

A STUDY ON GROWTH OF DIGITAL PAYMENTS IN INDIA

Dr. Thirupathi Kanchu¹

Dr. D. Harikanth²

Abstract

Transactions that take place online or through other digital platforms without a physical exchange of money is referred to as digital payments. This means that both the payer and the payee exchange money electronically. The Indian government has been implementing a number of initiatives to encourage and promote digital payments across the nation. Present study is made to know the different digital payment modes and to analyse the growth of overall growth of digital payments and difference in growth across various transaction modes in India. As part of study secondary data has been collected from the annual reports of Reserve Bank of India from 2017-18 to 2021-22 and it has been analysed by using appropriate statistical tools. From the analysis it is concluded that the overall digital payment transactions recorded significant growth in both volume and value, but there is a statistically significant difference in the growth across the categories of digital payments.

Keywords: Digital Payments, RTGS, Card Payments, Credit transfers, CAGR

1. Introduction:

These days, digital payment has proven to be the most popular alternative among a vast number of people. The main reason for digital payment's appeal is that it takes very little time and works very well. It has enabled online payments to be made with a simple tap on the phone. You don't even need to carry your wallet everywhere and you can shop, pay bills, eat at a restaurant using the mobile banking services on your phone. Besides that, digital payment has a lot to offer for us if we know how to use it well.

Digital payments are transactions that happen online or through other digital platforms without a physical exchange of money. This indicates that both the payer and the payee exchange money via electronic means. The Indian government has been implementing a number of initiatives to encourage and promote digital payments across the nation.

¹Assistant Professor (c) Dept. of Commerce, UCCBM, Satavahana University, Karimnagar, T.S
Email:thirupathikanchu@gmail.com

²Head & Chairman BOS, Department of Commerce, Satavahana University, Karimnagar, Telangana State

Digital payments are transactions that happen online or through other digital platforms without a physical exchange of money. This indicates that both the payer and the payee exchange money via electronic means. The Indian government has been implementing a number of initiatives to encourage and promote digital payments across the nation. As part of the 'Digital India' campaign, the government has an aim to create a 'digitally empowered' economy that is 'Faceless, Paperless, and Cashless.'

a. Advantages of Digital Payment:

- i. Digital payments can be made at any time and from any location on the planet.
- ii. It facilitates and expedites large-scale financial transactions.
- iii. It provides greater payment security.
- iv. You do not need to provide your card or bank account information every time you make a mobile payment.
- v. It saves you money on processing fees that would otherwise be incurred if you paid with a credit card or cash.
- vi. When you pay online, there is no risk of your money being stolen or misplaced.
- vii. You can effortlessly keep track of your payment information and all types of transactions.
- viii. Some mobile banking apps make your online payment experience better by offering different kinds of cash prizes and offers. You can enjoy it while paying your bills online.

b. Disadvantages of Digital Payment:

- i. While digital payment makes transactions easier, the apps that assist you in paying will almost probably charge a fee. You must pay third-party payment service fees.
- ii. Not all stores offer the option of making payments online. As a result, digital payments are not possible in such instances.
- iii. It may cause privacy concerns because you will be required to disclose all of your transactions and account information with third-party providers.
- iv. There may be situations when your account is hacked and your money is misused.

2. REVIEW OF LITERATURE:

Papadopoulos (2007) agreed that new technologies in e-money provide novel solutions, increase convenience and reduce costs, whereas in retail payments, suggests the possibility of a society with negligible use of cash. Even though cash remains important because it has an established position, it is anonymous, non-exclusive and still the cheapest medium for small value transactions.

Hasan et al. (2012) in their study, examine the association between retail payments and overall economic growth during the study period 1995-2009 in the European region. This study reported that migration to electronic retail payments stimulates overall economic growth, consumption as well as trade. Among various retail payment instruments, this relationship is strongest for card payments, followed by credit transfers and direct debits.

Ashish Baghla (2018) wrote an article on A Study on the Future of Digital Payments in India to identify the present trend towards the adoption of digital payments and reasons for adoption of digital payments by people in India. The study reported that it will take enough time in India to become completely cashless economy. It will require complete support from people and more awareness and knowledge among people. The problem of lack of education and digital literacy needs to be solved first to have more number of digital transactions.

C.H. Padmaja, P. V. Durga Rao (2019) in their study on the Rise and Growth of Digital Payments in India identified that there is lot of change in the payments industry. Payments transformed into digital and this sector witnessed tremendous growth, innovations and regulatory support over last few years. Digital payments started to pickup pace with the growth of e-commerce companies followed by emergence of digital wallet companies.

B. Angamuthu (2020) has studied the Growth of Digital Payments in India to know the Growth of digital payments with respect to its volume and value of transactions during the study period. It was concluded that, there is a positive growth in terms of actual volume and value of overall digital payments in the country.

3. Objectives of the Study:

- To study the different digital payment modes in India
- To analyse the growth of overall growth of digital payments and difference in growth across various transaction modes.

4. Methodology of the Study:

This paper analyses the growth of digital payments in India and also growth of selected categories during the five financial years from 2017-2018 to 2021- 2022. To analyse the growth performance during the period under study, both volume and value of transactions of five different parameters have been taken into account, namely, RTGS customer transactions, Credit Transfers, Debit transfers & Direct Debit, Card Payments and Prepaid Payment Instruments. Secondary data for the period under study has been collected from reports published by Reserve Bank of India, Journals, Books, Magazines and Websites. Mean, Compound Annual Growth Rate (CAGR) and ANOVA test is applied to draw the inference of the study.

5. Types of Digital Payments:

A. Real Time Gross Settlement

Real Time Gross Settlement (RTGS) is defined as the continuous (real-time) settlement of funds transfers individually on an order by order basis (without netting). 'Real Time' indicates that instructions are processed as soon as they are received rather than later; 'Gross Settlement' means that money transfer instructions are settled individually (on an instruction by instruction basis). This technology is designed particularly for high-value transactions.

B. Credit Transfers

Credit transfer means a payment transaction by which a credit institution transfers funds to a payee's account on the basis of a payer's order, and the payer and the payee can be the same person.

i. AEPS

Aadhaar Enabled Payment System, AEPS, can be used for all banking transactions such as balance enquiry, cash withdrawal, cash deposit, payment transactions, Aadhaar to Aadhaar fund transfers, etc. Based on Aadhaar verification, all transactions are processed through a banking correspondent. There is no need to physically visit a branch, produce debit or credit cards, or sign anything. This service is only available if your Aadhaar number is linked to the bank where you have an account.

ii. APBS

One of the unique payment systems adopted by NPCI is the Aadhaar Payment Bridge (APB) System, which employs the Aadhaar number as a central key for electronically

channelling government payments and subsidies into the intended recipients' Aadhaar Enabled Bank Accounts (AEBA).

iii. ECS (Electronic Clearing System) Credit

ECS credit is used to provide credit to a large number of recipients by making a single debit to the customer's account, such as a dividend, interest, or salary payment.

iv. IMPS

Immediate Payment Service (IMPS) provides a 24-hour interbank electronic fund transfer service using mobile phones. IMPS is a powerful tool for immediately transferring funds between banks in India via mobile, internet, and ATM. National Payments Corporation of India (NPCI), India's main retail payment company, provides it.

v. NACH

National Automated Clearing House (NACH) is a service provided by NPCI to banks that attempts to facilitate interbank high volume, low value debit/credit transactions that are recurring and electronic in nature. The system, which is managed by NPCI, uses the Core-Banking Solution (CBS) of participating banks for centralised posting of inbound debit/credit transactions.

vi. NEFT

National Electronic Funds Transfer (NEFT) is a nationwide payment system that allows for one-to-one transfers of funds. Individuals, organisations, and corporate firms can use this programme to electronically transfer payments from any bank branch to any other bank branch in the country that is a participant in the scheme. The Reserve Bank of India provides it.

vii. UPI

The Unified Payments Interface (UPI) is a system that integrates several bank accounts into a single mobile application (of any participating bank), combining different banking services, smooth fund routing, and merchant payments under one hood. It also handles "Peer to Peer" collect requests, which can be scheduled and paid according to need and convenience.

C. Debit Transactions

i. Bharat Interface for Money (BHIM)

Bharat Interface for Money (BHIM) is a fast, safe, and dependable way to make digital payments using your mobile phone using the UPI (Unified Payment Interface)

platform via a mobile app and the USSD (Unstructured Supplementary Service Data) platform via the *99# service.

ii. ECS Debit

ECS debit is used to offer a single credit to a specific institution while boosting debits to a number of consumer or account holder accounts, like in the case of utility payments like phone and electricity bills.

iii. NETC

The National Electronic Toll Collection (NETC) initiative, which provides an interoperable nationwide toll payment solution together with clearing house services for settlement and dispute management, was created to suit the electronic tolling requirements of the Indian market.

D. Card Payments

Cards are most generally used payment methods, and they offer a variety of features and benefits such as payment security, convenience, and so on. The primary benefit of debit/credit or prepaid banking cards is that they may be used for other sorts of digital payments.

i. Debit Card:

Debit cards are used to make purchases in stores and make cash withdrawals from ATMs. You must have sufficient funds in your account or an approved overdraft to support the transaction because the money is automatically deducted from your current account when it is spent.

ii. Credit Card:

A credit card is a type of payment card that is given to customers (cardholders) to allow them to pay a merchant for products and services based on the amount of debt they have accumulated (i.e., promise to the card issuer to pay them for the amounts plus the other agreed charges).

E. Prepaid Payment Instruments

Prepaid Payment Instruments (PPIs) are payment instruments that enable the purchase of goods and services, including the transfer of funds, financial services, and remittances, against the value stored within or on the instrument, according to the definition given by the RBI in accordance with the Payment and Settlement Act, 2005.

Smart cards, online accounts, online wallets, stripe cards, paper vouchers, and other prepaid payment instruments are examples. The basic goal of these instruments is to gain

access to previously prepared funds. As a result, the essential goods can be purchased without the need for a physical exchange of cash or a credit card.

6. Growth of Digital Payments in Volume:

There are various components in digital payments like RTGS, Credit Transfers, Direct transfers & Direct debit, Card payments and prepaid payment instruments. Table no-1 presents the average volume of payments for a period of 5 years and their Compound annual growth rate during the study period.

Table-1
Growth of Digital Payments in Volume (in crore)

Year	Large Value Credit Transfers (RTGS)	Credit Transfers	Debit transfers & Direct Debit	Card Payments	Prepaid Payment Instruments	Total
2017-18	1244 (0.85)	58793 (40.29)	3788 (2.59)	47486 (32.55)	34591 (23.71)	145902 (100)
2018-19	1366 (0.58)	118750 (50.67)	6382 (2.72)	61769 (26.36)	46072 (19.66)	234339 (100)
2019-20	1507 (0.44)	206661 (60.17)	8957 (2.61)	73012 (21.26)	53318 (15.52)	343455 (100)
2020-21	1592 (0.36)	317868 (72.66)	10457 (2.39)	57787 (13.21)	49743 (11.37)	437447 (100)
2021-22	2078 (0.29)	577632 (80.28)	12222 (1.70)	61786 (8.58)	65812 (9.15)	719530 (100)
Average	1557.4 (0.41)	255940.8 (68.04)	8361.2 (2.22)	60368 (16.05)	49907.2 (13.27)	376134.6 (100)
CAGR	13.69	77.04	34.02	6.8	17.45	49.02

Source: RBI Annual Reports from 2017-18 to 2021-22

As per above table the CAGR of total digital payments in terms of volume of transactions is 49.02 percent. Component wise credit transfers reported highest growth rate with 77.04%, followed by debit transfers with 34.02%, prepaid payment Instruments with 17.45%, RTGS with 13.69% and only 6.8% card payments. On an average during last 5 years in total digital payments in terms of volume of transactions credit transfers contributing highest percentage with 68.04, card payments contributing 16.05%, prepaid instrument contributing by 13.27% very least contribution by debit transfers & RTGS.

ANOVA Test

The ANOVA test is used to know whether there is any significant difference between the means of different digital payment modes. For which the following hypothesis is formulated.

H_0 : There is no significant difference in the growth in volume across the categories of digital payments.

Table-2 shows the output of the ANOVA analysis. We can see that the significance value is 0.002 (i.e., $p = .002$), which is below 0.05. and, therefore, there is a statistically significant difference in the growth in volume across the categories of digital payments.

Table-2
ANOVA Table

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	22431270.96	4	5607818	6.448	.002
Within Groups	79843970.08	20	3992199		
Total	102275241	24			

Source: SPSS Output

7. Growth of Digital Payments in Value:

Growth in various categories of digital payments in terms of value is presented in table no-3. The total digital payments reported 6.22% of compound annual growth rate during the study period. Among all categories debit transfers reported with highest percentage, followed by credit transfers, prepaid payment instruments, card payments and RTGS. Average contribution across the categories of payments during the 5 years period of study, RTGS is 78.49 percent followed by credit transfers with 19.22 per cent, less than 2 percent contribution by all other categories debit transfers, card payments and prepaid payment instruments.

Table-3
Growth of Digital Payments in Value (Rs. Lakh Crore)

Year	Large Value Credit Transfers (RTGS)	Credit Transfers	Debit transfers & Direct Debit	Card Payments	Prepaid Payment Instruments	Total
2017-18	1167.12 (85.20)	188.14 (13.73)	3.99 (0.29)	9.19 (0.67)	1.42 (0.10)	1369.87 (100)
2018-19	1356.88 (82.81)	260.98 (15.93)	6.56 (0.40)	11.97 (0.73)	2.13 (0.13)	1638.52 (100)
2019-20	1311.56 (80.81)	285.72 (17.61)	8.26 (0.51)	15.36 (0.95)	2.16 (0.13)	1623.06 (100)
2020-21	1055.99 (74.64)	335.22 (23.69)	8.72 (0.62)	12.94 (0.91)	1.98 (0.14)	1414.86 (100)
2021-22	1286.58 (73.76)	427.23 (24.50)	10.38 (0.60)	17.02 (0.98)	2.94 (0.17)	1744.15 (100)
Average	1222.89 (78.49)	299.46 (19.22)	7.58 (0.49)	13.29 (0.85)	2.12 (0.14)	1558.09 (100)
CAGR	2.47	22.76	26.98	16.66	20.03	6.22

Source: RBI Annual Reports from 2017-18 to 2021-22

ANOVA Test

H_0 : There is no significant difference in the growth in value across the categories of digital payments.

Table-4 shows the output of the ANOVA analysis. We can see that the significance value is 0.000 (i.e., $p = .000$), which is below 0.05. and, therefore, there is a statistically significant difference in the growth in value across the categories of digital payments.

Table-4
ANOVA Table

Source of Variation	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	5655781	4	1413945	308.215	.000
Within Groups	91754.16	20	4587.708		
Total	5747536	24			

Source: SPSS Output

8. Conclusion:

Digital payment systems are the significant connective aspect of every economic system, including India. It facilitates purchase of goods and services (payment of utility bills, insurance premiums, etc.) and sending money to friends, family, and business partners as well. Among various categories of digital payments in terms of Volume, credit transfers reported highest compound annual growth rate and it is contributing maximum percentage in total digital payments, this is because of awareness and increase in use of UPI. Even CAGR of RTGS is less, it is contributing on an average 78.49 percent of digital payments in terms of value. The overall digital payment transactions recorded significant growth in both volume and value, but there is a statistically significant difference in the growth across the categories of digital payments.

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