Anusandhanvallari
Vol 2026, No.1
August 2026
ISSN 2229-3388

Exploratory India's UPI Phenomenon: A Nationwide Digital Revolution

[1]Ms. E. Anit Maria Lusia, [2]Dr. A. Martin David

[1]Part Time PhD Research Scholar, Madurai Kamaraj University, Tamil Nadu and Assistant Professor Department of Commerce, Thiagarajar College, Madurai-09

[2]Associate Professor and Head, Research Department of Commerce, The American College, Madurai -02

Abstract: To achieve the nation's goals of becoming a prosperous nation by 2047, all citizens must be integrated into a structured financial ecosystem. India has shown success in becoming a more financially inclusive nation through the adoption of digital payments. India is becoming less reliant on cash as digital payments gain acceptance. The digital payment operations are contributing substantially to the rise of commerce as well as trade. UPI is one of India's fastest growing electronic payment options and maintains the most popular in the country. The NPCI developed the Unified Payment Interface, a mobile-based payment system that launched in the fiscal year 2016–2017. It has now evolved into a mechanism for real-time cross-border payments. In February 2023, the RBI announced that eligible G20 visitors could utilize the Unified Payments Interface in India because they would have been issued Prepaid Instruments (PPI) Wallets for use with UPI services at merchant outlets. The wallet can be obtained in three airports they are Mumbai, Delhi, and Bangalore, The Wallet is issued to foreign travellers by two banks and two non-bank organizations. The foremost objective of this research paper is to present an outline of the expansion then achievement of the Unified Payment Interface. The necessary information was gathered from secondary sources such as NPCI product statistics, The Indian Payment Handbook, and the RBI bulletin. The analysis gives an understanding, of the emerging growth of UPI in the digital era.

Keywords: Digital Payment methods, UPI, Digital India, and Mobile applications.

Introduction

The Banking system in India is the base for the economic development of the country, it plays a vigorous part in the growth in addition expansion of the country. The success of a country and the growth of banking sectors are interrelated. In today's economy, banks should be viewed as economic stimulators rather than money exchangers. The prime function of a bank is to bring together deposits from the general public and give them to various business activities.

The Indian Banking sector has observed several changes over the years, and the acceptance of digital technology has been important among them. In the recent period, technological innovations have leads to noticeable improvements in proficiency, quality, efficiency and affordability in the extension of financial services, predominantly in the area of digital lending. Digital modes of payment have grown by leaps and bounds over the last few years.

Information technology has significantly boosted banks' operational efficiency. Automation has significantly decreased human labor, minimized errors, and enhanced overall productivity for routine tasks such as account administration, transaction processing, and document verification. Information technology has altered client interactions and experiences in the banking business. Customers now have 24-hour access to their accounts thanks to internet banking, mobile banking applications, and digital payment options, allowing them to conduct transactions, move funds, and pay bills whenever they want.

Furthermore, IT has facilitated the development of tailored services by scrutinizing consumer data, allowing banks to provide individualized goods and recommendations, hence increasing customer happiness. The technology contributes to the development of digital payment services, the most prominent of which being UPI. In recent years, the number of Unified Payment Interface (UPI) transactions has increased dramatically.

The National Payments Corporation of India launched a trial launch with 21 member banks.Dr Raghuram G Rajan, Governor of the Reserve Bank of India, launched the trial program on April 11, 2016, in Mumbai. Beginning August 25, 2016, banks started to upload UPI-enabled apps to the Google Play store. It is easy for transfer money from one person to another through a mobile application. Payments can be made through an application on a mobile device only. The application that provides Unified Payment Interface features are, PhonePe, Paytm, Google pay, PayiMobile, Axis Pay and Bank of Baroda Unified Payments Interface, and the like.

The growth of United Payment Interface (UPI) transactions is an indicator of the federal government's encouragement of digital transactions. Thus, the Unified Payments Interface continues to lead the digital payment landscape in India.

Abbreviations and Acronyms

NPCI- The National Payment Corporation of India owns, operates, and directs the UPI Network.

UPI- Unified Payment Interface has been termed as a revolutionary product in the payment ecosystem.

PPI- Prepaid Instruments in UPI are digital wallets that let users conserve money and make real-time payments online.

Literature Review:

Dr. Gauri Modwel and Mr. Mayank Trivedi (2024) explored a study titled "The Impact of Unified Payments Interface (UPI) On Financial Inclusion and Economic Development" The primary objective of the study is to identify the ideal features and functionalities of Unified Payments Interface among various segments analysing the impact of Unified Payments Interface into the eliminating of cash transactions and acceptance of digital payments. The study's major findings are that most respondents around 75 per cent have confidence in Unified Payments Interface's major input to economic development is aggressive digital payments and dipping dependence on cash. While some 25 per cent of the respondents concede its part in making transactions more effective, the devastating majority of the sample respondents see digitalization as their primary impact. They conclude that Unified Payments Interface acceptance appears instrumental in development positive evolution within the nation's economic landscape.

Dr.M.N.Prakasha (2023), has done a " A Study on Unified Payment Interface (UPI) Among University Students in Madurai City " The main objective from the study is to know the preference and level of satisfaction towards the Unified Payments Interface services. The primary data is collected through Google Forms from university students of Madikeri City. The sample size for the study is 120 respondents and the analysis is done with the help of percentage analysis. The study's major findings are that Google Pay is the uppermost used app 50.83 per cent followed by PhonePe 34.17 per cent and Most of the sample respondents use UPI apps for fund transfer. The study concluded that Unified Payments Interface is a substantial development of the payment system in relations to cost, ease of use for general public, settlement times and security.

G.Sankararaman and et al (2023) undertook the study titled, " A Study on Users' Opinion towards Unified Payment Interface (UPI) Transactions" The primary goal of the study is to better understand the problems that respondents encountered when utilizing the Unified Payments Interface, as well as the time it took to resolve those issues. According to the study's findings, 45 percent of respondents had payment failure problems while utilizing the Unified Payments Interface, with 27 percent experiencing connectivity troubles. 45 percent of respondents agreed that any issues they encountered while using the Unified Payments Interface were fixed within a day.

Finally, they conclude that the Unified Payments Interface (UPI) currently provides a whopping 47 per cent to India's retail clearing and settlement systems.

Ms Manisha Tripathi and et al (2024) undertook a study titled “Impact of Growth of Unified Payments Interface on the Indian Economy”. The purpose of this analysis is to focus on the specifics of Unified Payments Interface adoption and its effects, as well as to provide insights that can be used to improve future digital payments and financial inclusion plans and policies. According to the study's findings, various perspectives on the impact of the Unified Payments Interface on financial inclusion highlight the complexity of the issue and the diverse, contrasting experiences of different parts of the community. While a large portion (46.5%) believes that Unified Payments Interface has increased financial inclusion, a notable fraction (28.1%) believes there is no significant impact or, a decrease, and this portion of respondents could be the ones representing those who are not happy/comfortable with using Unified Payments Interface, and the reasons for the discomfort, such as lack of awareness or lack of access, could be leading to their exclusion from the financial la. Finally, the detailed analysis of the Unified Payments Interface (UPI) demonstrates its critical significance in altering the Indian economy's financial landscape.

Manoj Kumar Goyal and Dr. Nikhil Monga (2022) “An Empirical Study on Perception and Attitude of Consumers Towards Unified Payment Interface (UPI)” The primary objectives of the study are to detect the reasons affecting the insight and attitude of consumers towards Unified Payment Interface in India and to analyse the perception of consumers towards Unified Payment Interface (UPI). They defined H1: Unified payment interface services are only available in cities and metros, making the situation impossible towards expand into rural areas. Primary data for this study was acquired from 100 consumers in India's city, semi-urban, and rural areas. Respondents were identified using a convenience sampling technique. The mean value found for the urban population exceeds that of the rural and semi-rural populations. In addition, 85 per cent of the semi-rural population now has access to e-banking. As a result, the hypothesis "Unified Payment Interface services are only available in cities and metros, and it's difficult to penetrate rural areas" is refuted. The study discovered a significant relationship between location and awareness level towards a unified payment interface.

Prof. Tanvi A. Kothiand Prof. Vinit A. Upadhyay (2023) conducted an empirical study on, "Consumer Perception towards Unified Payments Interface with reference to Speed of Payment and Control over Payment", The primary goal is to examine the impact of the Unified Payments Interface on retail payments. The survey, which was done using a Google form, yielded 116 responses from various sections of Mumbai City. It was discovered that payments ranging from Rs. 1 to Rs. 100 were used in the Unified Payments Interface facility. The Unified Payments Interface's success stems from its ability to convert even the smallest retail payments. They stated that it is clear that the Unified Payments Interface has paved the path for the 'Digital India' movement.

Shruti Chaure (2023), made a study on "Enhancing User Experience: Investigating Customer Insights on Unified Payments Interface (UPI) in Pune District, India" The primary purpose of this study report is to gather insights into the customer perception, adoption, and usage patterns of the Unified Payments Interface within the Pune District and the primary data was gathered through structured questionnaires which were distributed among a sample of Unified Payments Interface users through Google Forms. The study was limited to Pune District. The major results of the study are 54 per cent of the sample respondents used Unified Payments Interface payments for Bill payments and recharges and 34 per cent of respondents used Phonepe. The study finally concludes that the results of this survey, customers have a favourable opinion of unified payment interface services. According to the report, most banks in the Pune district do not charge transaction fees for Unified Payments Interface transactions made using their mobile banking apps or other Unified Payments Interface-enabled platforms.

Anusandhanvallari
Vol 2026, No.1
August 2026
ISSN 2229-3388

Methods:

The research paper uses an exploratory research strategy to explore the necessary information was gathered from secondary sources such as NPCI product statistics, The Indian Payment Handbook, and the RBI bulletin. Based on the secondary data grouped, Compound Annual Growth Rate (CAGR) for analysis of UPI annual transactions in terms of Million.

Objectives Of The Paper:

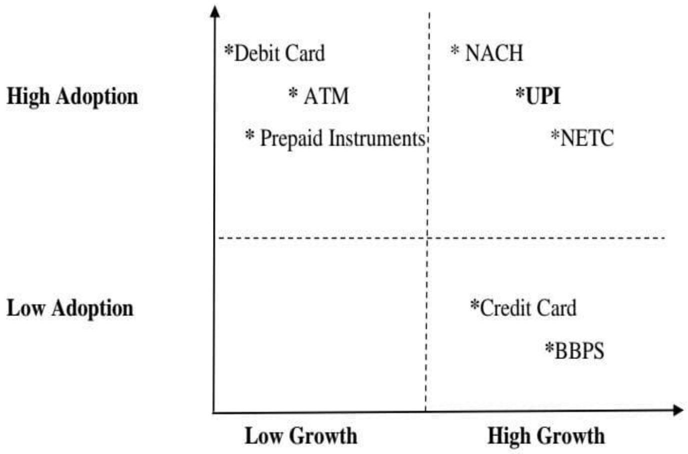
- To examine UPI's role in the digital payment ecosystem. •
- To evaluate its success in the digital era.
- To analyse the Unified Payment Interface (UPI) transaction trends

Results:

Digital Payment Industry- UPI

Digital payment has significantly increased in recent years ambitious by the rapid implementation of digital payment methods. From cash transcations into cashless digital payments, such as UPI and mobile wallets are even replacing ATM cash withdrawals which leads to a cashless revolution. Mobile payment applications such as Paytm, Phonepe and Google Pay have gained extensive adoption among the users of Unified Payment Interface (UPI), Which leads to the growth of electronic commerce and increases in digital transactions. The Mapping of payment Instruments concerning growth and adoption is given below:

Figure 1: Mapping of Payment Instruments for Growth and Adoption



Source: "The Indian Payment Handbook 2022-2027"

Inference:

From the above figure 1, it is inferred that payment instruments for growth and adoption among various digital payment products. It is found that digital payment products which have Low adoption vs High growth among the users in the digital market are credit card and Bharat Bill Payment System (BBPS). It indicates that digital payment products which have High adoption vs High growth among the users in the digital market are National Electronic Toll Collection (NETC), Unified Payments Interface (UPI) and National Automated Clearing House (NACH) and are expected to develop in the subsequent five years.

The Number of Banks in India adopted UPI

The UPI system permits various bank accounts to be accessible through mobile applications using any participating bank. It also integrates various banking functions and facilitates easy merchant payments and fund transfers between individuals via QR codes. The National Payment Corporation of India, in collaboration through 21 banks, introduced the Unified Payments Interface service in 2016, as of September 2024, making a total of 602 bank participants.

Table 1: Growth of UPI from 2017 to 2024 (In terms of Number of Member Banks)

Month/ Year	March 2024	March 2023	March 2022	March 2021	March 2020	March 2019	March 2018	March 2017	March 2016
Banks	572	399	314	216	148	142	91	44	21

Source: Unified Payments Interface (UPI) Product Statistics / NPCI

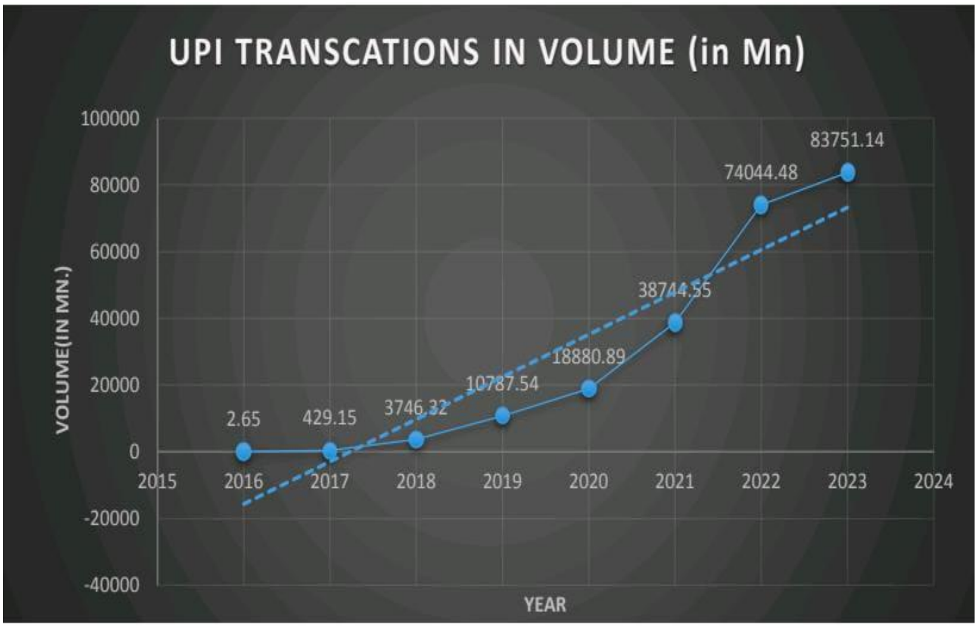
Inference:

It is inferred from the table.1 it is clear that at present 572 banks have entered into the UPI system as of March 2024. In India, there is an increase in the trend of the Unified Payments Interface (UPI) system adopted by various banks over the several years from March 2016 until March 2024. According to the NPCI's product statistics data, 608 banks presently offer UPI services to users in India.

Unified Payments Interface (UPI) Transactions in Million

It is more user-friendly than traditional banking system. According to the Reserve Bank of India's (RBI) annual report, over four out of every five digital payments in the country were made through the Unified Payments Interface (UPI) in fiscal year 2024. The number of transactions on the Unified Payments Interface was 83751.14 (in Million) during the year 2023, from 2.65 (in Million) transactions in the year 2016.

Figure 2: Unified Payments Interface Transactions in Volumes (in Mn.)2016 to 2023



Source: National Payment Corporation of India

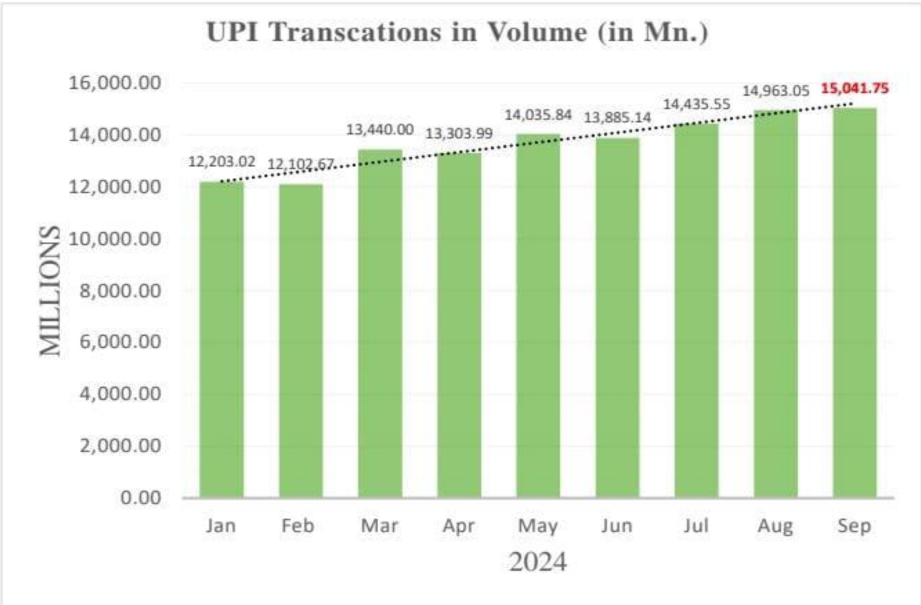
Inference:

It is evident from Figure.2 that, an increasing trend of Unified Payments Interface transactions over the study period from 2016 to 2023, corresponding with Unified Payments Interface transactions from 2.65 million to 83751.14 million respectively.

UPI transactions in Volume (in Millions)- January 2024 to September 2024

The quantities of UPI transactions in September demonstrate once more how ubiquitous UPI have become in India's digital transactions.

Figure 3: Unified Payments Interface Transactions in Volumes (in Mn.) Jan to Sep 2024



Source: National Payment Corporation of India

Inference:

It is evident from Figure.3 that, an increasing trend of Unified Payments Interface transactions from January 2024 to September 2024, corresponding with Unified Payments Interface transactions from 12,203.02 million to 15,041.75 million respectively.

Unified Payments Interface - Annual Transactions For the study, Unified Payments Interface annual transactions in terms of volumes have been taken for last five financial years from 2019-2020 Financial Year to the 2023-2024 Financial Year.

Table 2: Unified Payments Interface - Annual Transactions (Volumes in Million)

Financial Years	Volumes (in Million)
2019-2020	12,518.61
2020-2021	22,330.65
2021-2022	45,967.53

2022-2023	83,751.14
2023-2024	1,31,164.71
Mean	59,146.53
Standard Deviation	48,721.82
Co-efficient of Variance	82.37
Compound Annual Growth Rate = [End Value/Beginning Value] ^(1/n)-1	= 79.91%

Source: National Payment Corporation of India (NPCI)

Inference:

It is revealed from the table.2 that, the mean and standard deviations of Unified Payments Interface transactions are 59,146.53 and 48,721.82 respectively. The coefficient of variation is 82.37. Unified Payments Interface (UPI) transactions have grown from 12,518.61 million in the Financial Year 2019-20 to 1,31,164.71 million in the Financial Year 2023-24 at a Compound Annual Growth Rate is 79.91% regarding volume of UPI transactions.

India's digital payment system

The growing acceptance of internet-connected mobile devices, non-banking financial institutions that promote digital payments, one-touch payments, the rise of the financial services industry, and initiatives by governments such as tax cuts or incentives. In India, there is now a favourable environment for the expansion of digital payments. For the study, the volume of the various digital payment transactions is collected.

Table 3: Growth in Selected Digital Payment System (transactions in Volume)

Payment System	May- '23	May- '24	Jun- '23	Jun- '24
RTGS	12.6	13.3	9.2	9.2
NEFT	28.4	52.5	26.7	43.4
UPI	58.3	49.1	59.2	48.7
IMPS	3.5	11.2	2.7	10.4
NACH	-14.3	12.7	18.8	29.5
NETC	17.4	3.7	13.7	5.8
BBPS	28.4	47.8	24.8	53.6

Source: RBI Bulletin July 2024

Inference:

Discloses table 3, that digital payment system indicators across all major categories exhibited sustained growth (y-o-y) in June 2024, primarily led by the Bharat Bill Payment System (BBPS) and the Unified Payments Interface (UPI)

UPI Growing Internationally

Amid initiatives to facilitate continuous cross-border transactions, electronic payment methods from India, such as the UPI, are becoming ever more attractive to international consumers. Remittance payments and fund transfers become more affordable. The foreign markets that accept UPI payments are the following: France, Nepal, Mauritius, Singapore, Malaysia, UAE, and Sri Lanka. Bhutan was the first nation outside of India to use the UPI to speed up transactions made via the BHIM app. On introducing Unified Payments Interface internationally, the annual report stated that the National Payment Corporation of India International Payments Ltd., and RBI would aim to launch Unified Payments Interface to 20 nations, with an instigation deadline of 2024-25 and an achievement deadline of 2028-29. The UPI's globalization is moving forward quickly.

To create an all-inclusive digital payments system, NIPL has inked an agreement with Trinidad and Tobago's Ministry of Digital Transformation. From person to person and person-to-merchant transactions will be made easier and safer for locals with the help of this technology. The deal, which was made public on September 27, 2024, indicates India's aim of taking the lead in the world's digital payments market.

Table 4: List of countries that accept UPI

S.No	**Country**	Introduction of UPI
	Bhutan	13 July, 2021
	United Arab Emirates	21 April, 2022
	Malaysia	2021
	Singapore	21 February, 2023
	Nepal	December 2023
	Oman	December 2023
	Qatar	15 March, 2023
	Russia	April 2023
	France	2 February, 2024
	Sri Lanka	12 February, 2024
	Mauritius	12 February, 2024

Source: Unified Payments Interface (UPI) Product Statistics / NPCI

Discussion:

- It indicates that digital payment products which have High adoption vs High growth among the users in the digital market are Unified Payments Interface (UPI), National Electronic Toll Collection (NETC) and National Auto-mated Clearing House (NACH).
- It is clear that present 572 banks are entre into Unified Payments Interface system. In India there is an increase in trend of unified payment interface (UPI) system over the years from March 2016 to March 2024.
- It is evident that an increasing trend of Unified Payments Interface transactions from January 2024 to September 2024.
- It reveals that annual Unified Payments Interface transaction, compound annual growth rate is 79.91%.
- It discloses, that digital payment system indicators across all major categories exhibited sustained growth (y-o-y) in June 2024, primarily led by the Bharat Bill Payment System (BBPS) and the Unified Payments Interface (UPI)

Conclusion:

Overall, the Unified Payments Interface is a valuable tool for digital transactions in India and has the potential to continue to drive the digital payments ecosystem in India. The government and financial institutions need to continue to support and develop the UPI to ensure it continues to meet the changing needs of the country's economy. Through this paper it clear that Unified Payments Interface plays important role in the digital revolution of the nation and the NPCI has built a strong payment infrastructure that helped India closer to a cashless economy. Unified Payments Interface is the Game-changer in the Indian economy. With the use of UPI, it offers which not only simplifies the transactions but huge spending contribution to GDP in economic landscape.

Reference:

[1] Dr. Gauri Modwel and Mr. Mayank Trivedi (2024) "The Impact of Unified Payments Interface (UPI) On Financial Inclusion and Economic Development" Educational Administration: Theory and Practice, 30(5), PP 3581-3588 Doi: 10.53555/kuey. v30i5.3494

[2] Dr.M.N.Prakasha (2023) "A Study on Unified Payment Interface (UPI) Among University Students in Madurai City", International Journal of Management (IJM), 14(2), 2023, pp. 1-8. DOI: https://doi.org/10.17605/OSF.IO/HTMU6

[3] G. Sankararaman and et al (2023) "A Study on Users' Opinion towards Unified Payment Interface (UPI) Transactions" World Journal of Management and Economics, pp 258-266, https://papers.ssrn.com/sol3/papers.cfm?abstract_id=4566690

[4] Ms Manisha Tripathi and et al (2024) "Impact of Growth of UPI on the Indian Economy". International Journal of Research Publication and Reviews, Vol (5), Issue (3), March (2024), Page – 3633-3639

[5] Manoj Kumar Goyal and Dr. Nikhil Monga (2022) "An Empirical Study On Perception And Attitude Of Consumers Towards Unified Payment Interface (UPI)" Journal of Positive School Psychology http://journalppw.com 2022, Vol. 6, No. 2s, pp 518-525

[6] Prof. Tanvi A. Kothiand Prof. Vinit A. Upadhyay (2023) "Consumer Perception towards UPI W.R.T speed of payment and control over payment". Section A-Research paper of Payment DOI: 10.31838/ecb/2023.12.6.239

[7] Shruti Chaure (2023), "Enhancing User Experience: Investigating Customer Insights on Unified Payments Interface (UPI) in Pune District, India" International Journal of Research Publication and Reviews, Vol 4, no 8, pp 2522-2528 August 2023.

[8] RBI Bulletin July 2024.

[9] PwC -The Indian payments handbook - 2023- 2028

[10] National Payment Corporation of India – Product Statistics.