

India's Digital Payments Methods: A Study of Their Potential, Challenges, and Strengths

Dr. Vandana Pandey

Associate Professor in Department of Commerce, Harishchandra PG College. Varanasi.

Email – vandana21076@gmail.com

Abstract-India will soon become a cashless nation. To lessen the country's reliance on cash and combat money laundering, the Indian government started the "Digital India" campaign. Numerous payment methods are growing and sprouting in order to make India a cashless nation and keep up with rising trends in using digital payment systems. India is a developing nation with the most of its territory being rural. It is shocking that just 6.5% of its population is computer literate, which raises concerns about the adoption of digital payment systems. The study paper focuses on the issues with India's digital payment system and its effects on the country's economy and population. The research report also tries to describe the potential of the digital payment system in the future.

Keywords-digitalization, cashless economy, strengths, digital payment, digital wallet.

Introduction

An economic condition known as a cashless society refers to one in which digital currency, or crypto currency, is utilized for financial transactions rather than actual cash in the form of coins or banknotes. The digital payment system has now taken over as a crucial component of banking transactions. The government needs to go digital in order to compete with developing nations and improve the financial sector in accordance with the demands of the modern world. In order to eradicate hidden and black money from the nation, Prime Minister Narendra Modi launched the Digital India program in 2017. The cashless transactions will be implemented throughout India as part of the mission of the digital payment system, which can help combat black money or money laundering. In 2017, Digital India was credited with clearing the country of hidden and illicit funds. The goal of this cashless mission is to decrease money laundering and black money by implementing a digital payment system that would be used for all transactions in India. It is also crucial to consider how technological advancements affect the established order and the challenges that arise during new adaptation. In India, ICICI bank announced the availability of online banking services, and Digi bank is also in front when it

comes to offering customers transactional digital services. SBI is a public sector bank that has benefited greatly from digitization. SBI developed the green Channel in 2011 to promote digital systems and protect the environment.

The digital system is replacing the conventional system. Cheques, withdrawals, drafts, money orders, letters of credit, traveler's checks, and other classic payment methods are available. why There are a number of reasons why payment systems are evolving towards electronic payment systems using computers and the internet. The most frequent explanation is that the traditional method has some inefficiencies and leaks, which the digital payment system addresses. However, the use of digital systems is still relatively new in India and is not yet widely accepted.

Debit cards and credit cards are the most popular electronic payment methods used in India today, but electronic funds transfers, internet banking, the Unified Payment System (UPI), e-commerce payment systems, internet banking, and *99# USSD based payment systems are less common.

Therefore, it is crucial to understand the challenges facing India's digital payment system and its development.

2. Literature Review

1. Sanghita Roy, Dr. Indrajit Sinha (2014) . stated that E- payment system in India, has shown tremendous growth, but still there has lot to be done to increase its usage. Still 90% of the transactions are cash based. Technology Acceptance Model used for the purpose of study. They found Innovation, incentive, customer convenience and legal framework are the four factors which contribute to strengthen the E-payment system.
2. E-payment systems are important mechanisms used by individual and organizations as a secured and convenient way of making payments over the internet and at the same time a gateway to technological advancement in the field of world economy (Slozko & Pello, 2015).
3. Rakesh H M & Ramya T J (2014) in their research paper titled "A Study on Factors Influencing Consumer Adoption of Internet Banking in India" tried to examine the factors that influence internet banking adoption. It is found that internet banking is influenced by its perceived reliability, Perceived ease of use and Perceived usefulness. In the process of internet banking services expert should emphasize the benefits its adoption provides and awareness can also be improved to attract consumers" attention to internet banking services.
4. Kartikeya Bolar (2014) In his research paper "End-user Acceptance of Technology Interface In Transaction Based Environment "stated that Creators International Journal of Pure and Applied Mathematics Special Issue 1261 and investors of technology need information about the customers" evaluation of their technology interface based on the features and various quality dimensions to make strategic decisions in improving technology interfaces and compete on various quality dimensions.
5. Nitsure (2014) in his paper observed that the problem being faced by developing countries like India in the adoption of E-banking initiatives due to low dissemination of Information Technology. The paper highlighted the problems such as security concerns, rules, regulation and management. In India there is a major risk of the emergence of a digital split as

the poor are excluded from the internet and so from the financial system.

6. Balazs Vinnai, general manager, Digital Channels, Misys(April 25, 2016), says that "It is critical for banks to consider new digital channels as part of an integrated strategy and evolve from first to second generation digital banking: switching digital from a supporting role, to the primary sales and communication channel for banks," says Vinnai. "Reengineering processes around the customer is not easy, but banks must embrace digital banking to remain competitive and relevant."

Objective of study

- 1- Studying the idea of cashless transactions and digital payment systems is one of the goals.
2. To understand the effects of electronic payments.
3. Being aware of the benefits of cashless transactions.
4. To understand the advantages and disadvantages of India's e-payment system.
5. To be aware of the issues with electronic payment systems.

Research methodology

Secondary data provides the foundation for the study's methodology. conceptual analysis of the digital payment system is being done. secondary data taken from publications including government reports, news stories, internet, journals, and books.

Digital payment method -

1. **Banking card:** Banking sector provides various cards to avoid the time spend over the banking transaction. It offers consumers more security, convenience, and control than any other payment method. There are many types of cards Rupay, mastercard, visa etc. they provides more security to the customer while using it. Payment cards give people the power to purchase items in stores, on the Internet, through mail-order catalogues and over the telephone. They save both customers and

merchants' time and money, and thus enable them for ease of transaction.

2. **USSD:** The innovative payment service *99# works on Unstructured Supplementary Service Data (USSD) channel. This service allow to users mobile banking without internet. *99# facility available to make money transfer from one person to another without using internet and smart phones. *99# service has been launched to take the banking services to every common man across the country. The Common number across all Telecom Service Providers on their mobile phone and can make transaction using an interactive menu on the mobile screen. Using this customer can check balance, transfer money, can get mini statement etc.

3. **Aadhar enabled Payment system:** AEPS is a bank led model which allows online interoperable financial transaction at PoS (Point of Sale or Micro ATM) through the Business Correspondent or Bank Mitra of any bank using the Aadhar authentication.

4. **UPI:** UPI is a Unified Payments Interface system that allow to multiple bank accounts into a single mobile application, merging several banking features. It is use to transfer money receive money, bill payments and others. Now it is getting popularity among the Indian people. It is interesting and easy to use and not need to remember frequently use beneficiary's account number. The customer can get transaction history quick payment.

5. **Mobile Wallets:** there are several mobile wallets are available and each bank have their own application. The customer can carry digital cash through mobile wallet. By use of wallet customer can link credit card or debit card in mobile device to make transaction. An individual's account is required to be linked to the digital wallet to add the money. The Paytm, Freecharge, Mobikwik, Airtel Money, Jio Money, SBI Buddy, itz Cash, Vodafone M-Pesa, Axis Bank Lime, ICICI Pockets, Speed Pay etc. are the mobile wallets use in India.

6. **Point of sales:** A point of sale (PoS) is where sales are made. It allow to PoS holder to collect money from their customer by the way of swap Also and no need to go bank for making transaction of purchase and selling. On a micro level, retailers consider a PoS to be the area where a customer completes a transaction, such as a checkout counter. But its require GPS system internet and bank account of merchant

7. .

8. **Internet banking:** Internet banking, also known as online banking, e-banking or virtual banking, is electronic payment systems that allow customers of a bank to make transaction using website of the bank using ID and password.

9. **National Electronic Fund Transfer:** (NEFT) National Electronic Funds Transfer is a nation-wide payment system which provides funds transfer from any bank any branch to any bank. Using the system individual firms and corporate can electronically transfer funds from any bank branch to any individual, firm or corporate having an account with any other bank branch in the country. Not only account holders but also without having account people can sent money to others account by depositing money from anywhere. However, such cash transaction have limit of Rs. 50000/- using this service individual can deposit money on 50000/- and this facility can use in working days only.

10. **Real Time Gross Settlement (RTGS):** RTGS is settlement of funds transfers individually on an order by order basis. 'Real Time' means the processing of instructions at the time they are received rather than at some later time. Considering that the funds settlement takes place in the books of the Reserve Bank of India, the payments are final and irrevocable. Transferring large amount RTGS is used. Customers can send minimum 2 lakh and maximum have no limit. RTGS can use in banking hours.

11. **Electronic Clearing System (ECS);** ECS is an alternative method for the payment transactions like utility-bill-payments such as

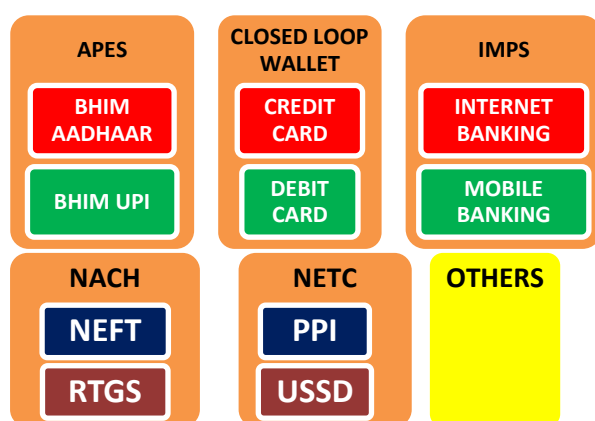
telephone bills, electricity bills, insurance premium, card payments and loan repayments, etc.,

12. Immediate Payment Service (IMPS): IMPS offers an instant, 24x7x365, interbank electronic fund transfer service through mobile phones. IMPS are a tool to transfer money instantly across India using mobile, internet and ATM it is safe and cost-effective.

13. Mobile banking: Mobile banking is a portable system provided by banks to customer on their mobile phones, smart phones with a special application using software. It provided by the banks or financial institution for the purpose. Each Bank provides its own mobile banking App for Android, Windows.

14. Micro ATM: Micro ATM meant to be a device that is used by the million Business Correspondents to deliver basic banking services. The micro ATM enables Business Correspondents to make instant transactions. It helps to withdrawals, transfers transaction instantly.

Digital payment modes at a glance :



Progress of Digital Payment services in India:

The progress and use of digital services can be seen using the following information. After demonetization of money, the digital system got mentionable progress after 2016. Government of India is committed to expand digital transactions in the Indian economy, and

thereby enhance the quality and strength of the financial sector, as well as ease of living for citizens.

1- Digital payment transactions have significantly increased as a result of coordinated efforts of the Government as a whole, along with all stakeholders concerned, from 2,071 crore transactions in FY 2017-18 to 9192 crore transactions in FY 2022-23 (Source: RBI, NPCI and banks).

2- During the last five years, various easy and convenient modes of digital payments, including Bharat Interface for Money-Unified Payments Interface (BHIM-UPI), Immediate Payment Service (IMPS), and National Electronic Toll Collection (NETC) have registered substantial growth and have transformed the digital payment ecosystem by increasing person-to-person (P2P) as well as person-to-merchant (P2M) payments. BHIM UPI has emerged as the preferred payment mode of the citizens and has recorded 803.6 crore digital payment transactions with the value of ₹ 12.98 lakh crore in January 2023.

❖ The total number of digital payment transactions undertaken during the last five financial years and the current financial year are as under:

Financial Year (FY)	Total number of digital transactions (in crore) #
2017-18	2,071
2018-19	3,134
2019-20	4,572
2020-21	5,554
2021-22	8,840
2022-23	9,192*

* Data till 31st December 2022

Note: Digital payment modes considered are BHIM-UPI, IMPS, NACH, AePS, NETC, debit cards, credit cards, NEFT, RTGS, PPI and others.

Source: RBI, NPCI and banks

The total value of digital payments during the last five financial year and in the current financial year are as under:

Financial Year	Total value of digital transactions (In lakh crore) #
2017-18	1,962
2018-19	2,482
2019-20	2,953
2020-21	3,000
2021-22	3,021
2022-23	2,050*

*Data till 31st December 2022

Note: Digital payment modes considered are BHIM-UPI, IMPS, NACH, AePS, NETC, debit cards, credit cards, NEFT, RTGS, PPI and others.

Source: RBI, NPCI and Banks

3- As table shown above it indicates that the total of digital transaction are in increase trends, as compare to the 2017-18 to 2022-23 (till 31st dec 2022) (RTGS, electronic clearing, Card payments and m. wallets and mobile banking) are increased by near about 95%.

Digital technology is helps to make paperless transaction. For the development paperless banking system there should be strong network of banking and India a hug banking network is available and it is rapidly increasing also.

It is observed that mobile banking is appreciated by the customer due to easy use anytime anywhere.

Growth of Digital Payments in India and availability of various easy and convenient digital payment solutions have facilitated ease of living for citizens, financial inclusion, and

growth of business and economy. During the Pandemic, availability of contactless digital payment solutions such as BHIM-UPI facilitated social distancing and continuity of businesses, including small merchants.

Why peoples are interested/ inclined towards digital payments?

The strength of using digital payments are as follows:

- **Quick and easy method of payment:** Unlike cash, digital methods like BHIM-UPI and IMPS allow for quick transfers of funds to the beneficiary's account. Additionally, utilizing the BHIM-UPI mode, one can complete a digital transaction using a mobile number or an easy-to-remember virtual payment address (address that looks like an email). Payments are made easier because to BHIM-UPI's ability to access various Bank accounts with a single mobile app.

- **Increased financial inclusion:** Digital payments make it simple for citizens to receive payments in their accounts and to make payments using their phones since they provide anytime, everywhere access to accounts. People who may have been discouraged from using a physical bank outlet for transactions due to the time and transportation costs involved can now easily access their bank accounts digitally and reap the rewards of joining the formal banking system and becoming financially literate. Recently released UPI 123PAY enables users of feature phones to conduct digital transactions via UPI in aided voice mode, promoting financial inclusion and digital transactions in rural areas.

- **Improved government system transparency:** In the past, cash payments were prone to "leakage" (payments that did not reach the receiver in full) and "ghost" recipients (false recipients), especially when it came to social security benefits through government transfers. Benefits are currently transferred directly to the target beneficiary's account (direct benefit transfer) using digital payment methods.

- **Increased speed and prompt delivery:** Unlike cash payments, which move at the speed of the carrier, digital payments move almost

instantly, whether the sender and recipient are in the same city, region, or nation.

- **National Electronic Toll Collection (NETC) system:** Using Radio Frequency Identification technology, NETC system enables the customer to make electronic payments at NETC-enabled toll plazas on the highway without stopping at the toll.

- **Bharat Bill Payment System:** Through a variety of channels, including Internet banking, mobile banking, mobile apps, BHIM-UPI, and others, Bharat Bill Payment System (BBPS) offers customers an interoperable and simple bill payment service. Through BBPS, citizens can easily pay their bills whenever and wherever they choose.

- **Increased Access to Credit:** Unlike cash payments, digital payments instantly create a user's financial footprint, expanding access to formal financial services, including credit. Digital transaction histories can be used by banks and other lending institutions to make cash flow-based lending choices for consumer loans as well as loans to enterprises, notably small businesses, which may have trouble obtaining credit in the absence of verifiable cash flows.

- **Safe and secure:** People who receive cash payments frequently travel great distances to do so, and they are also particularly susceptible to theft. As many levels of authentication are necessary for transactions, digital payments in India are secure.

Benefits of a digital payment system include:

1. **Time Saving:** By using a digital payment system, customers may send money to retailers instantly and without waiting for checks to pass. as opposed to traditional payment methods, digital payment systems are faster.

2. **Accessibility:** Customers can utilize digital payment systems from any location at any time, eliminating the need to visit a bank for each transaction.

3. **Simple Purchases:** The digital payment system enables users to make purchases using ATM, credit, and debit cards, making

transactions simple and eliminating the need to carry cash when traveling.

4. **Wallet Use:** The digital payment system includes digital wallets that facilitate payments and allow customers to receive discounts and cash back.

5. **Keep a written record:** You frequently neglect to keep track of your cash outlays. It takes a lot of time, even if you are aware of it. With digital payments, however, you do not need to keep track of your expenditure every time. The E-Wallet app or your passbook will automatically keep track of these. This makes it easier to keep records, monitor expenditures, and create a budget plan.

6. **Less Risk:** The digital payment system offers security for each transaction by requiring an MPIN or OTP, helping to prevent fraud in the system.

Obstacles in Using Digital Payments:

1. **The use of currency by individuals:** In India, currency usage is high. Nearly 80% of transactions in rural India were made in cash. because it has become customary and routine among the populace.

- 2-**Computer Illiteracy:** Only 6% of Indians are computer literate, and 90% of Indians don't comprehend computers or the internet, making it impossible for them to use the electronic payment system.

There are numerous digital payment methods, yet Indians continue to use ATM cards to withdraw and transfer money.6. **Less Risk:** With the use of an MPIN or OTP, the digital payment system offers us security for each transaction, helping to prevent fraud.

- 3-**Using an ATM card:** Despite the availability of numerous digital payment methods, Indians continue to use ATM cards to withdraw and transfer funds.

- 4-**Limited POS availability:** The RBI reports that as of the end of July 2016, there were 1.44 million POS terminals installed by banks nationwide; this number rose by 24% in 2018. Every trader should be included.

5-Mobile Internet Penetration Rate: Mobile usage in India's rural areas is still low. Internet connectivity is needed for setting up digital transactions, but rural areas lack connectivity.

6-Risk and Security: Online transactions are still not widely accepted in India. They also believe that the old system is trustworthy and good. Moreover, you shouldn't trust the transaction's security.

7- Training: There is a communication gap between bank and their customer. It requires giving training about use of online and payment system but banks do not provides any training program to increase the digitalization.

8-Public sector banks: There are 80% share of finance sector is occupied by public sector banks and the public sector banks started the digitalization from 1996. That's why it is in progressive trend. Private sector banks are ahead in digitalization to public sector banks.

Prospects of digital payments :

1. The India banking sector is one of the best sector in India and it changes as per the requirement of the India country .
2. Due to its growing popularity, digital payment systems have a wide use in India. Transactions using payment issued financial entities have grown significantly in both volume and value.
3. There are many banks, and nearly all of them have adopted digital banking. In addition, NPCI encouraged the Adhar enabled payment system to get all Indians involved in digital transactions.
4. The UPI system is the ideal method for conducting digital transactions, and it is anticipated to advance the field of electronic payments.
5. Although debit and credit cards are available as usual for transactions, the tendency has accelerated since the demonetization of currency in 2016.
6. The use of cash will decline due to the expansion of mobile banking services, e-commerce, and mobile payment applications.
7. A nearly threefold growth in RTGS and NEFT volumes between 2013 and 2016 indicates that the system is being used more frequently.
8. The Indian government is concentrating on digital infrastructure and can promote the habit

of digital transactions in India, where practically everyone has an Adhar card and a Jan Dhan Yojana account.

9. According to study, India has 320+ mobile users in 2018, which is a favorable setting for the digital payment system.

Findings-

1. 1-The Reserve Bank of India has underlined the benefits of India's wave of digital transformation in its Annual Report for 2022-2023 and claims that as a result, the nation has become stronger. The analysis spans the months of April 2022 and March 2023.

2. 2-The study highlights the banking system's double-digit credit expansion throughout the course of the year as one noteworthy accomplishment. All key industries had a considerable increase in credit as a result of the actions taken to strengthen capital and enhance asset quality, as well as the beginning of a new lending cycle since the second half of 2021-22. This development is thought to be a result of India's developing digital economy and improved access to financial services.

3. 3-The gross non-performing assets (GNPA) ratio and net non-performing assets (NNPA) ratio both decreased, while the quarterly slippage ratio stabilized, as the asset quality of scheduled commercial banks (SCBs) continued to improve. PCR, or provisioning coverage ratio, also gradually grew. In the rising interest rate cycle, the net interest margin (NIM) saw an improvement, demonstrating the higher degree of transmission of monetary policy to lending rates than to deposit rates. As a result, profit after tax (PAT) experienced significant growth. Throughout the year, SCBs' return on equity (RoE) and return on assets (RoA) both increased.

4. With the start of pilots for the Digital Rupee (e') in the wholesale and retail segments, CBDC, Digital Payments Reserve Bank introduced its Central Bank Digital Currency (CBDC) during the course of the year in stages.

5. There were 84 DBUs operating nationwide as of March 31, 2023. India has recovered from the epidemic stronger and more

resilience, in part because of the wave of digital revolution.

6. In 2022–2023, transactions conducted via digital means had a noticeable increase above the solid growth seen the previous year. In volume and value terms, total digital payments increased by 57.8% and 19.2% in 2022–2023 compared to the previous year, when they increased by 63.8% and 23.1%, respectively.

7. India outperformed other countries to take the top spot in real-time transactions globally in 2022, with a 46% share.

8. The rapid merchant on boarding, rising digital awareness, and regulatory impetus in favor of on-going expansions in the breadth and reach of payment systems all contributed to the strong penetration and growth of Unified Payments Interface (UPI).

9. Sharp increases observed in the National Automated Clearing House (NACH) and the Aadhaar Payments Bridge System (APBS) in 2022–2023 attested to the diffusion of digital payments in the country's rural and semi-urban areas, in part because of the encouraging push provided by the government's decision to convert its cash transfers to electronic transfers.

10. The tourism and hospitality industries are now recovering, which has given the card business a boost. Monthly spending has remained above 1.6 lakh crore throughout the year.

11. With the slogan "E-Payments for Everyone, Everywhere, Every Time," the Reserve Bank unveiled the Payments Vision 2025 during the year, pledging to advance India's payment infrastructure so that every user has access to dependable, accessible, affordable, and effective payment choices.

12. To enable small value transactions using UPI through an on-device wallet in offline mode, the UPI Lite was introduced. By extending the range of financial goods connected for payment processing, the linking of RuPay credit cards to UPI allowed for deeper usage. Single block multiple debits were added to UPI, which improved the capability for merchant payments.

13. Foreign nationals and non-resident Indians (NRIs) may also use the UPI to make payments to Indian merchants. The integration of UPI with PayNow, a Singaporean company,

aided in the facilitation of inexpensive financial transfers and remittances between the two nations. All types of payments and collections are now covered under the Bharat Bill Payment System (BBPS).

Conclusion:

Although there are many options accessible in the Indian financial system and the digital payment system is simple for both bank employees and customers to utilize, a significant portion of the population in India lacks basic computer literacy. Indians have a low degree of digital literacy, hence the country does not yet have a fully established and widespread digital payment system. The use of digital payment systems is influenced by societal and infrastructure barriers. However, due to its accessibility at all times and ease of use, mobile banking is now popular in India. It is also necessary to raise people's levels of digital literacy. Additionally, there are concerns about the risk and security.

References:

- [1] <http://www.iamwire.com/2016/11/list-of-mobile-wallets-upi-payment-apps-in-india/145172>
- [2] <http://www.ciol.com/indias-wallet-launched-2/>
- [3] https://en.wikipedia.org/wiki/Digital_wallet
- [4] <https://www.sumhr.com/digital-wallets-india-list-online-payment-gateway/>
- [5] https://en.wikipedia.org/wiki/Digital_India
- [6] <https://www.medianama.com/2016/11/223-cashless-india/>
- [7] <http://www.sinhaatul.com/2016/12/digital-india-types-of-digital-payment-mode.html>
- [8] <http://vikaspedia.in/e-governance/digital-payment/various-means-of-digital-payments#section-3>
- [9] https://www.rbi.org.in/scripts/BS_ViewBulletin.aspx?Id=13554