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The Modern Digital Payment System: A Pathway Advancing to Digital India

Rahul Pal[1]
Research Scholar, Department of Commerce
Deen Dayal Upadhyaya Gorakhpur University
Gorakhpur, U.P, India

Dr. Maneesh Kumar[2]
Assistant Professor, Department of Commerce
Deen Dayal Upadhyaya Gorakhpur University
Gorakhpur, U.P, India

Abstract
The concept of digitalization is now all the trend. When it comes to digitization, digital payments plays a very essential role due to the benefits it provides to both the nation and as whole and its individual citizens. The Reserve Bank of India (RBI) has implemented a variety of measures to encourage publics to switch to digital payment methods and to increase their level of financial inclusion by using digital platforms for financial transactions. This paper attempts to examine the trend in several types of digital payments during the previous three years, including NFS Inter Bank ATM Cash Withdrawal, NACH, CTS, IMPS, AEPS, BBPS, UPI, BHIM (UPI), and NETC. However, cash continues to play a significant role owing to a lack of sufficient infrastructure and technological issues that must be solved soon. The study's goal is to get policy makers' attention so that the benefits of digitalization reach everyone.

Keywords -: Digitalization, BHIM, UPI, IMPS, financial inclusion, Digital payments

Introduction
India is on the verge of a major digital revolution. The digitalization of the payment method will be seen as a pivotal moment in future cashless economy. The Government of India emphasized digital payment system as part of the Digital India campaign. To help enhance and improve the settlement of digital payment systems, the government launched a variety of new digital payment systems; the government launched a variety of new digital payment channels via the National Payments Corporation of India (NPCI). It is an umbrella organization for retail payment system in India.

In December 2008, NPCI was established with the direction and cooperation of the Reserve Bank of India (RBI) and the Indian Banks' Association (IBA), and the Certificate of Commencement of Business was given in April 2009. It was intended to benefit all member institutions and their clients. NPCI's 10 promoter banks are State Bank of India, Punjab National Banks, Canara Bank, Bank of Baroda, Union Bank of India, ICICI Bank, HDFC Bank, Citi Bank, and HSBC.

At a meeting on September 24, 2009, the Board for Regulation and Supervision of Payment and Settlement System (BPSS) agreed in principle to let NPCI run different system in the country. It also gave NPCI a Certificate of Authorization to run the National Financial Switch (NFS) ATM Network starting on October 15, 2009, and it took over NFS operations on December 14, 2009. Rules and regulations had been set up so that all banks in the country could become members. This was done when the payment systems are launched, they will all be on the same platforms.

Many different actions were taken by NPCI to advance electronic payment methods. There were number of new offereing in this category that it introduced. Products and services like Bharat Interface for Money (BHIM), Unified Payment Interface (UPI), Immediate Payment Services (IMPS), National Automated Clearing House (NACH), Cheque Truncation System (CTS), Aadhar Enabled Payment System (AEPS), Rupay, Bharat Bill Payment System (BBPS), Bharat Quick Response (BQR), and National Electronic Toll Collection are all examples.

- When it comes to interbank, high-volume, electronic transaction that are repeated and periodic in nature, NACH has established a web-based solution for Banks, Financial Institutions, Corporates, and Government. It may be used for large- scale transaction including the distribution of subsidies, dividends, interest, salary, pension, etc., and the collection of payments involving utilities like phone and internet services, as well as investments like mutual funds and insurance premiums.

- In CTS, an electronic picture of the cheque is communicated to the paying branch through the clearing house, together with necessary data such as the MICR Band, presentation date, presenting bank, etc. Thus, cheque truncation alleviates the need to carry actual instruments between bank location, save in rare cases for clearing reasons.

- IMPS is a service that allows users to send and receive money instantly through mobile phones to others IMPS users, 24 hours a day, seven days a week. Instant Interbank Funds Transfer (IMPS) is a mobile, internet, and ATM-based system for transferring money immediately between participating banks in India.

- Rupay is a new card payment network designed to achieve the RBI's objective of providing a domestic, open-loop, multilateral system that would enable all Indian Banks and financial institutions to engage in electronic payments.

- AEPS is bank-led concept that enables online interoperable financial inclusion transactions at PoS (MicroATM) through any bank's Business correspondent utilsing Aadhaar verification.

- BBPS is a unified payment gateway that enables clients all across India to pay their bills quickly and easily, "Anytime, Anywhere," with complete confidence in the security of their financial data. Cards (Credit, Debit and Prepaid), account transfers, instant payment services (IMPS), internet banking, unified payment interfaces (UPI), mobile application-based electronic pursues (AEPS), and cash are all accepted payment methods via BBPS. Additionally, a receipt or SMS is sent immediately after payment is made for your records.

- UPI is a system that integrates several bank accounts into single mobile app (of any participating bank), combining many banking services, smooth money routing, and merchant payments under one umbrella. It also handles "Peer to Peer"-collect request, which may be scheduled and paid according to need and convenience.

- BHIM is a payment software that uses the Unified Payments Interface to facilitate simple, straightforward, and rapid payments (UPI). You may make quick bank-to-bank payments as well as pay and receive money using just your mobile phone or a virtual payment address (VPA).

- The *99# service operates over the Unstructured Supplementary Service Data (USSD) channel. On August 28, 2014, the Honorable Prime Minister of India, Shri Narendra Modi, inaugurated the Pradhan Mantri Jan Dhan Yojana (PMJDY). Banking users may use this service by calling *99# and navigating through an interactive menu

on their mobile device. This service provides key services such as interbank account-to-account cash transfer, balance inquiry, mini statement, and a variety of other services.

- Person to Merchant (P2M) mobile payment solution is BQR. Merchant must show QR codes in their establishments Users may pay using a Card linked account/VPA/IFSC+Account/ Aadhar by scanning these QR codes with BQR enabled mobile banking app.

- NETC is a countrywide cashless toll payment network with a nationwide interoperable network

As a result, all of these products and services are excellent government efforts aimed at developing India's digital payment infrastructure. The following literature review assisted me in better understanding the present status of markings in India's digital payment system.

Literature Review

According to Mishra (2017)'s research, the government has chosen to establish digital objectives for banks and payment providers. The government has adopted a comprehensive approach a comprehensive approach to digital banking, investigating methods to incentivize train merchants and consumers who utilise digital platforms, as well as food and civil supplies via the five lakh ration stores. The government also intends to educate citizens about digital payments. The demonetization procedure was poorly conceived. Only with demonetization has planning to make India genuinely digital began.

Digital payment has significant potential in rural India, according to Ravi's (2017) research, since it is both quick and inexpensive. He further maintained that NPCI has built new payment apps, which are meant to function on all phones with or without internet and even without phones is aiding rural India. He also focused on benefits of new digital payment system like decrease in transaction cost, development of IT act in support of digital payment system, possibility for growth of ICT in India and convenience in day settlement for merchants and small retailers.

Bhakta (2017) said the government's aggressive push, especially after the demonetization, resulted in a 57% year-on-year increase in digital payments, with mobile wallets more than tripling and card payments jumping 44%. It was also stated that 8.8 billion transactions have been completed using Aadhaar-enabled payments systems and the government backed Unified Payment Interface (UPI). He has also included information from an interview with AP Hota, MD, NPCI, in his essay. UPI use is expected to rise alongside RuPay card usage, he said, which should help the company meet its 25 billion transaction goal. There have been one million BharatQR codes issued to retailers this year, with plans for another ninety three thousand next year. About 195 million purchases were made using RuPay cards at point-of-sale terminals, while another 87.5 million were made with the cards online

According to Kushwaha et al.,(2018) in their study titled "Impact of Demonetization on Indian Economy: A Critical Study," the goal of Demonetization was to promote a cashless/ digital economy. Greater cashless or less-cash transaction will result in more income disclosure, increasing direct tax receipts. Alternative modes of payment will become increasingly popular as cash transactions decline. Electronic Payment methods such as online transactions, payment via apps, E-wallet, E-banking, and the use of debit and credit cards, among others will undoubtedly see a significant growth in demand.

Digital payments are seen as a significant tool for economic growth and financial inclusion. The goal of deepening digital payments is time-consuming but not impossible. All stakeholders must work together to achieve a digitally inclusive society (Nilekani, et al., 2019).

Importance of the Study

Today, digital payments are major trends; read about the future of India's digital payments in prospects for Cashless economy in India. Mobile Wallet and electronic payment system use accounts for around 5% of India's total financial transactions. With digital transactions, monetary transactions are recorded which one of the key benefit of becoming cashless. Black money markets, which may be negative to national economies, are becoming

easier to monitor thanks to technological advancements. For the government's finances, this is a net positive. A benefit of a cashless economy is that its residents do not have to worry about losing their money or being robbed since they do not need to carry about physical bills.

You will spend less time and money on transactions and making payments shopping, bills paying, and other monetary activities may all be easily scheduled and executed from the comfort of one's own smart phone, whether at home, at the office, or on the go. In addition, the costs associated with bank notes and moving it around are minimized.

Statement of the Problem

India has the world's second-largest population. India's economy is still one of the world's fastest-growing. In an effort to boost the nation's economy, the government has launched a programme called "Digital India" to encourage the widespread use of digital technologies. The prime minister of India has repeatedly stressed that all financial dealings inside the country must be conducted digitally. The introduction of various digital payment methods has accelerated the process of putting the idea of a digital economy into practice. Increase or decrease in income are possible as a result of the use of certain payment methods. E-payments, IMPS, NEFT, mobile wallets, and many for of cashless payment have recently been introduced in India. The authors of this study discuss the effects of India's recent demonetization on cashless payments system in the country.

Objectives of the Study

- To investigate a trend in digital payment through different means.
- To find out how well the new digital payment methods work.
- To compare new digital payment system stacks up against older ones.

Research Methodology

The descriptive design is used in hthis study. For this study, government-published secondary data is used. Websites like www.npci.org.in and www.rbi.org.in are used to get the information needed. This study only looks at the time period 2019-20 to 2021-22. When analysing data, simple tools like cross-tabulation, trend percentage analysis, line charts, and bar charts are used.

Data and Charts

The following table displays digital retail payments made on the NPCI platform during the last three years.

Table 1: Total Retail Payment on NPCI Platform

	FY 2019-20	**FY 2020-21**	**FY 2021-22**
Volume (in Mn)	26,493.26	37,513.45	57,424.95
Volume (in Bn)	160,924.07	165,538.15	209,218.05

Figure 1: Trend Percentage of Total Retail Payment on NPCI Platform

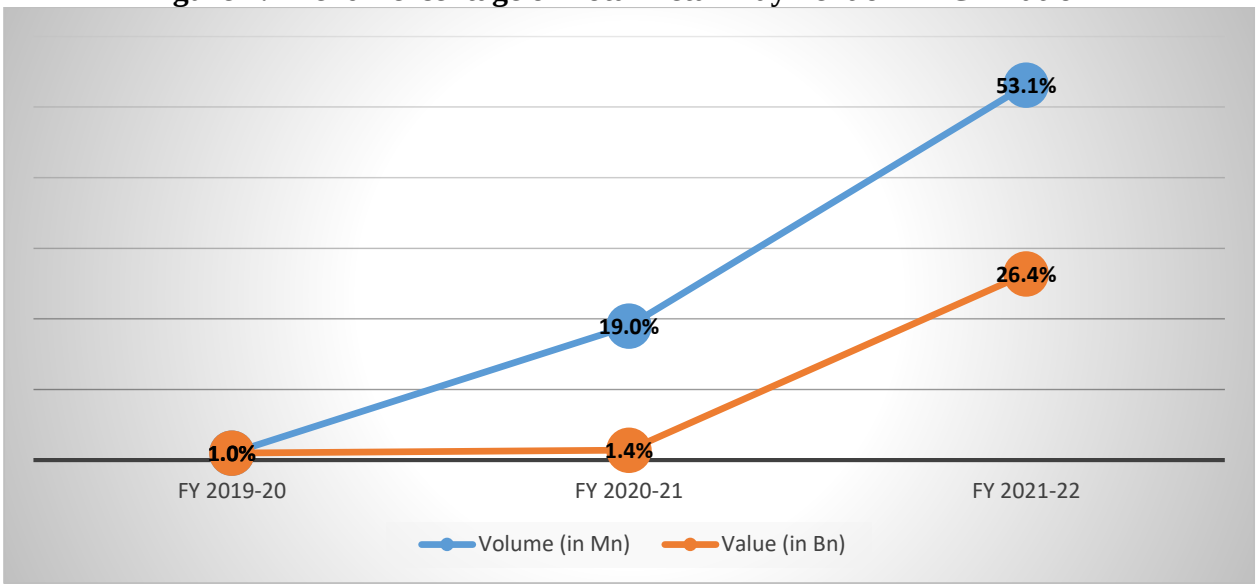


Figure 1 illustrates the trend percentage of retail payment volume and absolute figures from Table 1. The trend line reveals that the CAGR for retail digital transaction volume is around 19.0%, whereas the CAGR for digital transaction value is approximately 1.4%. It indicates that the quantity of transactions has grown faster than their values.

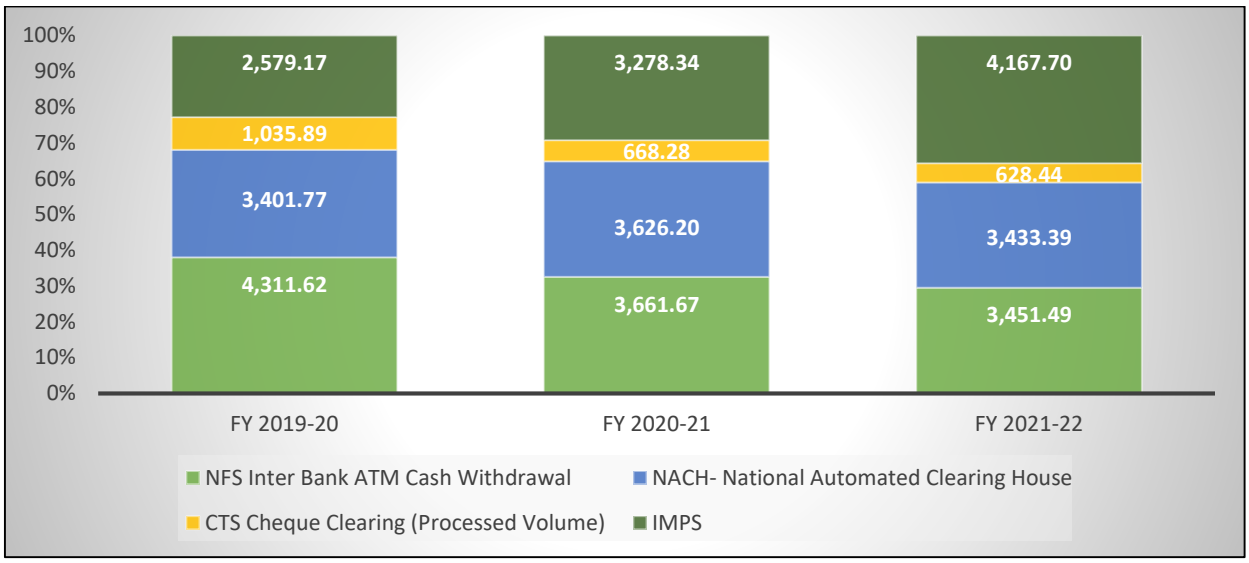
Table 2: Retail Payment on NPCI Platforms with various mode

Sr. No.	NPCI Operated System	FY 2019-20		FY 2020-21		FY 2021-22	
	Financial Txns	Volume (in Mn)	Value (in Bn)	Volume (in Mn)	Value (in Bn)	Volume (in Mn)	Value (in Bn)
1	NFS Inter Bank ATM Cash Withdrawal	4,311.62	16,151.40	3,661.67	14,988.02	3,451.49	14,342.68
2	NACH- National Automated Clearing House	3,401.77	17,629.99	3,626.20	19,032.78	3,433.39	19,514.85
3	CTS Cheque Clearing (Processed Volume)	1,035.89	79,174.61	668.28	56,026.11	628.44	57,345.52
4	IMPS	2,579.17	23,375.41	3,278.34	29,414.96	4,167.70	37,063.67

(Source: RBI Data)

On the NPCI platform, the table below outlines the most popular digital retail payment methods. In each of the three years, we see that IMPS have the highest value to transaction than NFS Inter Bank ATM Cash Withdrawal, NACH- National Automated Clearing House, CTS Cheque Clearing (Processed Volume) while coming towards highest in value of transactions CTS Cheque Clearing (Processed Volume) have the highest in the rank than IMPS. On comparing all four financial transactions IMPS has shown optimistic growth rates in terms of Volume and Value of transactions. For a clearer overview of the growth of different kinds of digital payment trend, the percentage technique is preferable to plain tabular data. The following chart shows the rate of expansion throughout time.

Figure 2: Trend Percentage Analysis of Retail Payment (in rupees) on NPCI Platform



According to Figure 2, conventional financial transfer methods including ATM cash withdrawal and Cheque Clearing (CTS) have expanded at a normal pace over the last three years. NACH and IMPS however are rapidly as new forms of electronic payment. Between 2019-20 and 2021-22, the IMPS and NACH CAGRs are 27.1% and 0.5% respectively. Due to number of factors, including speed, security and the practically of financial transfers, it demonstrates the new digital payment system's high level of acceptance. The performance of them in the 2021-22 year is the seen in the following statistics.

Figure 3: Retail Payment (volume in million) on NPCI Platform in year 2021-2022

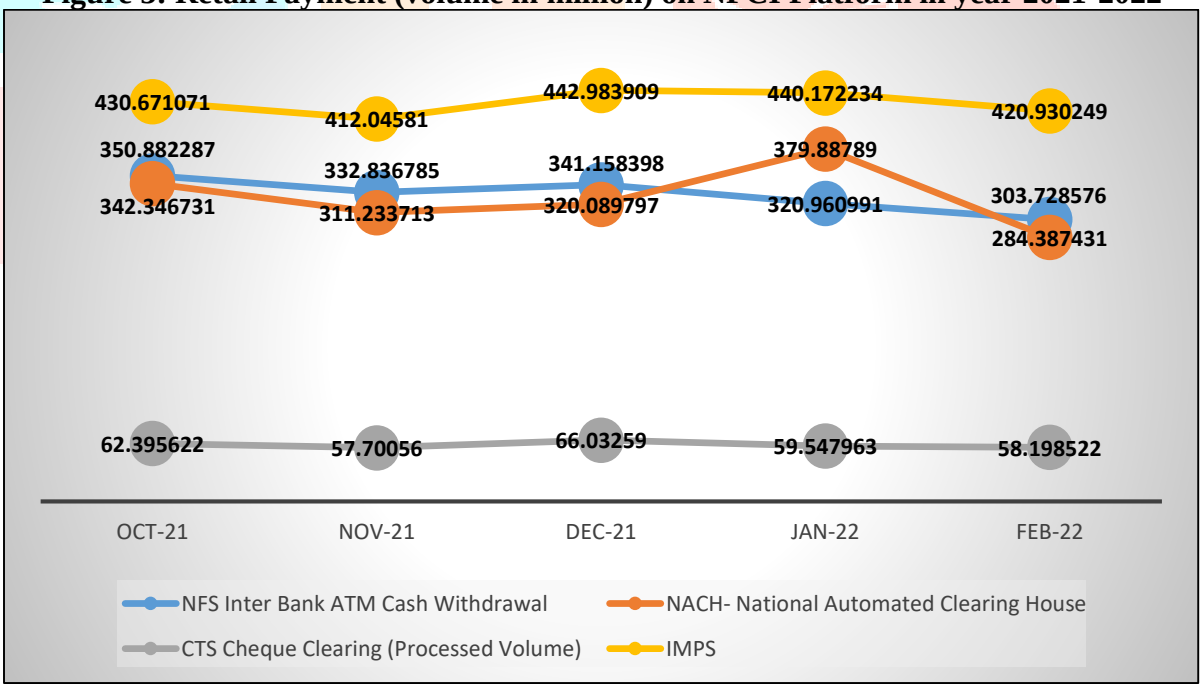


Figure 4: Retail Payment (volume in Billion) on NPCI Platform in year 2021-2022

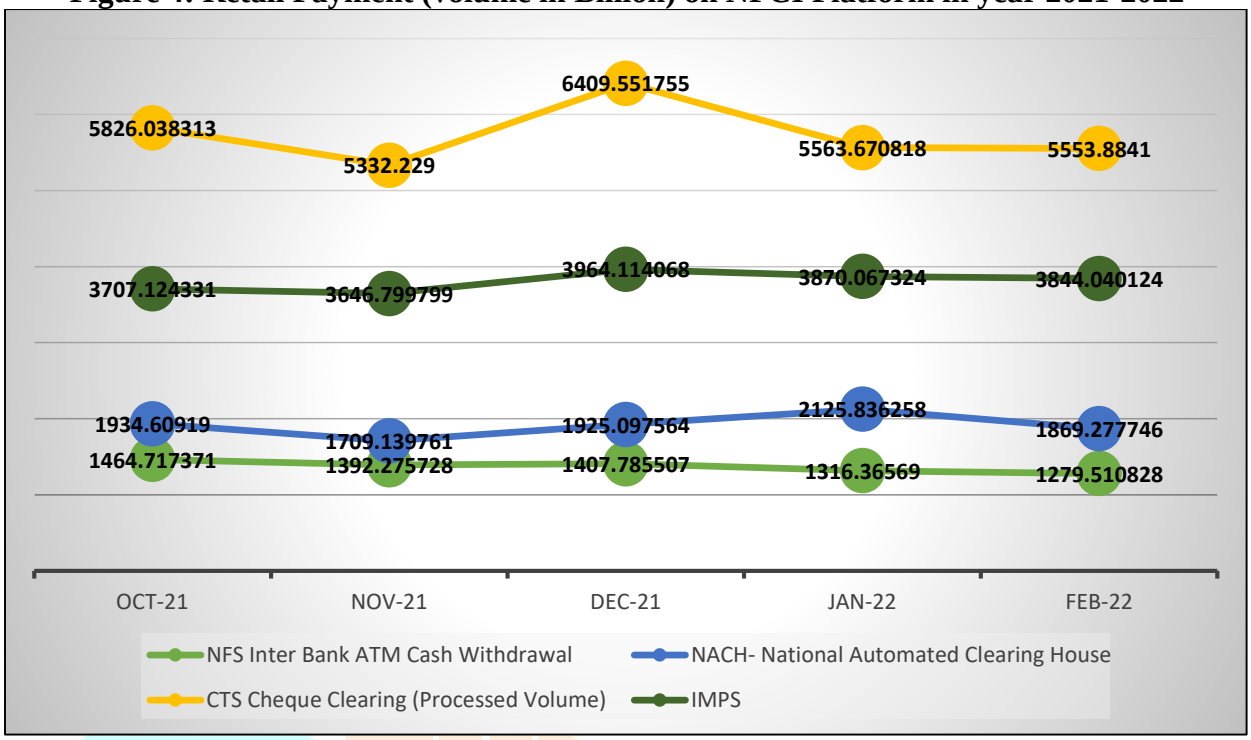


Table 3: Modern Mode of Retail Digital Payment (Value in Billion)

	Jul-21	Aug-21	Sep-21	Oct-21	Nov-21	Dec-21	Jan-22	Feb-22
AEPS	2.3	2.7	2.3	2.5	2.6	2.6	2.9	2.6
BBPS	1.0	1.0	1.2	1.1	1.0	1.0	1.0	1.0
UPI	60.6	63.9	65.4	77.1	76.8	82.7	83.2	82.7
BHIM(UPI)	0.7	0.8	0.8	0.8	0.8	0.9	0.9	0.8
USSD 2.0 (UPI)	0.002	0.002	0.002	0.002	0.002	0.002	0.001	0.001
UPI excluding BHIM & USSD(UPI)	59.9	63.1	64.7	76.3	76.0	81.8	82.3	81.9
NETC	0.3	0.3	0.3	0.3	0.3	0.4	0.4	0.4

Figure 5: Modern Mode of Retail Digital Payment (Value in Billion)

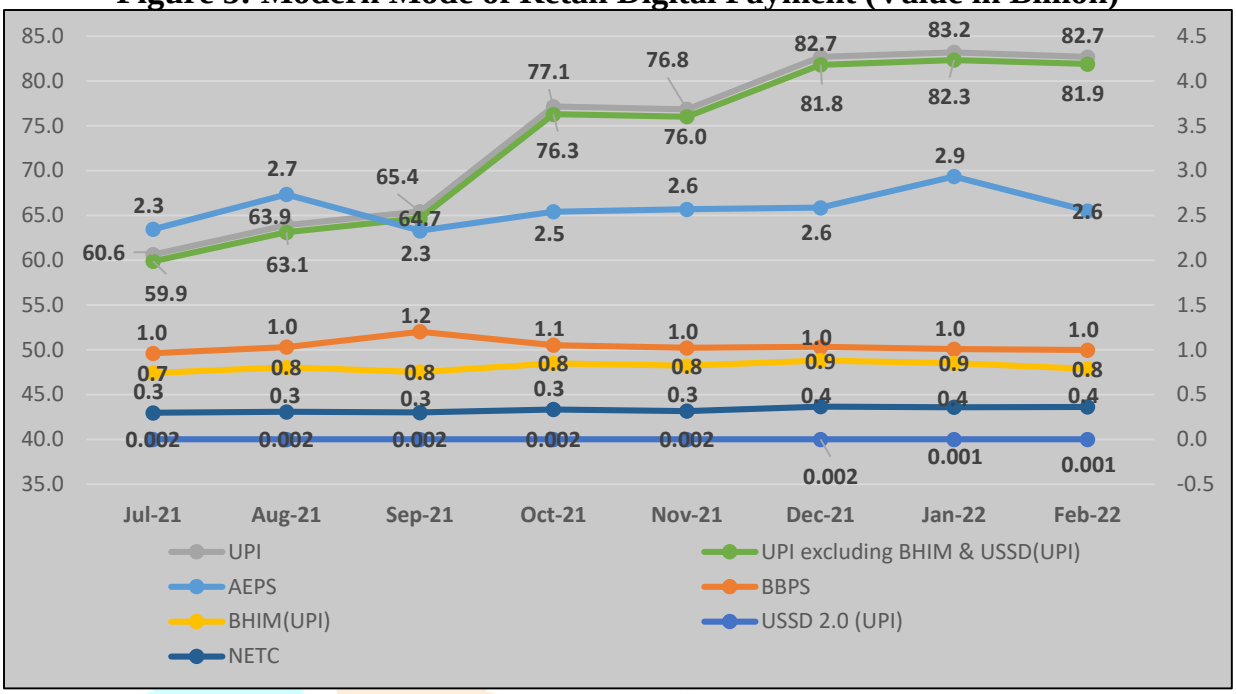


Table 3 and Figure 5 displays the information after July 2021. It present information on modern digital payment methods in billions. In this eight month, all modes of retail payments have shown exponential growth except USSD 2.0 USSD, which displays flat growth.

Table 4: Modern Mode of Retail Digital Payment (Volume in Million)

	Jul-21	Aug-21	Sep-21	Oct-21	Nov-21	Dec-21	Jan-22	Feb-22
AEPS	88.8	108.5	90.9	96.9	94.6	96.0	115.1	94.4
BBPS	51.1	58.9	59.6	60.6	59.5	62.1	62.7	62.5
UPI	35.6	35.6	36.5	42.2	41.9	45.7	46.2	45.3
BHIM(UPI)	26.2	26.2	25.2	27.2	25.1	27.0	25.7	23.2
USSD 2.0 (UPI)	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
UPI excluding BHIM & USSD(UPI)	0.1	35.3	36.3	0.1	41.6	45.4	45.9	45.0
NETC	2.0	2.0	1.9	2.1	2.1	2.4	2.3	2.4

Figure 6: Modern Mode of Retail Digital Payment (Volume in Million)

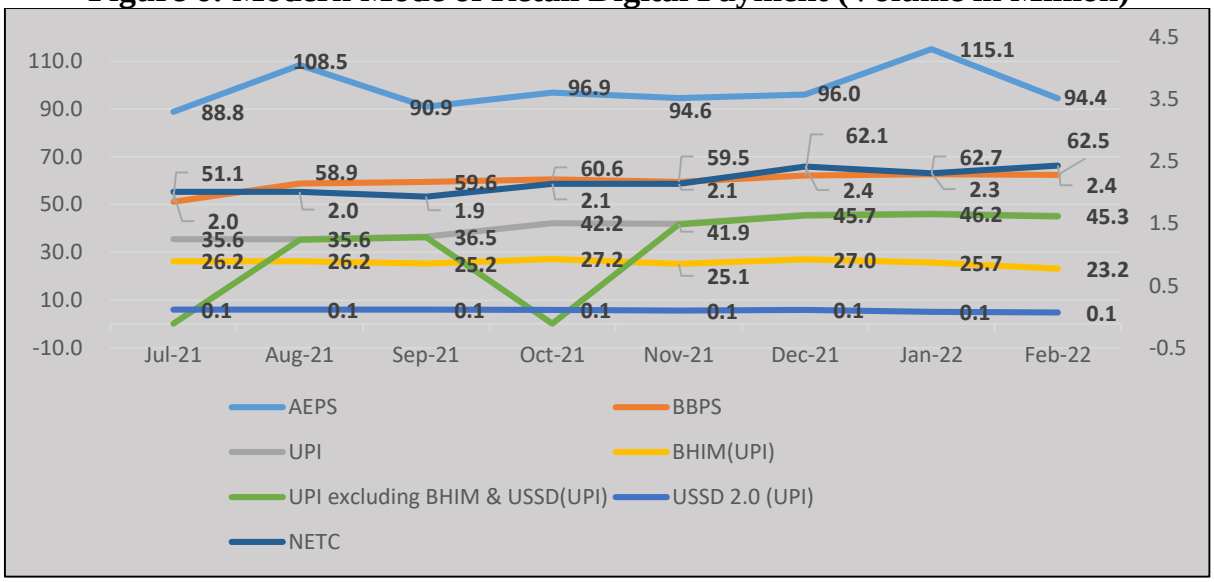


Table 4 and Figure 6 illustrates the increase in volume in millions for modern digital payment methods under NPCI. All modes except USSD 2.0 show a substantial increase in growth (UPI). After the government demonetization and digital payment promotion initiative, there has been significant increase in the number and value of digital payments made using various modern payment methods.

Common challenges and suggestions for resolving issues related digital payments.

- Many rural regions lack the necessary infrastructure and technology for digitalization adoption. Consequently, effort must be made to ensure that the advantages of digitalized payments reach rural population as well.

- Privacy and security of information exchanged via a network are always subject to restrictions. Therefore, it is important to take the necessary precautions to avoid Cybercrimes and Hacking.

- The banking industry is developing new goods and/or services. However, this requires several extra legal requirements such as the definition of electronic signature and granting of rights. Existing legal definitions and permits must be rethought together. (Sardana & Singhania,2018)

Conclusion

In recent times, there have been more youngsters and adults using digital payments applications than ever before, notably student and individuals working in the public and commercial sectors. Overall, the users of all digital payment applications gain the most from rapid payments; avoid carrying hard money, time savings, highly secured payments, receiving discounts and offers, simple recharge, and green payment system, among other things. As a result, Indian individual are changing their behavior, which is a great start towards a cashless or less coin-based economy. This would encourage India to have a more sophisticated and digital economy.

India's current government has increased its effort to establish a digital payment system. In the last three years, there has been a phenomenal expansion of digital payments. People are actively embracing new digital payment methods and favoring them over older ones. In addition, demonetization intensified digital payment transaction, particularly in digital payment mechanism like as NACH, IMPS, AEPS, BBPS, UPI, BHIM (UPI), and NETC that are relatively new. Taking into account government action and implementation based on specific objectives, it assures that it will assist the development of the economy at a faster rate of growth in the future.

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