

India Digital Payments Report

2021



The RBI's Vision document for 2019-2021 pertaining to Payment and Settlement Systems in India was drafted with a core theme of empowering an exceptional e-payment experience to consumers. Its vision statement was aimed at empowering every Indian with access to a bouquet of e-payment options that are safe, secure, convenient, quick and affordable. Over the past three years, the RBI has made significant efforts in enhancing digital payments adoption across the country, especially while addressing the challenges arising from the Covid-19 pandemic.



The payment ecosystem witnessed the RBI introducing a number of innovative initiatives like benchmarking our payments system, offering regulatory sandbox, facilitating small value digital payments in offline mode, enhancing contactless cards (NFC) transaction limit to ₹5000, issuing framework for processing of e-mandates for recurring online transactions, issuing guidelines on regulation on Payment Aggregators and Payment Gateways (PA / PG), tokenization of card transactions, permitting card on file Tokenization Services, operationalization of Payments Infrastructure Development Fund (PIDF) among others.

The Government of India too is backing the idea of creating a less-cash society. In December 2021, the Union Cabinet approved a ₹1,300-crore incentive scheme to promote digital transactions using UPI and RuPay debit cards. The FM in the FY23 Budget speech articulated that their focus is to promote the use of payment platforms that are economical and user friendly. The FM also highlighted that the financial support for digital payment ecosystem of ₹1,500-crore announced in the previous Budget will continue in 2022-23.

While the RBI and the Government have been continuously encouraging the digital payment sector to ensure that the benefits of digital banking reach every nook and corner of the country in a consumer-friendly manner, the industry players including banks, technology providers, processors, FinTechs among others have been leveraging technology and innovation to make this happen.

As a result, consumers are embracing digital payments like never before. While the industry has been successful in creating habit-forming bouquet of e-payment options like UPI, Cards, PPIs and emerging payment modes like Bharat BillPay, NETC FAST tags among others, the acceptance infrastructure is now gradually sprouting.

Worldline is partner to many banks, financial institutions and all top e-commerce giants facilitate services to over 1.5 million merchant touchpoints across 5000 towns and cities in India, South Asia / Middle East. Powered by about 2000 talents spread across 12+ offices in the country, it is committed to the cause of creating innovative, scalable and cost-effective acceptance solutions for the ecosystem.

We are pleased to share the 'Annual Digital Payments Report' covering interesting insights by analysing transactions available in public databases as well as transactions processed by us in 2021 (Jan – Dec). In addition, we share our perspective on how Artificial Intelligence will shape the payments space in the coming years.

Deepak Chandnani
Chairman, Worldline South Asia & Middle East

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Artificial Intelligence Driving Digital Payments

As far as the payments space (payments for goods and services) is concerned, AI has primarily been deployed in transactions monitoring engines (for fraud), automating workflows and processes, chatbots for customer service and to some extent KYC processes. There have been instances of AI deployment in stores such as Amazon Go but that has been in a small(ish) scale and not necessarily deployed across the board, but it is potential forerunner of things to come.

However, the real leap in the application of AI in the field of payments will come when it starts making fully autonomous choices on behalf of buyers of goods and services. It is already happening in a small way with IOT devices.

A recent white paper by Worldline (**The IOT Payment Revolution: The Future of Autonomous and Invisible Transactions**) highlights how this is set to grow in a large way in the coming years across multiple years. The paper shows how the confluence of constantly improving AI, independent rise in people preferring to pay digitally and the increase of IOT enabled devices is leading to the rise of autonomous payments. Why IOT devices? They are going to be what really push consumer digital payments onto a different plane. Why AI? AI is going to be making decisions on behalf of the buyer albeit in a safe and secure manner.

In the paper, AI along with blockchain are going to be the key technology enablers for IOT payments. They write: “IoT devices collect large amounts of data that can fuel AI machine learning algorithms and neural network systems to predict consumer behavior. Extensive training on user behavior and the transactional context is needed to effectively implement the capability to execute truly autonomous payments on behalf of and with the full confidence of a human user.” To be clear, AI is not some dystopian technology running amok; it is there to assist buyers.

According to the authors, there are 4 levels to fully autonomous payments;

1. **Level 0** (Informational) – The device has permission to access a user’s bank account. The outcome of such a transaction is only to provide information regarding the permissible data available in this bank account around payments. Eg: voice assistant
2. **Level 1** (Permissioned) – The device must request the explicit consent of the user before triggering a payment. Payment permission must be granted by authentication means (e.g., biometric or non-biometric). Eg: Tolls, connected appliances
3. **Level 2** (Conditional) – The device makes a payment automatically (without asking the explicit consent of the user) under pre-defined deterministic conditions set by the user to trigger the payment. Eg: smart printer ordering ink
4. **Level 3** (Fully Autonomous) – The device conducts a payment automatically using a combination of pre-defined deterministic conditions (as per Level 2) and, additionally, uses adaptive behaviors of the device depending on the context. Eg: smart fridge ordering

While there are obviously multiple conditions that should be met for autonomous transactions to happen such as frictionless payments as well as trust, security etc, it is clear that Artificial Intelligence is set to grow at a rapid pace changing the face of payments in a positive manner.

Sunil Rongala

Senior Vice President – Strategy, Innovation & Analytics

<https://worldline.com/content/dam/worldline-new/assets/documents/whitepapers/autonomous-payment.pdf>

2021 in Review

We have analysed transactions available in public databases as well as transactions processed by us in 2021 (January - December) and derived some unique insights.

WORLDLINE 

Indian Payments Landscape

937.7 million

Debit cards in circulation

68.9 million

Credit cards in circulation

259.7 million

PPI cards in circulation

2382.9 million

PPI wallets

5.49 million

Point-of-Sale Terminals

144 million

BQR

How India Pays?

Average Ticket Size of payment transactions analysed for December 2021

₹ 4122

Credit cards

₹ 1804

Debit cards

₹ 421

Prepaid cards

₹ 2650

UPI P2P

₹ 786

UPI P2M

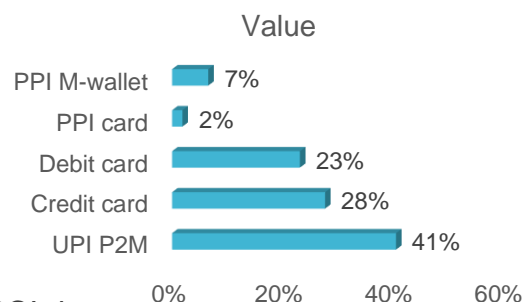
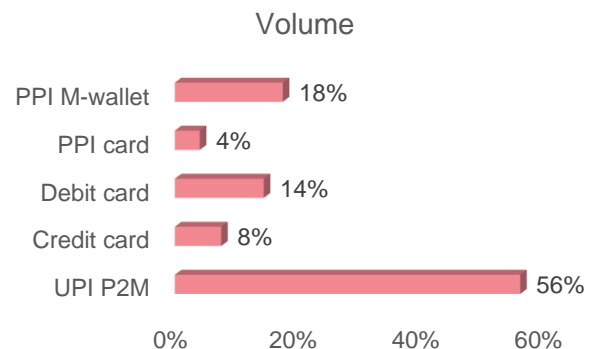
₹ 375

Mobile Wallets

In 2021, combined digital payments volume and value through Cards, PPIs (mobile wallets and prepaid cards) and UPI P2M transactions was 28.43 billion and INR 32 trillion respectively.

UPI emerged as the most preferred payment mode among consumers with a P2M market share volume of 56%. while its share of the value of transactions was 41%.

It is quite evident that cards dominate the merchant acceptance payments landscape and contribute for a good chunk of the pie with 26% transactions in volume and 53% in value.

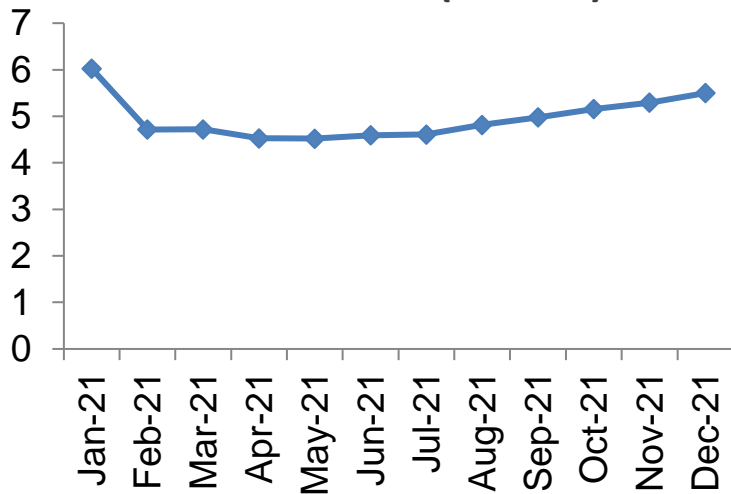


Merchant Acquiring

The POS terminal deployment has seen a steady growth throughout the year.

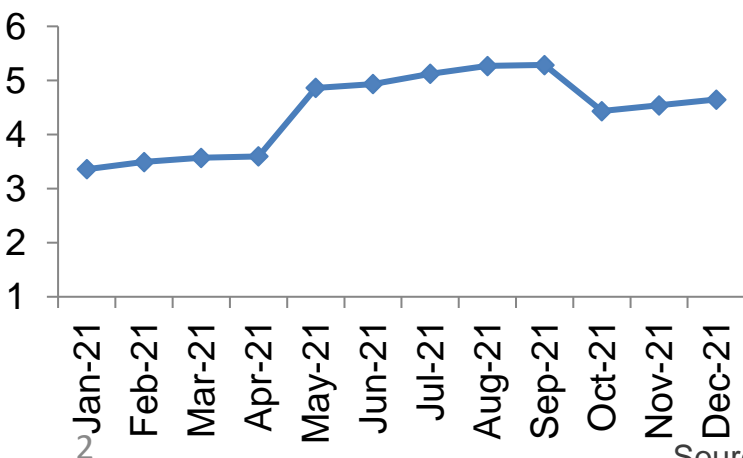
As of December 2021, total number POS terminal deployed by merchant acquiring banks were 5.49 million, up by over 16% after the POS terminal base witnessed correction in numbers between January and February 2021; the RBI included a more accurate POS terminal deployment count.

POS Terminals (million)



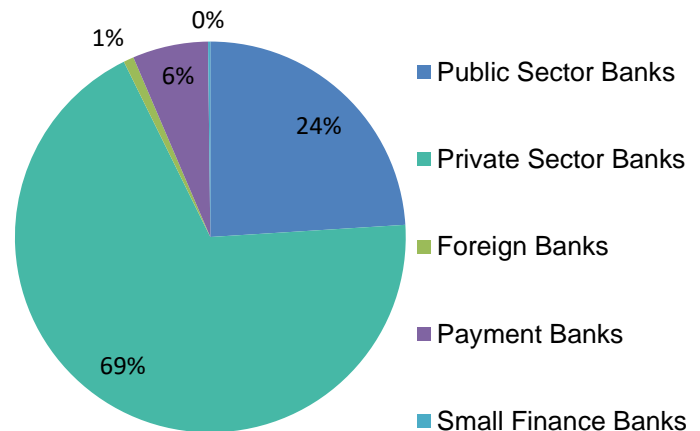
As of December 2021, total number of Bharat QRs were 4.65 million, a 45% rise as compared to December 2020.

Bharat QR (million)



One of the major factors contributing to the growth of physical payments acceptance ecosystem was the Payments Infrastructure Development Fund (PIDF) Scheme by the RBI. As of September 2021, the number of physical payment acceptance devices deployed under the PIDF Scheme were 0.245 million while digital devices were over 5.53 million.

Overall, Private sector banks represent about 69% of the POS terminal market while Public sector banks account for 24%. Payments banks accounted for 6% market share, and foreign banks continue to represent 1% share.

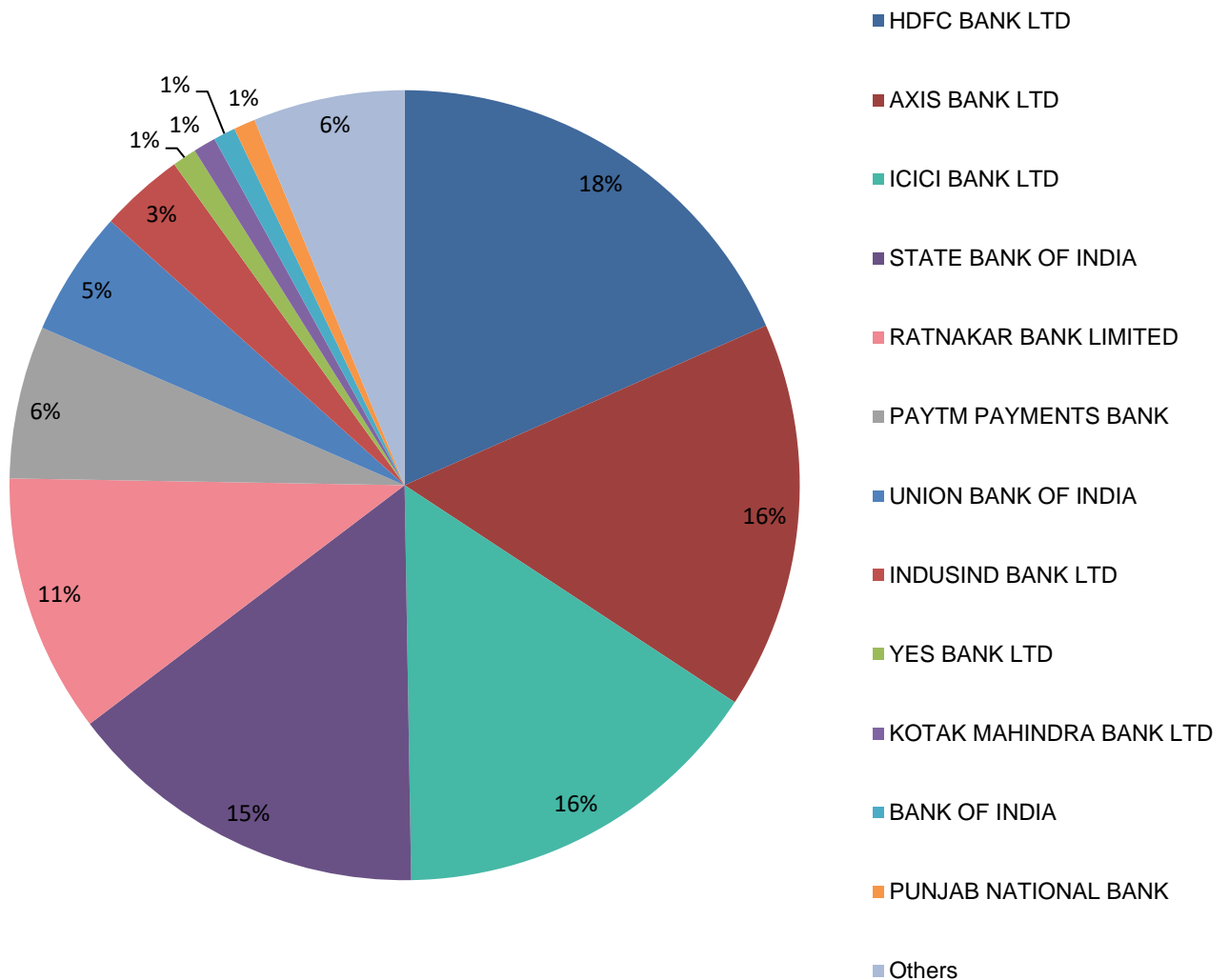


Merchant Acquiring

Top POS deployers:

HDFC Bank, Axis Bank, ICICI Bank, State Bank of India, RBL Bank, Paytm Payments Bank, Union Bank of India are the top acquiring banks with significant market share in terms of POS deployment.

By the end of 2021, Axis Bank witnessed growth of over 77% as compared with previous year in terms of POS market share while Paytm Payments Bank emerged to be amongst the top banks deploying POS terminals.

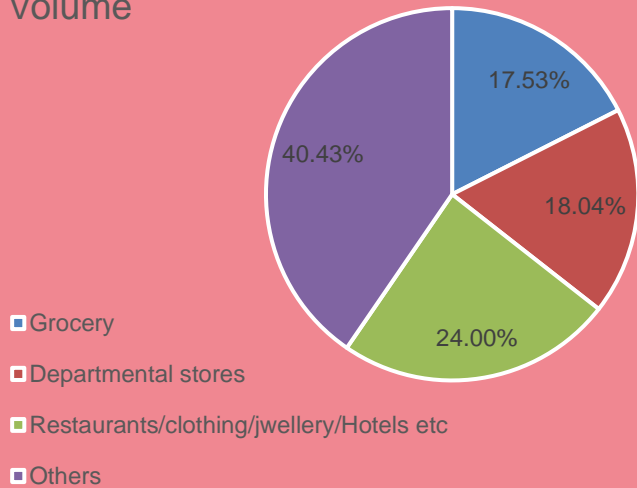


Worldline in India Insights

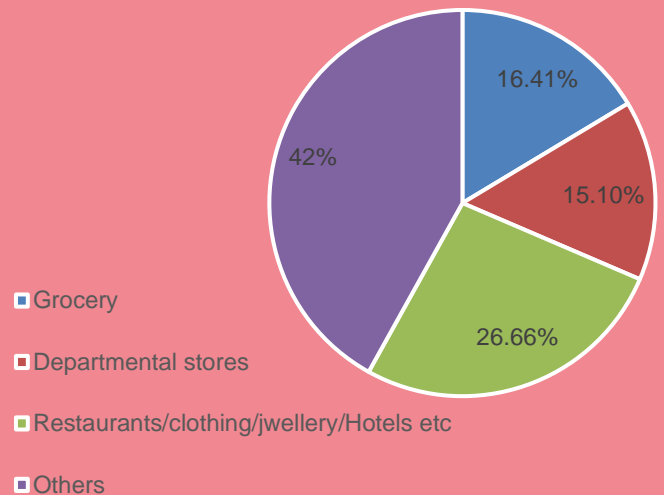
In 2022, frequently visited physical merchant categories like grocery stores, restaurants, clothing and apparel, pharmacy and medical, hotels, jewelry retail, specialty retail, household appliances and departmental stores together accounted for over 60% in terms of volume and about 58% in terms value.

October and December were the months with highest number of transactions in volume and value owing to the festive quarter and Covid19 relaxations observed across the country.

Volume

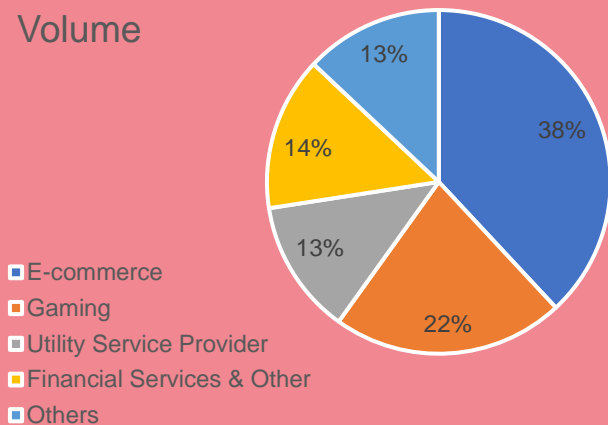


Value

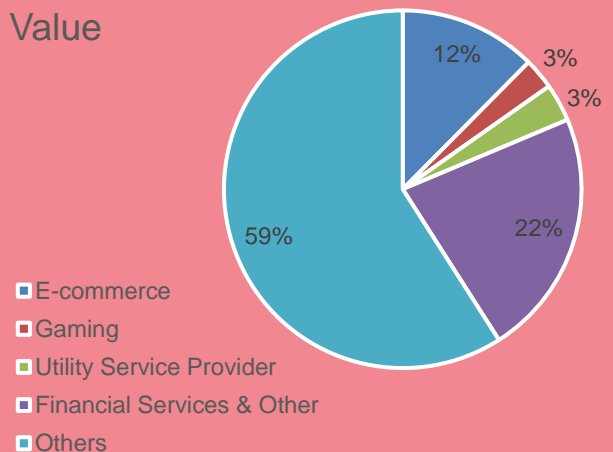


In the online space, e-commerce (shopping for goods and services), gaming, utility & financial services contributed to over 87% transaction in terms of volume and 41% in value in 2021.

Volume

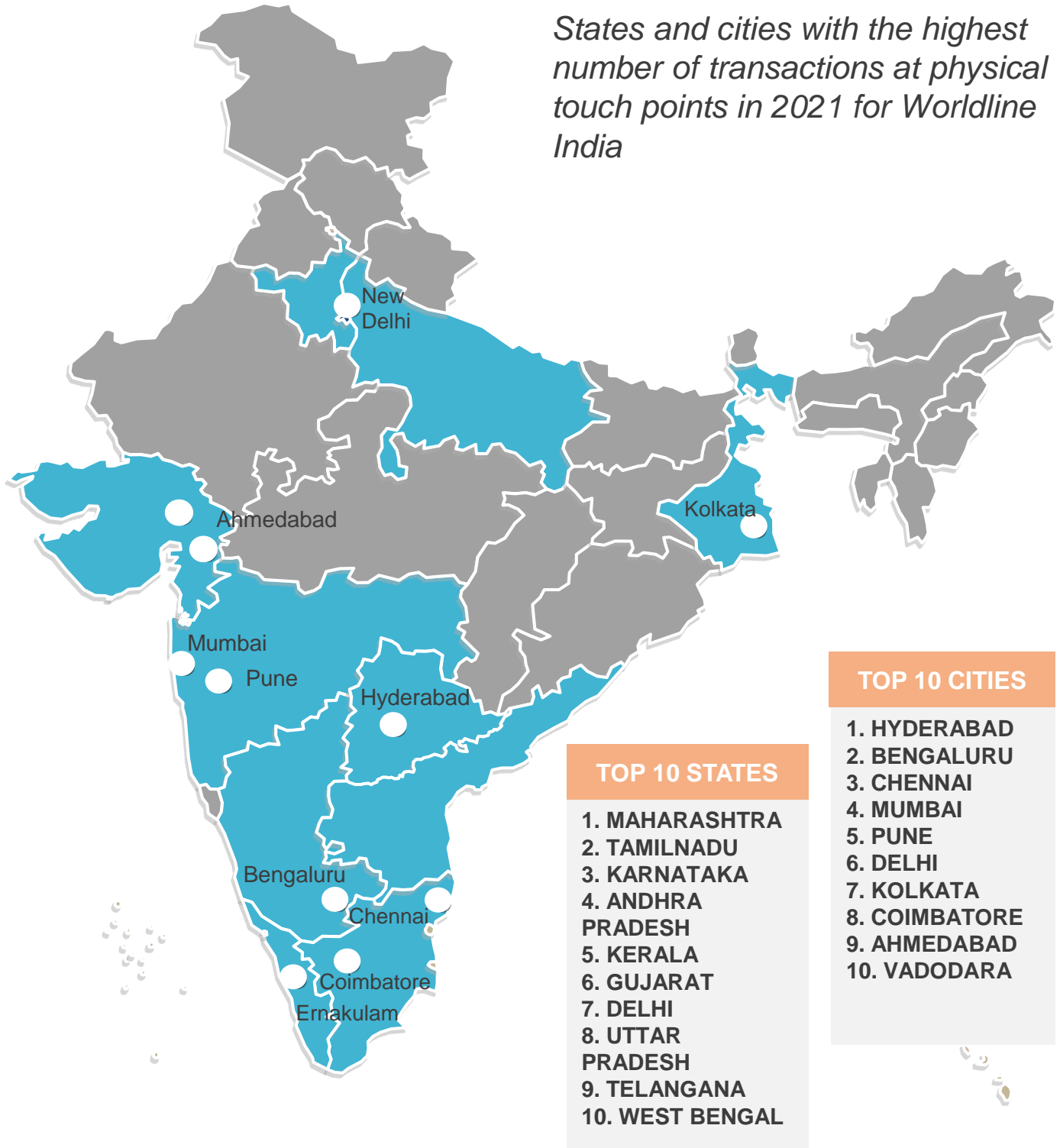


Value



Worldline in India Insights

States and cities with the highest number of transactions at physical touch points in 2021 for Worldline India



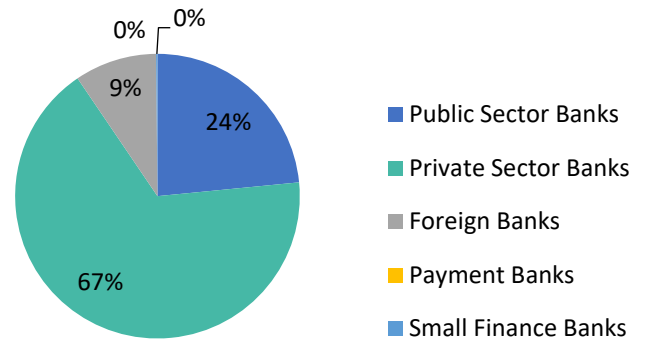
Card Issuance

The total number of cards in circulation breached the one billion mark in 2021 with 1006.7 million cards recorded as of December 2021.

Outstanding credit cards increased by 14% from 60.39 million in December 2020 to 68.95 million in December 2021 while outstanding debit cards increased by 6% from 886.41 million to 937.75 million during the same period. It is however not clear how many of these cards, particularly debit, are active and whether they are being used for payments and not cash withdrawals.

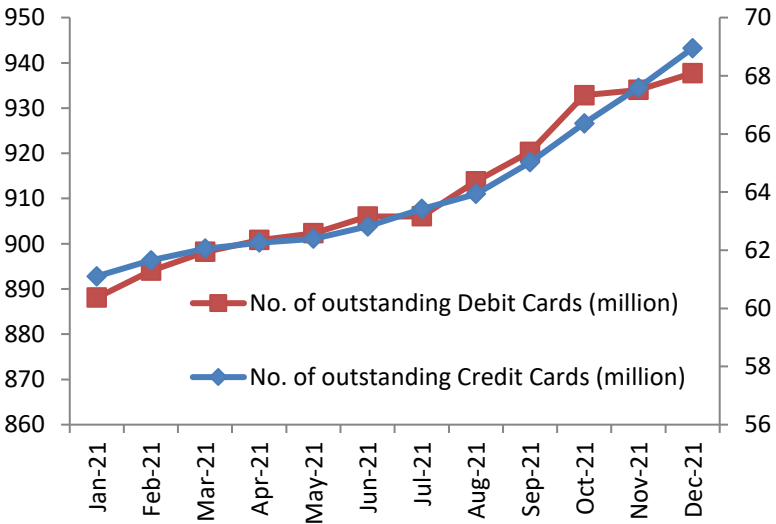
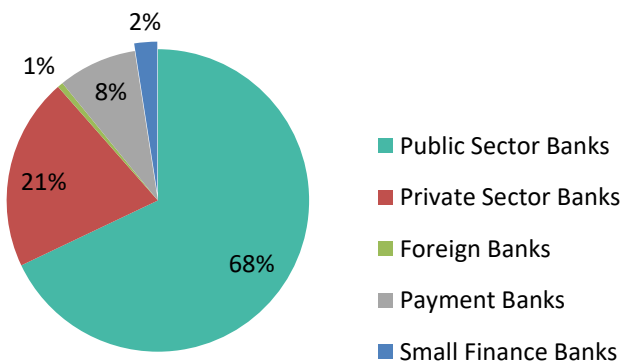
In the Credit card market, Private sector banks represent 67% of cards issued while Public sector banks account for 24%.

HDFC bank, SBI and ICICI bank were the Top banks to issue Credit cards. HDFC Bank emerged as top credit card issuer as soon as the RBI lifted the ban pertaining to issuing new credit cards after 8 months.

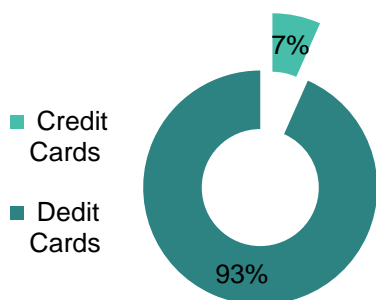


In the Debit card market, Private sector banks accounted for 21% while Public sector bank accounted for 68%; a not altogether surprising number since public sector banks have been at the forefront of opening Jan Dhan accounts etc.

Issuance of RuPay cards under PMJDY scheme also accounted for increase in Debit card issuance. In 2021, 68 Million Debit cards were issued under the scheme. **SBI, BOB and Paytm Payments Bank were the Top banks to issue Debit cards.**



Out of the total cards in circulation, credit cards represented a 7% market share while debit cards accounted for 93%.

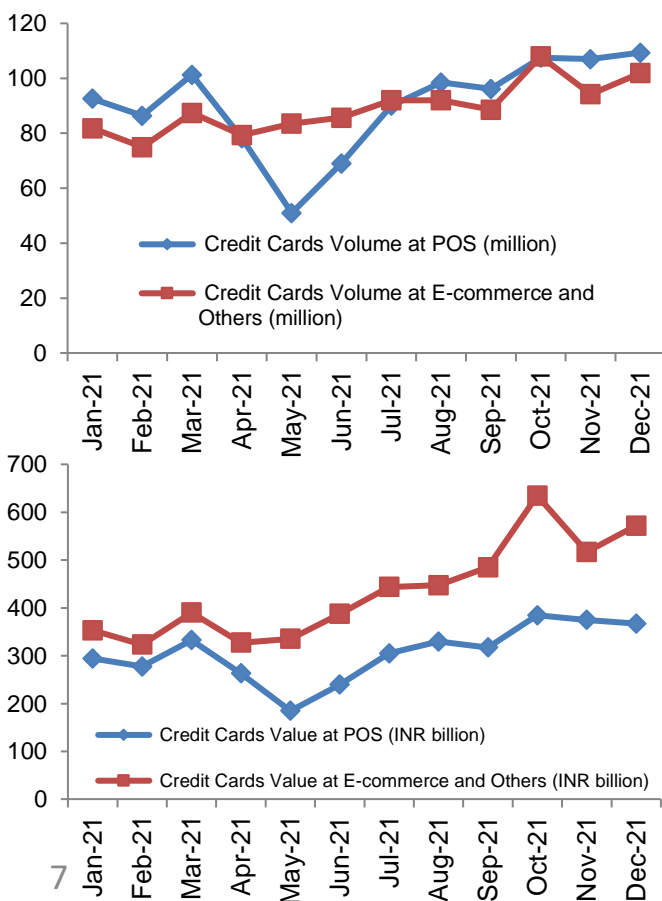


Card Issuance

Transaction analysis of Credit cards

In 2021, Credit cards volume and value stood at 2.15 billion and INR 8.88 trillion respectively. The number of credit card transactions at POS accounted for 1.08 billion while e-commerce was 1.06 billion. In terms of value, consumers transacted INR 3.67 trillion at POS and INR 5.21 trillion at e-commerce via credit cards in 2021.

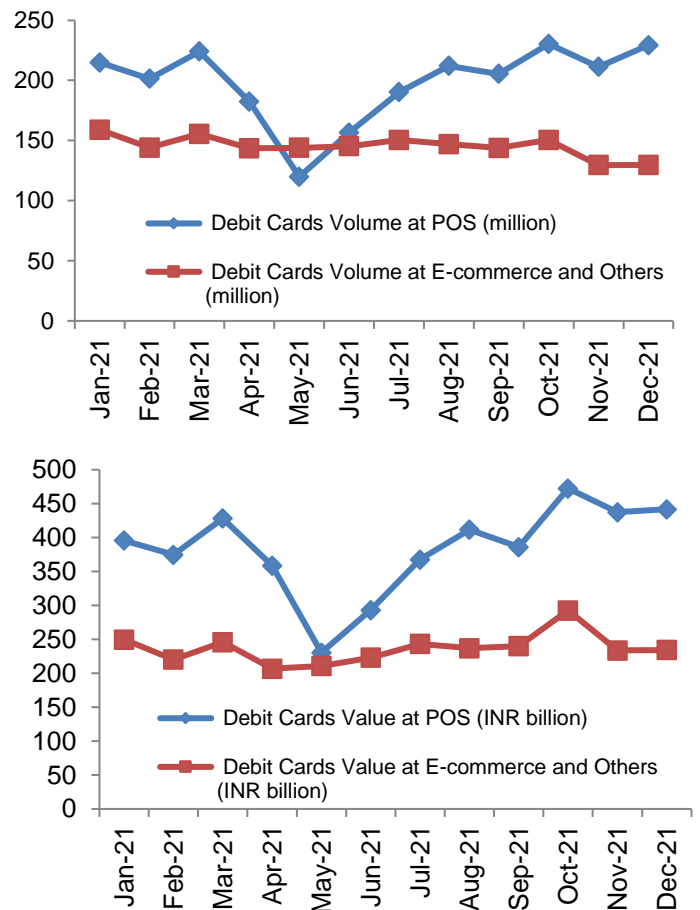
Even though credit cards volume at POS and e-commerce are nearly equal, value of e-commerce transactions is significantly higher as compared with value of transactions at POS. This is in line with the general trend of transactions moving from the physical to the digital space since the start of the pandemic. In 2021, the Average Ticket Size of credit cards was INR 4122 as compared to INR 3653 in 2020.



Transaction analysis of Debit Cards

In 2021, debit card transactions volume and value stood at 4.12 billion and INR 7.42 trillion respectively. Out of the total debit card volume, transactions at POS were 2.37 billion and e-commerce were 1.75 billion. In terms of value, INR 4.59 trillion was processed at POS terminals while INR 2.83 trillion was processed at e-commerce via debit cards.

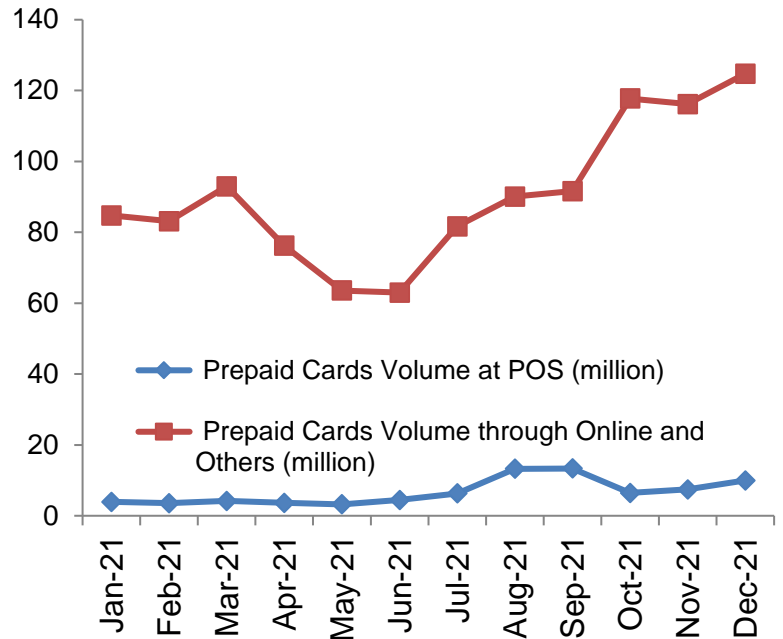
The Average Ticket Size of debit cards in year 2021 was INR 1804 against INR 2568 in 2020. Though the Average Ticket Size and transaction value of credit cards are higher than debit cards, the latter remain the preferred mode of payment among consumers thanks to its huge outstanding base. An interesting point to note is that credit cards seem to be preferred more than debit cards when it came to spending online.



Prepaid Payment Instruments

As of December 2021, there were 2.64 billion Prepaid Payment Instruments in the country.

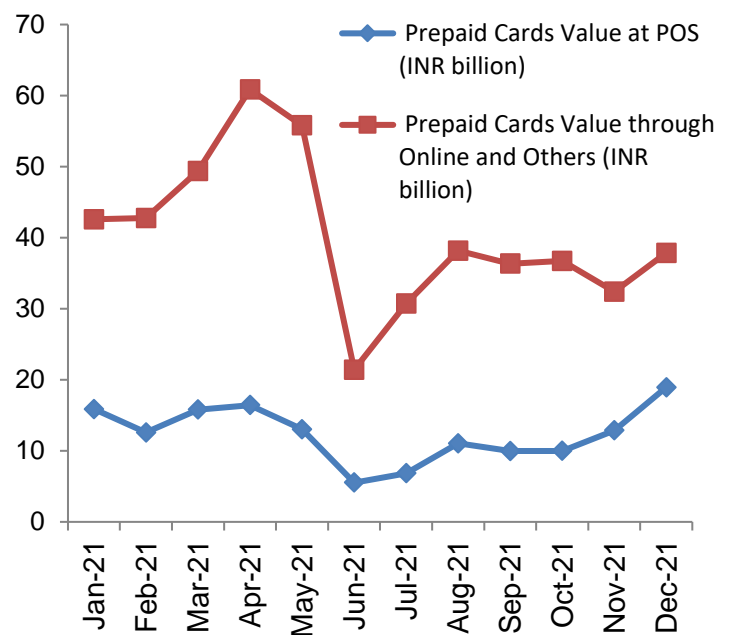
Of this, 259 million comprised of prepaid cards and 2.53 billion were mobile wallets. During 2021, there was a 48% increase in the number of prepaid cards while number of wallets increased by 22%. The rise in prepaid cards has been because of the entrants of fintechs who have been issuing cards on prepaid BINs and have gained significant traction in the past few quarters. Total spends through PPI instruments increased by 25% during the year 2021.



Transaction analysis of Prepaid Cards

In 2021, total prepaid cards transactions volume and value was 1.16 billion and INR 633.67 billion respectively.

Its transactions at POS accounted for 80 million while transactions through ecommerce were 1.08 billion. In terms of value, prepaid cards at POS processed transactions were worth INR 148.7 billion while INR 485 billion was processed through ecommerce.



Prepaid Payment Instruments

Transaction analysis of Mobile Wallets

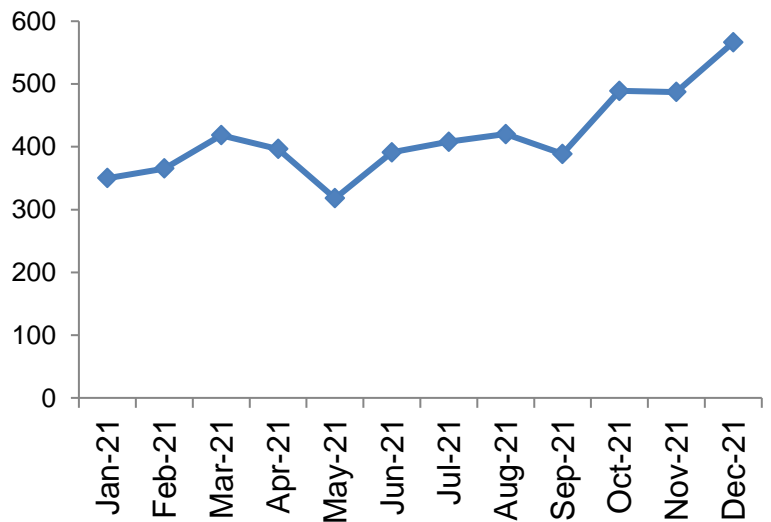
In 2021, the number of transactions through mobile wallets was 5 billion and its value was INR 2.1 trillion.

This includes purchase of goods and services and fund transfer through wallets. Transactions through wallets are growing steadily.

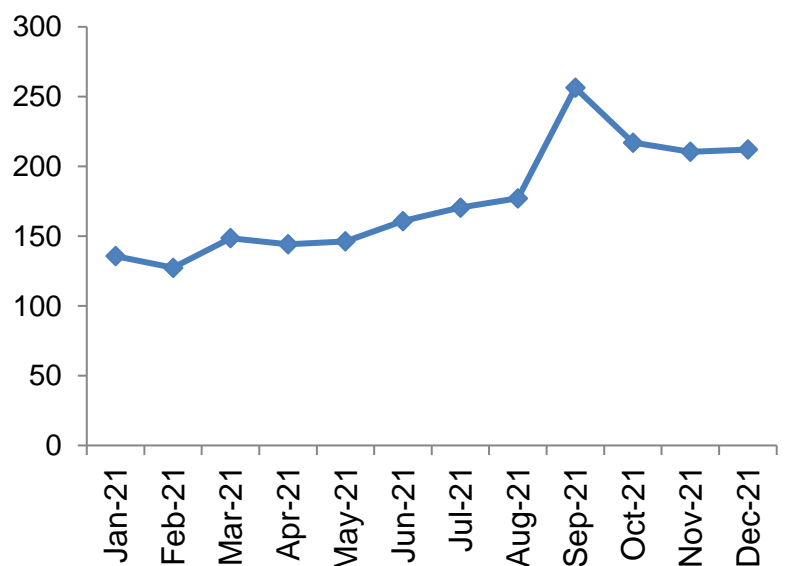
It recorded a 62% increase in volume throughout the Year while its value of transactions grew by 56 % as compared with January 2021.

On August 27, 2021, the RBI issued Master Directions on Prepaid Payment Instruments (PPIs) and updated the same on November 12, 2021.

m-Wallet Volume (million)



m-Wallet Value (INR billion)

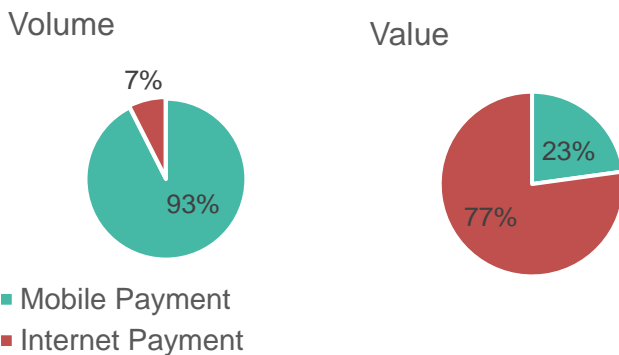


Mobile and Internet Based Payments

Number of transactions being done via mobile are rising, owing a large number of mobile subscriptions of over 1.18 billion.

In terms of volume, Mobile based payments comprise of 93% and Internet based payments stands at 7%.

However, when it comes to transaction value, mobile based payments comprise of 23% while internet based payment stands at 77%.



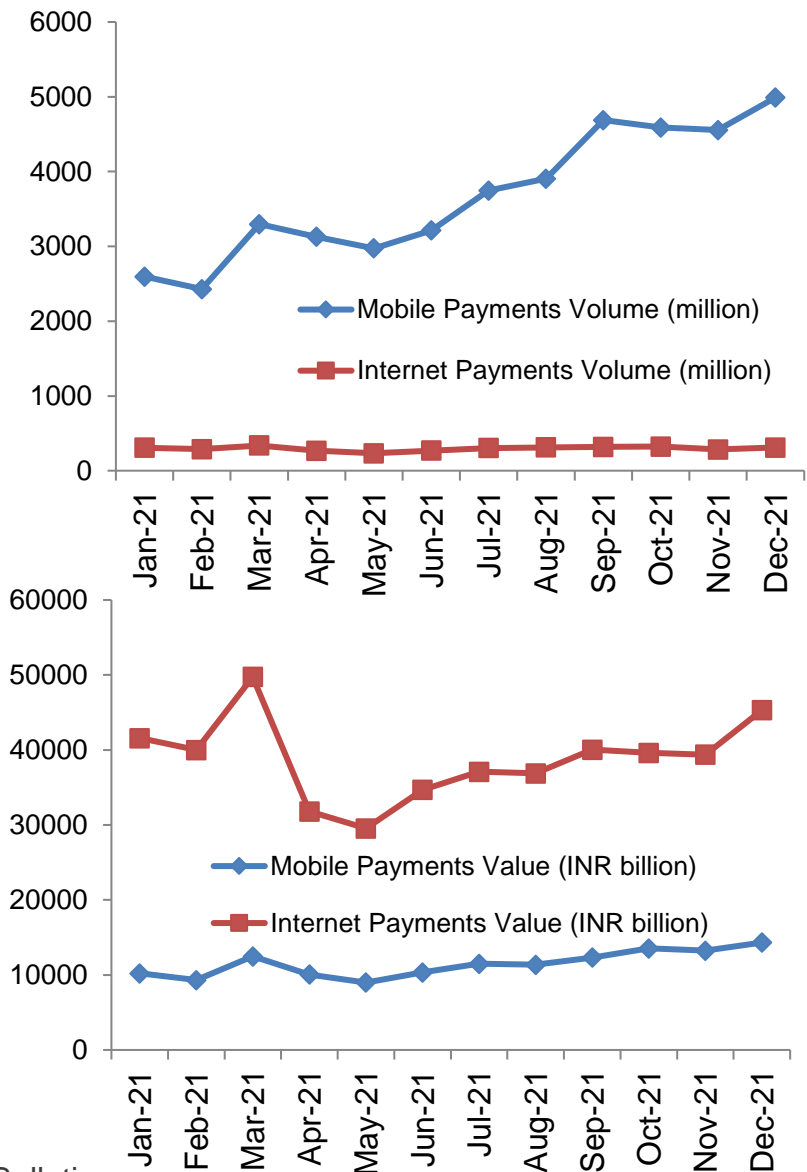
Transaction analysis of Mobile payments

Mobile app based transactions recorded a 106% growth in volume while its value witnessed over 82% jump against previous Year 2020. In 2021, Mobile based transactions recorded a volume of 44.10 billion and INR 137.41 trillion in value. Out of the total mobile based payments volume, 4.06 billion were intra-bank transactions and 40.02 billion were inter-bank transactions. In terms of value, mobile payments registered intra-bank transactions of INR 24.65 trillion while inter-bank value was INR 112.76 trillion.

Transaction analysis of Internet payments

In 2021, Internet based transactions recorded volume of 3.56 billion and INR 456.67 trillion in value. **Internet based payments volume and value registered an uptick of 14% and 23% respectively as compared with previous year.**

Out of total internet-based payments volume, 713.13 million were intrabank transactions and 2.85 billion were interbank transactions. In terms of value, internet payments accounted for INR 214.12 trillion intra-bank transactions and INR 251.55 trillion inter-bank transactions.

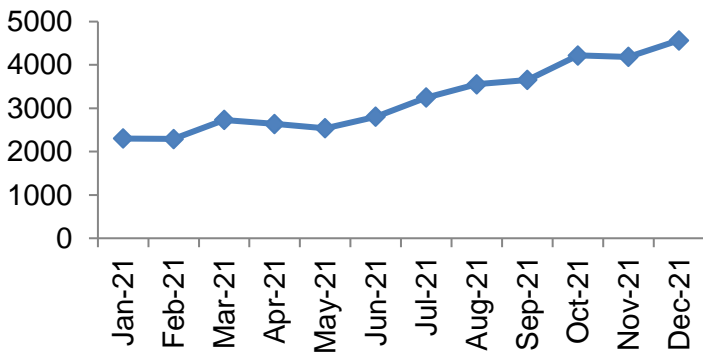


Unified Payments Interface

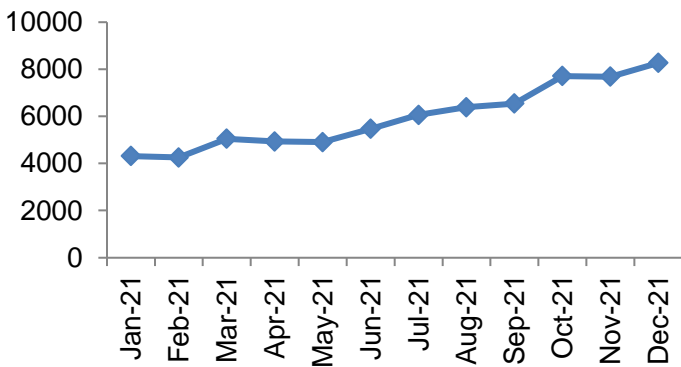
In 2021, UPI clocked over 4.57 billion transactions in volume and breached INR 8.2 trillion in terms of value. It

recorded 105% increase in volume and 111% increase in value as compared to 2020. In the last quarter of 2021, UPI recorded close to 100% increase in volume and 98% increase in value as compared with the same period of previous year.

UPI Volume (million)

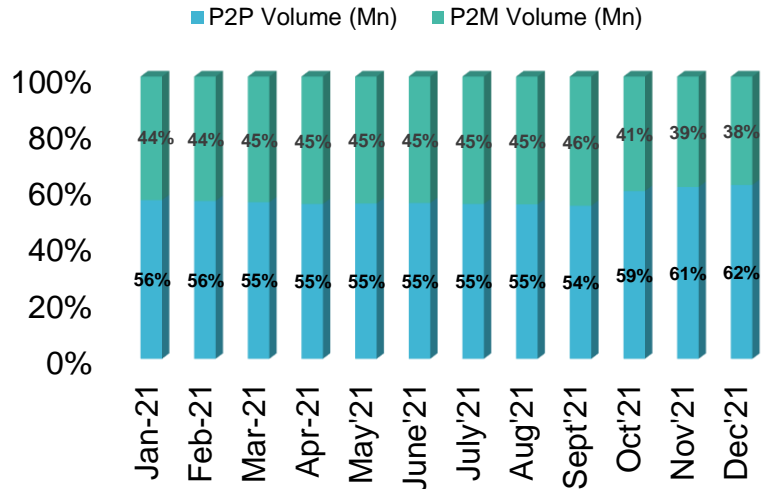


UPI Value (INR billion)

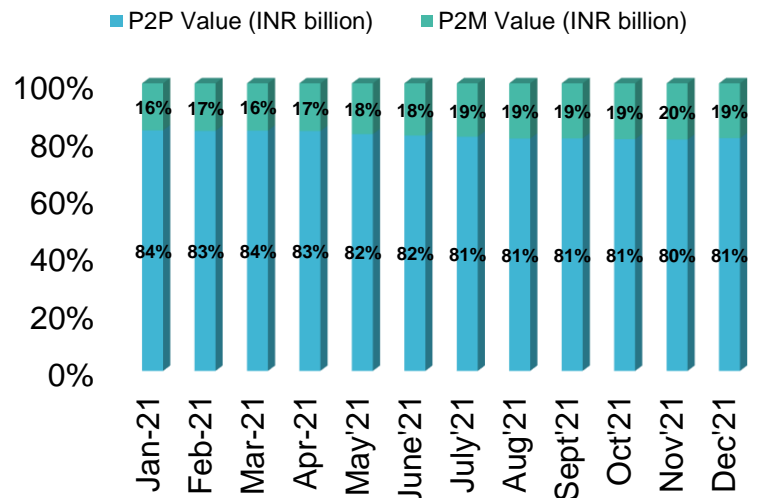


In December 2021, out of total UPI volumes, 62% transactions were P2P (Person-to Person) while 38% were P2M (Person-to Merchant). Average Ticket size of UPI P2M in 2021 was INR 786. 75 banks joined UPI ecosystem in 2021 bringing the total number of banks providing UPI services to 282. NPCI's BHIM App was available for customers of 216 banks.

UPI Volume (Million)



UPI Value (INR billion)



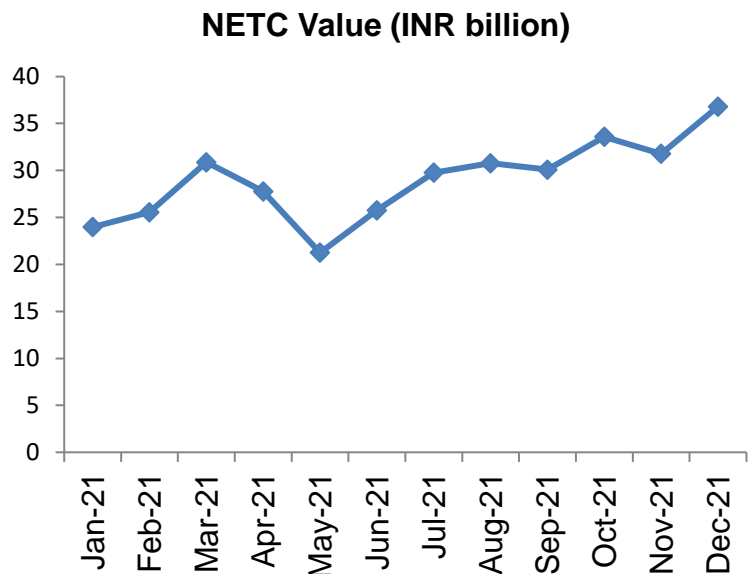
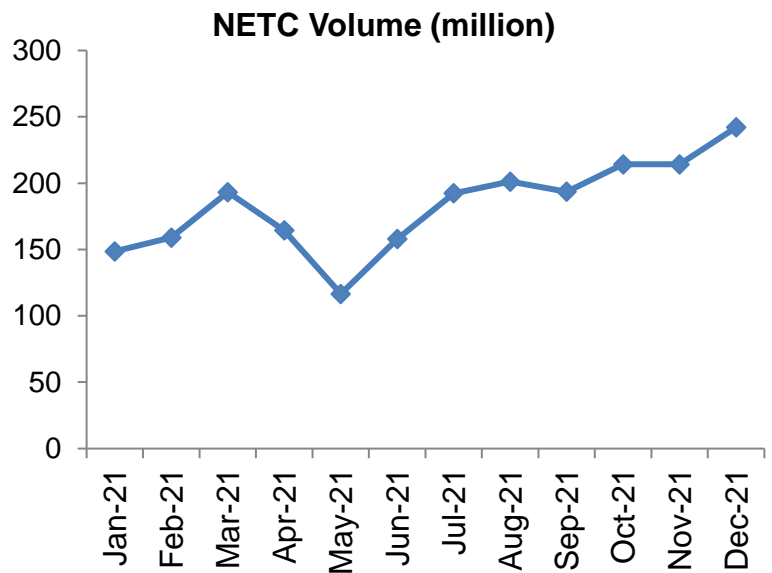
BHIM app downloads stood over 185 million as of October 29, 2021. SBI, HDFC Bank, Bank of Baroda, ICICI Bank and Union Bank were the top UPI Remitter banks in December 2021 while Paytm Payments Bank, State Bank of India, YES Bank, ICICI Bank and Axis Bank were the top beneficiary banks w.r.t UPI volumes. In December 2021, NPCI enhanced per transaction value limit of UPI to INR 5 lakh for Retail Direct Scheme and UPI based ASBA IPO. It is pertinent to note that UPI P2M transactions has significantly eaten into the share of card and other payment modes.

National Electronic Toll Collection

In 2021, NETC processed about 2.2 billion transactions worth INR 348 billion. The transactions volume increased by 97% while value increased by 77% as compared to the previous year 2020.

NETC FASTag continued to grow and facilitate electronic payments at the parking plazas across malls, metro stations, hospitals, airports among others apart from acceptance across national and state highways.

As of December 2021, total number of banks live with NETC FASTag were 35 while about 44.22 million NETC FASTags have been issued since the inception of NETC program.

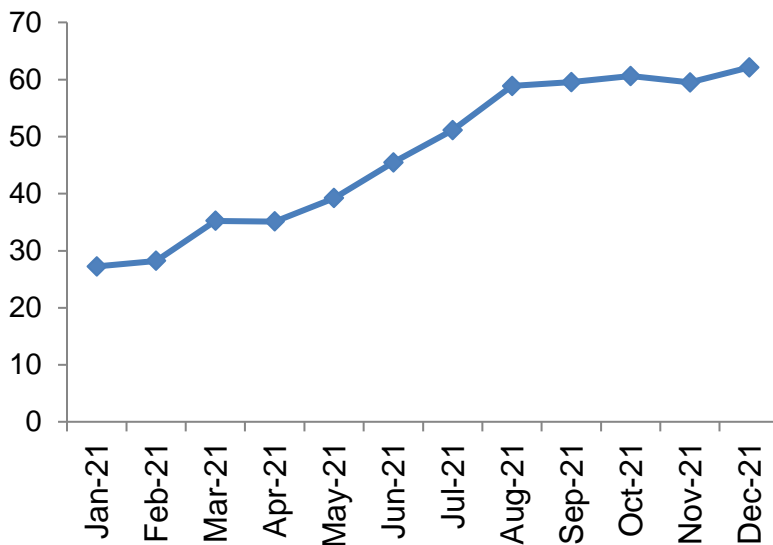


Bharat BillPay

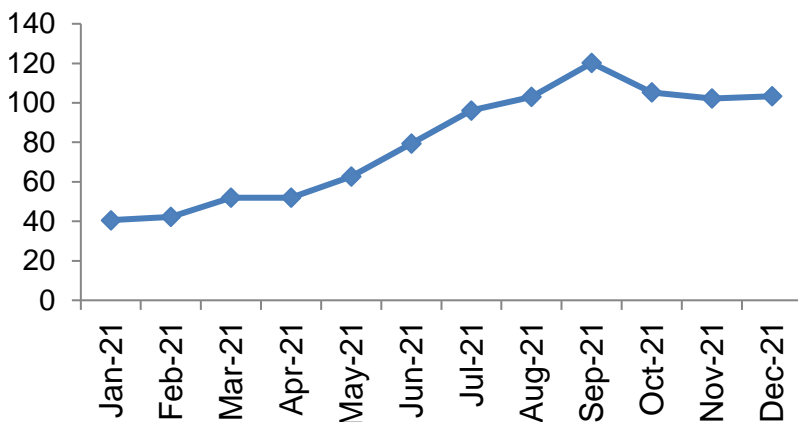
The transactions volume passing through Bharat Bill Payment Central Unit (BBPCU) in 2021 stood at 562.34 million while the transactions value was INR 959.15 billion.

It registered a growth rate of 144% and 171% in volume and value respectively as compared with previous year.

Bharat BillPay Volume (million)



Bharat BillPay Value (INR billion)



Early this year, MobiKwik launched ‘ClickPay’ for its customers, in collaboration with NPCI Bharat BillPay Ltd. (NBBL). This feature enables MobiKwik customers to pay recurring online bills (such as mobile, gas, water, electricity, DTH, insurance, and loan EMIs) by eliminating the need to remember individual bill details and due dates.

Also, NPCI has introduced a unique functionality called ‘Unified Presentment Management System’ (UPMS). NBBL through UPMS will enable the customers to set up standing instructions – from any channel and for any mode on their recurring bill payments. The bills will be automatically fetched from the billers and presented to customers for their action, in terms of auto-debit and bill payment management. It is expected that all AMCs, Insurance companies, and Educational Institutes will benefit from this platform.

NPCI Bharat BillPay Ltd. is a wholly-owned subsidiary of National Payments Corporation of India. Came into effect from April 1, 2021, NBBL offers 20,000+ billers across multiple bank and non-bank channels.

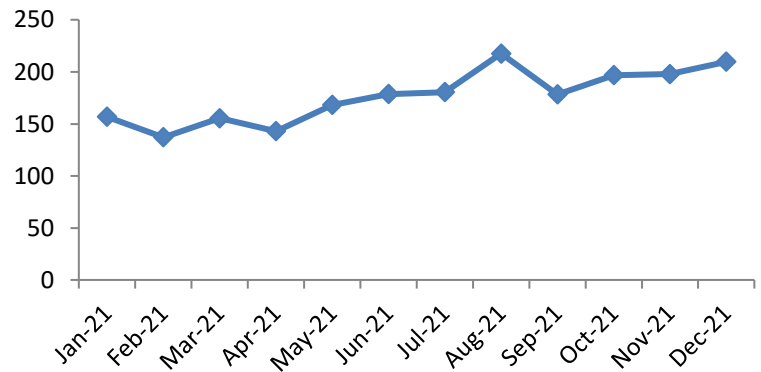
Aadhaar Enabled Payment Service

In 2021, AePS transactions recorded a substantial volume of over 2.12 billion transactions, registering about 23% growth over 2020. It processed transactions worth INR 2.85 trillion, an increase of 44% over 2020.

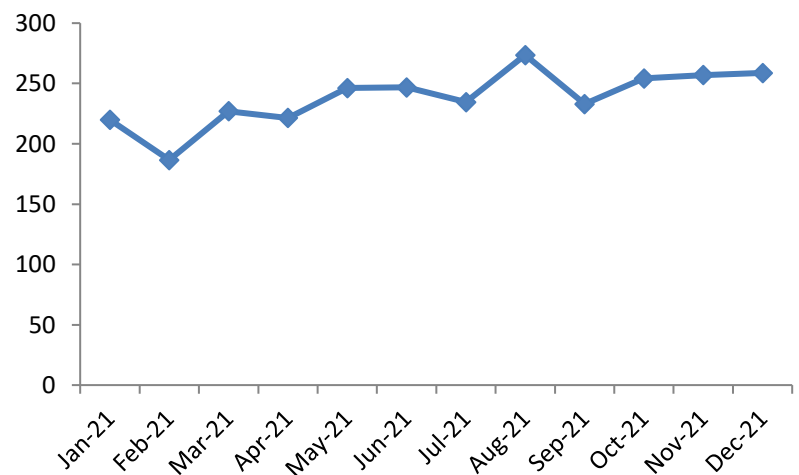
In 2021, NPCI implemented transaction limits and two-factor authentication (2FA) for acquirers and issuers. It also implemented measures like capturing correct card acceptor identification code and card acceptor name and issued advisories on best practices for Business Correspondence – Acquiring Banks and Issuing Banks.

AePS continue to facilitate government Direct Benefit Transfers to beneficiaries during the quarter and several banks provided banking services at customer’s doorstep through Banking Correspondents.

AePS Volume (million)



AePS Value (INR billion)



About Worldline

Worldline [Euronext: WLN] is the European leader in the payments and transactional services industry and #4 player worldwide. With its global reach and its commitment to innovation, Worldline is the technology partner of choice for merchants, banks and third-party acquirers as well as public transport operators, government agencies and industrial companies in all sectors. Powered by over 20,000 employees in more than 50 countries, Worldline provides its clients with sustainable, trusted and secure solutions across the payment value chain, fostering their business growth wherever they are. Services offered by Worldline in the areas of Merchant Services; Terminals, Solutions & Services; Financial Services and Mobility & e-Transactional Services include domestic and cross-border commercial acquiring, both in-store and online, highly-secure payment transaction processing, a broad portfolio of payment terminals as well as e-ticketing and digital services in the industrial environment. In 2020 Worldline generated a proforma revenue of 4.8 billion euros. [worldline.com](https://www.worldline.com)

Worldline India Pvt. Ltd., a wholly-owned subsidiary of Worldline, is partner to over 20 banks and work with all top e-commerce giants. In India, Worldline covers the whole payment value chain and end-to-end processes that facilitate services to over 1.5 million merchants across 5000 towns and cities in India, South Asia / Middle East. Services offered by Worldline in India are in the areas of Merchant Acquiring, VAS, Card Issuance, National Electronic Toll Collection, Risk Mitigation, Reconciliation, Loyalty solutions; and online solutions like NextGen Payment Gateway, Subscription Payments, Payment Orchestration Platform, Online Cross Border Solution, Tokenisation among others. Supported by over 2000 members team, Worldline India is constantly investing in its people and in the latest technologies to increase efficiencies, drive innovation and enhance digital payments adoption across the country.



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