necessity, much like mobile phones are today, and that they will be the future of India.



Reduced On-Credit Sale

Before Vishal started using digital payments, he often faced delays in receiving money because customers would buy things on credit and pay later. This sometimes caused cashflow problems. Now, with QR codes and PoS installed at his shop, customers pay instantly through digital methods. Their excuse about not having cash on hand, has reduced to a great extent. This has helped Vishal manage his finances more smoothly and reduced the hassle of chasing payments.



Increased Income

Vishal now handles transactions worth ₹30,000 to ₹40,000 monthly through UPI. This consistent and reliable revenue stream has brought him a sense of stability and confidence, knowing that he can provide better for his family and plan for the future without the constant worry of delayed payments.



Enhanced Savings and Investments

Since Vishal started using digital payment apps, he has begun investing in systematic investment plans (SIPs). These allow him to invest small amounts regularly in mutual funds. He also explored online health insurance, which he initially tried out of curiosity. Later, when he faced health challenges, the insurance coverage helped him manage medical expenses without financial stress. These financial tools weren't something Vishal considered before. Now, these decisions have boosted his confidence in securing his family's future.



Time Saving

Digital payments have saved Vishal a lot of time. Before, he had to go to the bank frequently to make payments, standing in long queues that took away from his time at the shop. This affected his availability at the shop. Switching to digital payments has eliminated these long waits, enabling him to be more present and promptly attend to his customers' needs.

7. Recommendations

PIDF's strategic focus on underserved areas, particularly tier III to tier VI towns and the north eastern regions, highlights its commitment to bridging gaps in financial infrastructure. By deploying both physical and digital payment systems, PIDF has empowered local merchants and essential service providers, effectively narrowing the rural-urban divide in digital transactions. This initiative has not only facilitated economic empowerment at the grassroots level but also fostered local development, contributing to a more balanced and inclusive economic growth.

Despite significant achievements, challenges persist, especially in the less accessible tier V and tier VI centres. High operational costs, coupled with logistical and infrastructural limitations, impede the seamless adoption of digital payment acceptance infrastructure in these regions. Furthermore, the maintenance costs of digital devices, limited consumer readiness, and the need for more inclusive incentive structures remain critical issues.

Positive contribution to digital payment acceptance ecosystem by PIDF

The primary survey and stakeholder discussions provided valuable insights into the dynamics of merchants' adoption of digital payments in tier III to tier VI centres, revealing the substantial influence of the PIDF. The most significant insights are briefed as below:

- UPI QR codes saw rapid growth post-PIDF implementation, adding incremental growth of 274% in three years (Mar'21 to Mar'24) with total UPI QR code growth from 925 Lakh to 3462 lakh.
- Physical PoS experienced significant growth with increase from 44 lakh in March 2020 to 89 lakh by March 2024, reflecting a heightened compounded annual growth rate (CAGR) of 23.72%.
- UPI transactions exhibited substantial growth, especially in merchant payments. The share of UPI P2M transactions increased from 34% in FY 2021-22 to 59% in FY 2023-24, highlighting the positive impact of PIDF on digital payment adoption.
- UPI and Sound-based notification devices have become the leading modes of payment, with UPI surpassing cash for many transactions, especially in smaller towns.
- 42% of merchants receive 30-60% of their turnover through digital payment instruments, while a similar percentage of merchants (37%) receive 10-30% of their turnover through digital means.
- 74.4% of merchants (81.9% of merchants with annual revenue of less than 5 Lakhs) adopted digital payments acceptance instrument only within the last three years, indicating a significant increase in recent adoption rates driven by the PIDF.
- Only a minimal 17% reported no noticeable change in sales revenue, while a significant majority of 83% experienced some level of positive increase in their sales revenue.
- The primary survey underscored the cascading effects of adopting digital payments in business, extending into the personal lives of merchants. Remarkably, 86% of respondents now pay their mobile bills online, 66% manage their electricity bills digitally, and 42% handle their gas bills through online platforms.
- 16% of merchants have fully transitioned to digital payments for transactions with their vendors, while approximately 45% predominantly use digital methods. This trend underscores a clear preference among merchants for digital payments over cash.
- Despite the benefits, merchants face several challenges with digital payments. Key issues include a lack of issue resolution (42%) and consumer-side frauds (36%). Although 59% of merchants reported resolving their issues within 24 hours, the fear of fraud and transaction failures remain the primary reasons for discontinuing digital payments. Unsurprisingly, the same had been echoed by acquirers too, that the cost of servicing is very high in sparsely populated areas, particularly in Tier 5 and 6 centres. This high cost limits their ability to respond in real-time or at the quickest possible timeframe, which results in them losing a few of the precious merchants.

To this end, sustaining PIDF's momentum will require continuous evaluation, refinement of strategies, and targeted interventions to effectively address emerging challenges. The list of recommendations to this end are listed below:

Key Recommendations

- **Need of relooking the definition of 'Active status of deployed device and minimum usage criteria' in Tier III and below centres:** Around 1/6th of merchants with annual turnover less than ₹5 lakh experience less than one digital payment acceptance transaction on daily basis. This can be easily understood that the number of smaller merchants operate largely from Tier V and VI centres. This explains the reason for 'Inactive deployment basis minimum usage criteria under PIDF' and need for relaxing the 'Minimum usage and active criteria' for Tier V and VI centres. This calls for relaxing the threshold for 'active deployment' criteria specifically tailored for tier V and VI centres. Due to the lower population density and low transaction volumes in rural areas, it is suggested setting a more lenient threshold of 20 transactions in 90 days to ensure these merchants are not disadvantaged. It is also recommended, differentiating this threshold criteria for PoS, Micro-Automated Teller Machines (Micro-ATMs), and QR code transactions in tier VI to better suit varied merchant needs.
- **Need of having servicing infrastructure in remote areas and hilly regions like JGK and the Northeast:** Moreover, there is a need for long-term support to foster digital payment habits among merchants. One of the concerns shared by merchants is the limited serviceability by acquirers. The high cost of manpower for technical support, servicing, and replacing devices in remote and hilly regions such as JSK and the Northeast is a significant challenge. To incentivize sustained adoption, it is proposed to offer "servicing incentives" annually, contingent upon merchants meeting transaction quotas set by the regulator, in addition to the existing "one-time setup and operating incentive." This approach will help address the high costs of device maintenance, QR replacement (due to the low shelf life of QRs) and its costs, technical support, and servicing in remote Tier V and Tier VI areas, as well as in hilly regions like JSK and the Northeast.
- **Consideration to include the government services payment instruments under the ambit of PIDF:** In areas where physical devices are used to enable government payments such as a) PDS shops (100% of Fair Price Shops them have ePOS devices), and b) essential services in transport (digital tickets issued real time in buses); the tech and development costs for digitizing the entire service or transaction flow, including payments, is also higher. As these initiatives contribute to expanding the scope of digital payments, ways to subsidize such initiatives under the PIDF may be explored.
- **Additional incentive structure for Tier V and VI centres:** As per Census 2011, many of Indian states are having rural population >75%, including Bihar, Orrisa, Chhattisgarh, Jharkhand and Rajasthan. As rural population is defined as any village, having population less than 5000, this translates that more than 75% of these State's population resides in Tier VI centres. On an overall basis, 53% of India's population resides in Tier VI centres, where the scope for digital payment penetration is large. According to a recent study by PCI (2022), rural digital payment users numbered only 12 crore, out of a total rural population of 83 crore (tier-wise data not available). This calls for an additional 'Onboarding as well as Servicing' incentive structure for Tier V and Tier VI centres to promote digital payment acceptance infrastructure.
- **Need for dedicated effort to promote instruments for credit card usage:** The credit card volume growing at a CAGR of 30.9% (FY 2015-19), subdued to CAGR of 1.1% (FY 2019-24), while the UPI-based transactions (essentially debit card/account based transaction) has grown at staggering CAGR of 59.9% (FY 2019-24). On same lines, there has been growth in physical PoS-based supply side infrastructure post implementation of PIDF, but that has not translated into more Credit Card based transactions, owing to user's preference to UPI over Cards. This seeks targeted incentives and/or interventions to promote Credit card based transactions, including Credit on UPI, BharatQR or linkage of Credit cards with UPI.
- **Need of awareness about secure usage of Digital payments acceptance infrastructure:** Insights from the primary survey highlight the need for increased consumer awareness initiatives to alleviate fears and misconceptions about digital payments. Issuers and networks, being the actual drivers in dealing with merchants and consumers, play an important role in raising awareness. Therefore, the PIDF may explore targeted incentives to Issuers and Networks for campaigns aimed at raising awareness about digital payment methods, with special focus newly introduced instruments and having low adoption, including NFC and Tap S Pay, in Tier IV to Tier VI centres. The primary survey emphasized the importance of building trust and confidence among users to promote wider acceptance and usage of digital payment methods. This calls for a dedicated campaign to deepen trust, address fraud-related misconceptions, provide training on best practices, and deliver targeted pop-up notifications on merchant apps for adoption of digital payments, including NFC and Tap S Pay in these centres.
- **Latent demand of BharatQR as digital payment acceptance infrastructure:** BharatQR is both interoperable and inclusive, supporting card payments as well as UPI. Therefore, having a single, interoperable QR code that enables the acceptance of all payment forms—cards, UPI, and even CBDC—would be optimal for driving digital acceptance. Results

from primary surveys indicate that BharatQR has adequate demand in the market, as merchants are unable to afford physical PoS systems for card-based transactions. Additionally, merchants face difficulties in sourcing BharatQR codes and receiving adequate information and support regarding them. Banks need to step forward to fulfill the latent demand for BharatQR. RBI's Payments Vision Document 2021 also advocates for building capability for interoperability of payment systems. It will provide a choice of payment methods for over 1 billion cards in India across different product types and networks. To understand why BharatQR has lower adoption compared to UPI QR codes, in-depth research is needed to explore its further applications by banks and non-bank acquirers. RBI may explore dedicated incentive to augment the adoption for BharatQR as Phase II of the PIDF.

- **Bigger Wider Digital Adoption by giving consumer complete set of choices:** PIDF distribution is skewed towards digital acceptance devices (97%), as compared to physical acceptance devices (3%) (RBI Data). This majorly covers UPI QR codes, thus pushing card-based ecosystem to the backseat.

Indian banks and government has invested crore on increasing bank penetration and providing access through indigenous RuPay debit cards. As of Oct 2023, there are more than 75 crore RuPay cards in circulation. However, the total debit card transactions have reduced 60% in FY 2023-24 (16.5 crore) from FY 2020-21 (41.7 crore). The plastic cards are crucial and integral part of the overall digital payment ecosystem. It is a fact that the huge cost of physical PoS may not be commercially sustainable for micro and small merchants, as it comes with both one-time set up cost and monthly recurring cost. However, this can't be the reason for denying consumers from card-based payment ecosystem, especially when UPI ecosystem is built on debit-card based validation.

PIDF initially intended to target and increase payments acceptance infrastructure by adding physical and digital payment acceptance devices in 1:2 ratio every year. Given the current imbalance in this ratio, there may be a need for RBI to reconsider the approach to maintain this balance. One recommended solution would be to empower consumers by incentivizing BharatQR and Card-based NFC enabled QRs/Sound-based notification devices additionally, which would help consumer giving wide range of choices, along with taking care of cost-sensitive merchants.

In conclusion, while PIDF has significantly expanded payment infrastructure across India, particularly in remote areas, there remains a critical need to address accessibility and operational challenges in tier V and VI centres. The recommendations put forth by stakeholders underscore the importance of adapting PIDF strategies to local contexts, enhancing consumer readiness, and providing sustained support to merchants.

Glossary

AePS	Aadhaar-enabled Payment System	NITI Aayog	National Institution for Transforming India
BBPS	Bharat Bill Payment System	NPCI	National Payment Corporation of India
BC	Business correspondents	OECD	Organization for Economic Co-operation Development
BF	Business facilitators	OTP	One-Time Password
BHIM	Bharat Interface for Money	P2M	Person-to-Merchant
CAGR	Compounded Annual Growth Rate	P2P	Person-to-Person
DBT	Direct Benefit Transfer	PA	Payment aggregators
DFS	Digital Financial Services	PCI	Payments Council of India
DLG	Default Loss Guarantee	PG	Payment Gateways
FS	Financial Services	PIDF	Payment Infrastructure Development Fund
FY	Financial Year	PM SVANidhi	PM Street Vendor's AtmaNirbhar Nidhi
GTB	Grant Thornton Bharat	PMJDY	Pradhan Mantri Jan Dhan Yojana
IAMAI	Internet and Mobile Association of India	PoS	Point-of-Sale
IMPS	Immediate Payment Service	PPI	Prepaid Payment Instruments
INFE	International Network on Financial Education	PSS Act	Payment and Settlement Systems Act
JAM Trinity	Jan Dhan Yojana, Aadhar and mobile number	QR	Quick Response
JGK	Jammu and Kashmir	RBI	Reserve Bank of India
MeitY	Ministry of Electronics and Information Technology	RuPay	Rupee and Payment
MDR	Merchant Discount Rate	SHG	Self-help groups
Micro-ATM	Micro-Automated Teller Machine	SIP	Systematic Investment Plan
MFI	Micro Finance Institution	UIDAI	Unique Identification Authority of India
NACH	National Automated Clearing House	UN	United Nations
NCMC	National Common Mobility Card	UPI	Unified Payment Interface
NEFT	National Electronic Funds Transfer	UTs	Union Territories
NFC	Near-field Communication	WLA	White Label ATM
NFS	National Financial Switch	Y-o-Y	Year-on-Year
NGO	Non-Governmental Organization		

About PCI

The Payments Council of India (PCI) was formed under the aegis of the Internet and Mobile Association of India (PCI) in the year 2013 catering to the needs of the digital payment industry. The Council was formed inter-alia to represent the various non-banking payment industry players, and to address and help resolve various industry-level issues and barriers that require discussion and action. The council works with its 150+ members, encompassing over 90% of the industry to promote payments industry growth and to support our national goals of 'Cashless Society' and 'Growth of Financial Inclusion' which is also the Vision Shared by the RBI and the Government of India. PCI represents the complete digital payments ecosystem of India through its various committees representing different sectors. Sectors represented by PCI are as follows:

01

Merchant Acquirers and Aggregators

02

Prepaid Payments Instruments

03

Unified Payments Interface (UPI)

04

Bharat Bill Payment Operating Units (BBPOUs)

05

International Remittance and Trade

06

Payments Technology Enablers

07

Card Networks

08

Payments Banks



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