

CHAPTER 1

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1. Introduction:

The adoption of technological advances in India is changing rapidly. Things have increased accessibility and are faster to access. Everything is accessible over the internet platform. Things we do on physical or manual platforms are replaced with online platforms, contributing to e-commerce. Electronic commerce is the term used to describe utilizing online platforms for the sale and purchase of products or services and transferring money and data to execute these transactions. The first online sale occurred on August 11, 1994, when a person used his website, Net Market, an American retailing platform, to sell a CD to a friend. This marked the beginning of electronic commerce over time. This is the first example of a consumer purchasing a product from a business through the World Wide Web or “e-commerce” as we commonly know it today.¹ Consequently, e-commerce has emerged to increase the accessibility of products through online shopping centers and retailers for exploration and acquisition. In India, mobile penetration is 119 crore mobile connections, and 48 crore people use the Internet on mobile. Nowadays, many organizations in India are joining the digital market with the rising literacy rate; the immense expansion of the internet has raised the expansion of e-commerce in the nation which has made it easier to allow digital payments using an online method of payment for transactions. Since internet-based purchasing and banking are so common, electronic commerce methods of payment have grown in popularity.

1.0. Evolution of Money:

A form of exchange like money makes trading things like services and commodities easier. It serves as a financial indication, giving a standard way to compare the relative values of various commodities and services. Additionally, money serves as an instrument of value, enabling people to get started with cash for future requirements. Money exists a different kinds in contemporary economies, such as coins, banknotes, and digital currencies. Its main purpose is providing a generally recognized and uniform method of performing operations to get into the drawbacks of barter systems. According to history, the term "money" comes from the Latin word "Moneta," which refers to the Roman goddess Juno in the temple where cash was created (Crowther, 1972).

¹ Retrieved from Social Network/ E-Commerce site-BalletProjeCy,tv-Nexidyne Corporation
<http://www.nexidyne.com/balletproject-tv/>

Evolution of Money: From Barter Systems to Digital Era²



Figure: 1.1 Evolution of Money

(Source: <https://passkit.com/blog/the-evolution-of-wallet/>)

Barter Systems: Before the invention of money, bartering mechanisms were used for exchanging goods and services. Bartering entailed trading one kind of goods or service for a different one, although it was ineffective and constrained by the simultaneous occurrence of two desires.

Commodity Money: When communities developed, people started utilizing commodity money, which was valuable and intrinsically an instrument of exchange. Some items frequently exchanged were grains, beads, shells, and salt.

Metal Coins: Metal coins emerged as a significant development in the history of money. Metal coins were perfect for trading because they were easy to carry and simple to divide. Coinage quickly became a part of cultures.

Paper Money: During the Tang Dynasty, paper money first appeared in China and then spread worldwide. Fictitious currency, supported by the Government's guarantee rather than a tangible asset, replaced paper money, initially supported by precious metals

Banking Systems: The creation of banking networks made it possible to issue banknotes and facilitate money transactions. Banks were influential in creating modern economies thanks to their provision of monetary services, including financing, deposit taking, and fund transfer.

Digital Currencies: Digital currencies like Bitcoin and other cryptocurrencies have emerged because of the development of internet access and electronic devices. These virtual currencies are built on decentralized blockchain networks

²Retrieved from <https://digikhata.in/blog/the-evolution-of-money> as on 21/06/2024

and function autonomously of monetary authorities. The journey of currency from barter systems to digital currencies is a prime example of economic advancement and human inventiveness. The evolution of money has followed the demand for convenient, safe, and effective ways to transact. With their simplicity and safety, credit cards, debit cards, and the way online payments are made have evolved how people trade.

1.1 Digital Payments in India:

The use of digital payments is a marketplace in India that offers solutions for various kinds of transactions. This means transactions are done digitally. Digital payments, or electronic payments, allow us to transfer money quickly. After demonetization, the enlargement of electronic payments has increased rapidly. Most people are using digital payment rather than cash. To revert the black money to the Indian government, there are indications that cashless transactions won't be far off. Moving towards a digital economy, the Indian Government emphasized the electronic payment method.

1.2 A Timeline – Evolution of Indian Digital³

Innovation has affected every area of daily existence, such as how we make buys and pay. Digital commerce has grown dramatically in the last few years, and digital sales have surged. Nowadays, Indian consumers swipe and touch their cards or enter payment details through their mobile devices and tablets. The journey from bartering for items to a single-click transaction has proved long and thrilling. Begin to have a glance at a few critical milestones that affected the evolution of online payments in India:

³ Retrieved from <https://colorplast.in/blog/history-of-digital-payments-in-india/>

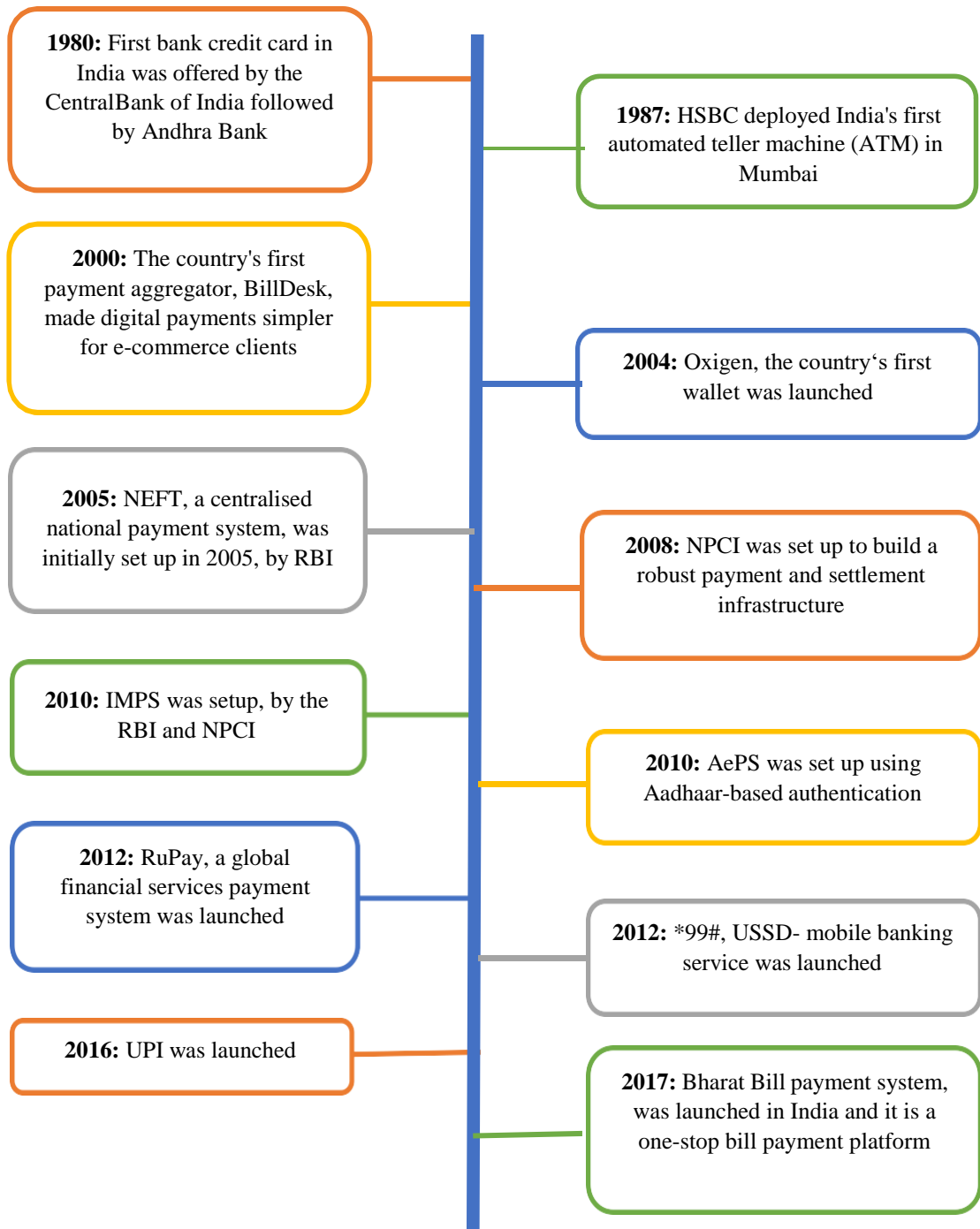


Figure 1.2: Digital Payments in India

(Source: Authors complement)

Today, we have many choices regarding digital payments, including Virtual wallets and online banking, Plastic currency, UPI, AEPS, etc. To promote a cashless society, the Government of India initiated new modes of online payments under the NPCI.

1.3 National Payment Corporation of India (NPCI)⁴:

(Mrunal Joshi, December 2017) NPCI serves as the governing body for all of India's commercial payment methods. It aims to allow all Indian citizens unrestricted access to e-payment services, and RBI and IBA assembled it in April 2009. In December 2008, according to the provisions of the Payment and Settlement System Act 2007, for creating a robust payment and resolution infrastructure in India. It is incorporated as a non-profit organization to provide infrastructure to the entire India's banking sector for physical and Technological mechanisms for resolution and payments. The company is focused on bringing innovations in the retail payment system through technology to achieve greater efficiency in the operation of the funding system.

NPCI, during its journey, had a notable impact on the country's retail payment system. NPCI has launched various products and services. This can be described as follows:⁵

1 National Financial Switch (NFS January 2010): The most extensive system of networked automated teller machines (ATMs) in India is called National Financial Switch (NFS). On December 14, 2009, NPCI acquired the 37-member National Financial Switch (NFS) ATM network, which links approximately 50,000 ATMs. The network had formerly belonged to the Institute for Development and Research in Banking Technology (IDRBT). The NFS ATM provider has expanded rapidly in the last several years, becoming the nation's top multilateral ATM network. It had 1,307 members as of May 24. These individuals included 114 Direct, 1,148 Sub, 41 RRBs, and 4 WLAOs that had access to a 2.62 Lakh ATM (including cash deposit machines and reuse facilities) via the NFS connection.

2 Immediate Payment Service (IMPS-November 2010): Strong and reliable real-time money transfer is offered by IMPS. This interbank digital money transfer system is available instantly, around the clock, and through a variety of methods, including the USSD (*99#), ATM, branch, mobile, and internet.

3 The Aadhaar Enabled Payment System (AePS-November 2010): Utilizing the Aadhaar identification, corporate correspondents of any bank can conduct online interoperability banking transactions at PoS (MicroATM) with the support of AePS

⁴Retrieved from Mobile Money Identifier (MMID) -

BankExamsToday.<https://www.bankexamstoday.com/2017/12/mobile-money-identifier-mmid.html>

⁵Retrieved from <https://www.npci.org.in/who-we-are/milestone>

method that is managed by banks.

4 Cheque Truncation System (CTS-April 2011): The RBI is thinking of replacing the current method of making payments based on actual checks with a new process known as the "Cheque Truncation System" (CTS). This online image-based check clearance system eliminates physical check moving by capturing check images and Magnetic Ink Character Recognition (MICR) data at the gathering bank location and transmitting them virtually.

5 RuPay (March 2012): NPCI has introduced an innovative card payment method called RuPay, it was designed to carry out RBI's goal of providing a domestic, freely circulated, multilateral Technology that will allow all Indian financial services companies to get the benefits of digital payments.

6 *99# Service (August 2014): The *99# facility was introduced to provide banking facilities to all citizens of the nation. Consumers of banks can use this facility by using an interactive menu that appears on their mobile device and dialing *99#, which is a "Common code utilized by all Telecom Service Providers (TSPs)" on their cell phones.

7 Unified Payments Interface (UPI April 2016): The technology combines various banking functions, smooth funding navigation, and payments from merchants under one roof by enabling numerous bank accounts into a single mobile application (of any collaborating bank). Additionally, it supports "Peer to Peer" collection requests, and this may be planned and funded according to flexibility and necessity. Every bank has a unique UPI app on iOS, Windows, and Android smartphones.

8 National Electronic Toll Collection (NETC FASTag December 2016): An RFID passive tag called NETC FASTag is utilized for paying tolls by debiting an individual's connected current/savings account. It is attached to the car's display and allows drivers to pass by toll booths without waiting to pay.

9 Bharat Interface for Money (BHIM December 2016): With the support of the Unified Payments Interface (UPI), you can quickly, easily, and simply execute payments with the Bharat Interface for Money (BHIM) app. Utilizing simply a cell phone number or virtual payment address (UPI ID), users can send and receive funds instantly between banks.

10 Bharat QR (March 2017): The NPCI and ICS (International Card Schemes) collaborated to create a set of universal QR code requirements. Retailers can post such QR codes on their business premises, and consumers can use the Bharat QR-equipped

application in an integrative setting for scanning the codes to make payments using their card-connected account, VPA, IFSC + Account, or Aadhaar.

11 Bharat Bill Payment System (BBPS October 2017): BBPS's consumer line is Bharat BillPay. NPCI is the inspiration behind the RBI-conceptualized Bharat bill payment system. It is a single point of contact to handle all billing transactions, offering consumers throughout India an "Anytime, Anywhere" bill payment service that is interconnected, dependable, and secure.

1.4 Government's Initiatives: Demonetization:

(R.Rupa, July 2017) In a significant move, the Indian Government declared that, from November 8, 2016, at the stroke of twelve, the 500 rupee and 1,000 rupee note denominations would discontinue being recognized as money. This ban aims to curb corruption and black money, eliminate counterfeit notes, stop funding terrorism to promote online payment and minimize the need for cash in the country. The study aims to review our currency and transition to a digital economy. Indian citizens utilizing virtual banking facilities has increased significantly since demonetization. The above impact of demonetization increase in cashless transactions. Indian Government stated that demonetization shortly has changed frequently. However, the latest area is which is moving India towards a cashless economy. Presently, different kinds of options are accessible for transactions in the Indian economy.

In the banking sector, there are two types of transactions: cash and cashless transactions. Cashless transactions are conducted using ATMs, mobile banking, e-wallets, and transaction apps like Payment POS machines. The current scenario shows that cashless transactions are increasing, which indicates the impact of demonetization.

2.5 Government Initiatives:⁶

The following are a few of the Government's measures for promoting digital payments:

DigiVaarta: This platform was introduced to raise the popularity of the DIGIDhan and the BHIM app.

DIGI shala: It was introduced on the DD channel to encourage online payments.

DigiDhan Abhiyan campaign: The goal of the DigiDhanAbhiyan initiative is to encourage cashless transactions.

⁶ It was retrieved from a project report on A Study on the Impact of COVID-19 on Digital Payment in India as of September 2021.

Vittiya Saksarta Abhiyam: The MHRD launched the VittiyaSaksartaAbhiyam program to encourage young people to use a digital economy.

Lucky Grahak Yojana and DigiDhan Vyapar Yojana reward customers and retailers with cash rewards for individual expenses.

TDS Deduction at Source: To discourage making business payments in cash, a 2% tax deducted at source (TDS) would be applied to withdrawals from bank accounts exceeding Rs. 1 crore in a year.

Use of Low-Cost Digital Modes: Any organization using a yearly income of over fifty crores must provide its clients with inexpensive digital payment methods, free of fee for both consumers and merchants. Utilizing NEFT, RTGS, Aadhaar Pay, BHIM UPI, and Aadhaar Pay can encourage a cashless economy.

Digital Smart Cards: Government employees' use of online intelligent cards to pay social security pensions reduced the amount of bribes. Become digitized to save money on fuel, diesel, and insurance: When purchasing diesel and gasoline online with online wallets, debit cards, or credit cards, a 0.75 percent reduction is applied.

Discount on Rail Tickets: Passengers who buy their tickets electronically for train journeys will be given a 0.5% reduction each month.

Insurance worth INR 10 lakh: If tickets are bought online, passengers taking distant communication trains on Indian Railways would be covered for unanticipated events up to Rs 10 lakh.

Rupay Card from NABARD: NABARD offers Rupay cards to holders of Kisan credit cards.

Ten percent off highway tolls: transactions made via an electronic payment method are accessible.

1.6 Customer Education and Cashless Transaction:

In India, The importance of electronic payment transactions between 2019 and 2023 is anticipated to increase by an annual growth of 20.2%. Business retailers and consumers need to be educated because of its widespread use. Moving payments towards cashless transactions allows institutions to focus on their core expertise of imparting education. Digitization for payments, like collecting, processing, and tracking expenses, will enable customers to focus on education to handle it. Merchants are crucial to solving the puzzle of online payments.

They must be educated first. Electronic is starting to the standard of life. The Government is investing heavily in making the nation a knowledge-based and contactless society. Cashless means using less cash everywhere, such as Public transport, public Academic institutions, pharmaceuticals, and Grocettollsgrocery. It promotes public welfare programs, and consumers get satisfaction with incredible speed and free transactions. It is also beneficial for business houses to grow their customer base. The cashless campuses are also helpful for society at large.

The accessibility of cheap Internet and smartphones has played an essential part in the country's Internet adoption. However, it still needs to promote digital transactions in rural India. Debit and Credit cards are becoming more accessible to rural people as an outcome of the implementation of Rupay cards. However, a solid digital structure for making use of cards is still pending in the country. The concept of a digital economy will significantly contribute to India's development. However, in rural India, the population must know about the cashless economy.

The older generation is primarily uneducated. They need to gain the necessary knowledge of cashless transactions, so finding a solution to such problems will be challenging for the Government. The Government must arrange to offer concessions for rural-based digital transactions to make them more attractive to rural users. Only then can it prove to be a blessing for the people.

1.7 Problem faced by the customer in adopting cashless transactions:

1 Poor connectivity and Internet support service: More internet access is required in rural regions in our nation where people cannot access the 2G network. This makes it challenging to commence the idea of a digital economy in every region.

2 Inadequate knowledge regarding digital technologies: People need to recognize digital technology, such as Mobile and Computer. They cannot evaluate and make utilization of electronic payment services or Debit cards and Credit cards. So, people must be educated about the world of digital media.

3 Availability of Connectivity: People have internet connections and mobile phones, but significant problems arise due to the availability of internet speed and the many places where internet connection is not available.

4 Less availability of devices: Another area for improvement in implementing digital transaction modes in India is the affordability, availability, and functionality of

devices that support online transactions, such as computers and Smartphones. With such devices, people can make digitization universal.

5 Link failures: Many customers have faced problems due to link failure. The amount is sometimes deducted when the link fails at the time of payment. Therefore, this is the major problem faced by customers who are adopting cashless transactions.

6 Inadequate infrastructures: Few ATMs and POS terminals are available. In a vast nation such as the nation of India, there are only around 2.3 lakh ATMs and only 14 lakh POS. This concentration is higher in metro cities, and this decline is in rural areas. This is also one challenge because a digital economy can be achieved largely in metro town, where people have greater education and spend more, but in rural areas, it is much less.

7 Security over digital payment: Security is the central issue in a cashless economy because of the risk of hacking, creating fake mobile applications and spyware that steal information, or social engineering tactics that make you reveal your login credentials. So, digital payment security is a critical issue for customers adopting cashless transactions.

8 Charges in card payment: Many places charge 1-2% for card payments, mostly credit card payments. Banks take these charges, so people want to avoid paying extra charges.

1.8 Safety and Security of Digital Payments:

In India, cashless transactions will increase in 2020. This upward trend is going to continue with increasing numbers of digital payments. As such, adopting digital payments will encourage safe and secure digital transactions. Security is the most important factor. The security and confidentiality of digital payments to banking and other financial entities are governed by the RBI. RBI has guided reducing customers' liability and made banks responsible for protecting consumers' funds.

Controlling fraud is essential to increase consumers' confidence in digital payments. RBI has made rules to make customer's transactions safe and secure. Cooperation would be required to manage fraud and a small kind of information sharing across the industry. One remedy is that all incidents of fraud, including details of transactions, should be reported to the regulator. Which are suitable for customer grievances relating to unauthorized transactions. The resolution must include compensation for fraud that they suffered and a report back to

the fraud registry. To improve trust within the system, the RBI must ensure that when fraud is committed, the perpetrators are arrested and prosecuted to the every aspect of the lagislation. The case should be disclosed because of that customers have confidence in the bank's ability to act and prevent future offenders. The committee has recommended that the PSO should maintain a grievance redressal system. Fraud reports are often routed through that system. The victim must be reimbursed promptly when investigating the complaint.

2. An overview of the study:

2.1 Plastic Money:

Meaning of Plastic Money: A common term for credit cards, particularly when they took advantage of purchasing. Unlike paper and metal currencies, the "plastic" element of this word means the creation of credit cards made of plastic. The term "money" refers incorrectly to credit cards, and this does not constitute a type of money. Credit cards are not currency and are not considered a portion of the entire volume of currency in the world's economy; however, they do make payments easier as they are considered liabilities instead of assets.

An Overview: Plastic money originated in the 1900s moment the United States of America introduced its first plastic card. The idea behind using plastic money is to make the payment system cashless. Plastic money is a phrase utilized to represent hard plastic cards used in day-to-day life instead of actual bank notes. They come in several forms, for instance, credit cards, debit cards, Charge cards, prepaid cards, and gift cards.

The Bank of India actively introduced plastic money as cards in the 1990s. Plastic cards provide an easy way to make financial transactions without carrying cash. Plastic money is used predominantly for the hard plastic cards we use daily instead of actual banknotes. It is also known as Polymer Money. Instead of actual banknotes, we use plastic money; generally, it is a substitute for banknotes or currency. Plastic money has reduced the application of depositing and withdrawing cash in banks. It is an innovative and easier way of paying for goods and services. It provides the benefits of banking anywhere, anytime. The proposed plastic money will reduce the chance of counterfeiting. It is possible to trace the financial transactions made with cards. Developing A plastic money system will enable the Government to trace suspected sources of black money. The utilization of cards has supported the development of e-commerce. Payments can be made quickly using plastic money. So, plastic money provides extra safety as there is usually the risk of carrying cash, and plastic money can reduce the risk. Debit Cards and Credit Cards are the primary types of plastic money frequently used nowadays. Everybody knows a basic idea about ATM cards, Debit Cards, and Credit cards, and these cards are utilized for various purposes like online ticket booking, Utility bill payment, online shopping, etc.

2.1.1 History of Plastic Money:⁷

Credit cards have developed into a reliable and secure way to make purchases. Users of credit cards now have more purchasing power because to connect to the internet. To encourage customers to make utilization of their cards, banks provide features including savings strategies, cash-back offers, along other promotions. Customers can enjoy the ease of cards, with debit cards without concern about accruing debts. Credit and debit cards encourage consumers to use them instead of cheques or currency due to their ease of use, privacy, and incentive programs.

Origins of Credit Cards:

Individual retailers and businesses developed the first credit cards. These cards could only be used by the company that provided them, and they only became available in certain places. Users found these cards handy, yet they also offered benefits like loyalty to the corporation and excellent service, which benefited the retailer and also to the consumer. The Dinner's Club card did not exist until 1950 when a customer recognized there needed to be a better option than using cash alone after forgetting his wallet at home. Despite being mostly utilized for entertainment and travel expenses, it was the first credit card meant for general use.

Plastic takes on a standard role:

The material or cardboard was used to make the original Diner's Club cards. Everything reversed in 1959 when American Express introduced the first plastic credit card. A method of imprinting the card used for making payments at the cash register was developed by American Express. Subsequently, the consumer received a bill, which was payable in full each month. As of 2010, many American Express cards continue to function in this manner. American Express did not start letting customers pay down their balances gradually with more card choices until the end of the 1980s.

Associations for Bank Cards:

An "open loop" or general-use card was introduced by Bank of America in 1966. Unlike the new "open loop cards," such "closed loop" contracts restricted the use of cards like Diners Club and American Express to specific retailers. More restrictions and interbank coordination were necessary for the newly established general-purpose framework. He started developing modern credit card technology and included additional security functions. Master Cards and Visa became the dominant platforms. Nowadays, though, there really cannot be much of a

⁷ Retrieved from <https://www.scribd.com/doc/93458769/Plastic-Money-Intro>

distinction between them, and most of retailers take both card issuers.

Expansion of Debit Cards:

When the Visa Association of Cards started debit cards in 1989, they raised the bar for credit card acceptance. Customers' financial accounts were connected to these cards. With these recently introduced cards, payment was now taken out of the bank account when sale instead of being written on cheques. As it occurs the cash was unable to be retrieved, this facilitated it being simpler for the retailers to seek down the consumer and let them verify whether the payment was accessible. Debit cards were a safe substitute for cash and cheques since they eliminated the need for customers to write checks at the moment of sale, which was handy and comfortable.

2.1.2 Types of Plastic Money:⁸

Credit Card: “A small plastic card that can be used as a method of payment, the money being taken from you at a later time.” -Cambridge Advanced Learner’s Dictionary & Thesaurus.

Credit cards are virtual currency that may be applied to make purchases at more than 20 million establishments worldwide. To make payments for our daily purchases, all we have to do is hand over the card and confirm the payment sheet. Everyone will reimburse the money to the issuing institutions at a future date. The issuing institutions pay the retailer on our behalf of us.

Debit Card: Debit cards function similarly to credit cards in that they may be used instead of cash or checks for purchases. Yet, banks are going to provide money to customers if they currently have an open account. The whole amount charged is immediately deducted from our financial institution's balance whenever a debit card is utilized for purchasing.

Never take out a credit card borrowing!- This refers to the reason only businesses that have electronic swipe devices that give them permission to view and deduct payments can access their banking accounts digitally and utilize debit cards.

Charge Card: A charge card has every functionality found on a credit card. However, you must pay the whole amount charged before the deadline after utilizing a charge card. In the event you somehow do not, you will probably be charged a high late fee along with being rewarded as a defaulter.

⁸ Retrieved from <https://www.scribd.com/doc/93458769/Plastic-Money-Intro> as on 21-05-2024

Even if you miss a payment deadline when using a credit card, you are not considered in default. Your subsequent billing statement will include a 2.95 percent late payment fee (the exact amount varies depending on the specific bank).

Amex (American Express) Card: American Express, or Amex, is a popular brand of charge card. This card operates independently of the MasterCard or Visa networks and includes partnerships with specific retail establishments. Cards with credit: Keep these guidelines in mind. This card might not be accepted at many locations and is generally intended for those with substantial incomes and businesses. A huge variety of exclusive benefits are available to customers of American Express card holders.

Dinner Club Card: Dinner Club card is a branded charge card. A host of exclusive benefits are accessible to Diners Club cardholders. For example, you can set your spending limit as a cardholder. Furthermore, the card is independent of the MasterCard or Visa networks and has partnerships with specific merchant establishments. Even so, this card could not be accepted at many establishments because it is generally intended for high-income group groups. It might be wise to find out ahead of time whether a member facility accepts the card or not.

Global Card: When traveling overseas for business or pleasure, global cards give you the mobility and flexibility of using a credit card in place of cash or traveler's checks.

Co-branded Card: Co-branded credit cards are those that are offered to customers by credit card firms that have partnered with well-known brands to provide special advantages. A debit card with a twist: the Citi-Times card offers you free admission to Times Music incidents, an exclusive price reduction on cassette tapes, and all the advantages of a Citibank credit card.

Master Card and Visa: Global non-profits MasterCard and Visa are committed to fostering the expansion of the card industry globally. Companies have established a huge network of outlets for merchants so that customers may use their credit cards to make purchases anywhere in the world.

Smart Card: An electronic chip found on smart cards is used to hold money. This is particularly handy whenever you are required to pay for little expenses like coffee and bus fares. To utilize this card, you are not required to provide identity, a signature, or authorization for payments. When making a transaction, the precise amount is taken from the smart card and retrieved by smart card readers and changes can not be made at the moment, this substance is only used irregularly in India and is only available in highly developed nations like the US.

Photo Card: You possess what is being addressed to as a "photo card" if your picture has been printed on it. It is secure to do this because it aids in identifying the credit card holder. Furthermore, your picture card frequently doubles as your identity card.

2.1.3 Merits of Plastic Money:

- 1. Convenience:** Plastic money provides a simple method for creating financial transactions without carrying cash. It also provides the benefits of anywhere and anytime banking.
- 2. Supports the growth of E-commerce:** Utilizing a card implies supporting the growth of e-commerce, which improves economic growth.
- 3. Purchasing power:** Debit or Credit cards make it easier to buy things. We can now carry a small amount of money. Plastic cash is accepted anytime and anywhere.
- 4. Check Counterfeiting:** The proposed plastic currency notes will reduce the chances of counterfeiting.
- 5. Check on Black Money:** Credit card transactions can be traced, and plastic money will make it easy for the Government to trace black money.
- 6. Time-saving:** Individuals can purchase anything anywhere through Plastic Money i.e. Debit cards or Credit cards without spending money. You must provide the seller with your card information and settle your order. Using plastic money to complete operations expedites the process.
- 7. Safety:** If you lose your Card, the bank or financial institution will provide you with a replacement. The bank immediately blocks the Card, so it is 100% safe without any tension.

2.1.4 Demerits of Plastic Money:

- 1. Fraud:** In the case of stolen credit cards, the thief may use them directly to get information. Getting a clone of any Debit or Credit card that works like the original is possible today.
- 2. Less Availability:** In many cases where there is no facility to use the Card.
- 3. Increased Debt and rate of interest:** Corporations and financial institutions charge a high rate of interest on Credit cards if the customer fails to pay off by the fixed date of the particular month.
- 4. An Issue with Magnetic Strip:** The credit card consists of a magnetic strip that gets worn out due to extensive use of it. In case of this issue, they must wait until they receive a new card. The new Card may take a minimum of 48 hours to get active.

2.1.5 Number of Debit Card transactions in India FY 2019-2024, with estimates until 2028 (in billions):

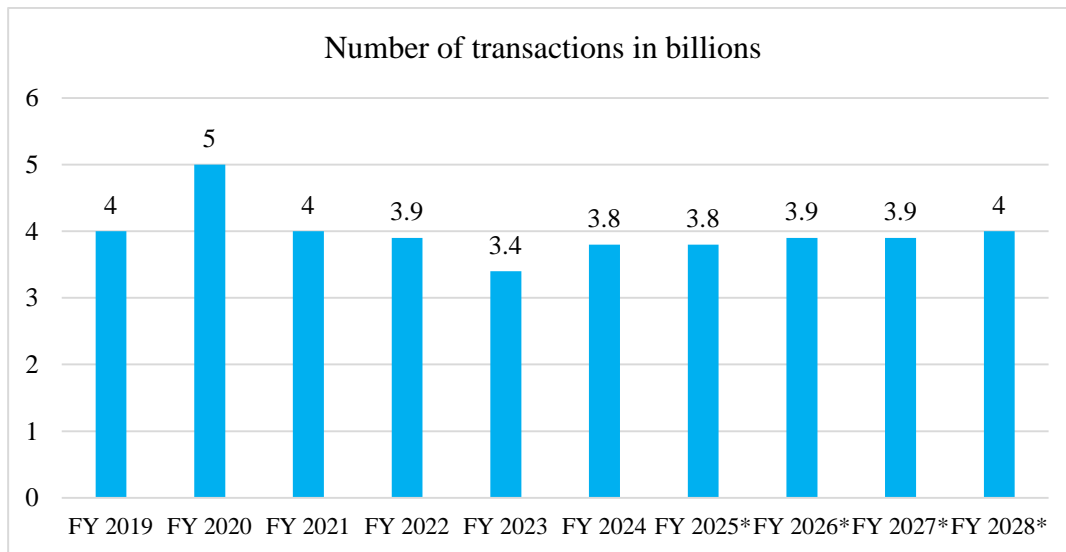


Figure 1.3 (Source: Statista 2024)

3.8 billion transactions was done through Debit cards for make payments in India during the financial year 2023. This was predicted to increase to over four billion operations in the nation's fiscal year 2028.

2.1.6 Credit Card Issuance in India 2017-2024 (in millions):

In India, the credit card market has developed significantly. Numerous advancements and technological modifications are taking place in this field. Efficient enrolling processes, unique card products, customized offers and rewards, and improved Smartphone applications are just a few of the latest innovations that have been proven to be very helpful to current clients and draw in additional ones. Issuers of credit cards are also working to increase awareness and innovate in this sector.

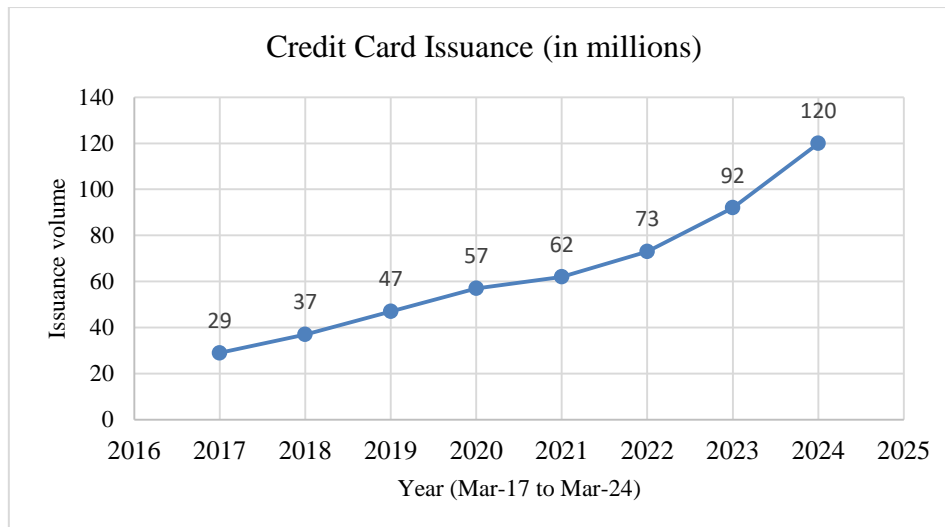


Figure 1.4 Source: RBI Data and PwC payments handbook 2021–22

Throughout the previous five years, India's credit card market has expanded at an average increase in growth per year (CAGR) of 20%. In July 2022, more than 78 million credit cards will be presented. Furthermore, the entire sum of money utilized on credit cards in May 2022 was INR 1.13 lakh crore, the most significant amount ever. Even though credit card spending climbed significantly, the COVID-19 epidemic during FY 2020–21 caused the expansion to turn, raising credit card residing by only 9%. RBI also made a few measures, prohibiting several major credit card companies from launching new credit cards in the country.

2.2 Virtual Wallet (Digital Wallet):⁹

A digital wallet is the digitized version of a traditional wallet that keeps your money, such as a debit card, credit card, etc. In general, the term "Mobile Wallet" refers to "Digital Wallet", "Wallet Passes", "Wallet Card", or "Mobile Wallet passes." A digital wallet allows an individual to make e-commerce transactions. E-transactions can be done quickly through computers, tablets, or smartphones. The bank account of an individual user is linked to their digital wallets. Virtual wallets can be used in many places to pay utility bills, recharge mobile phones, make bus movie ticket bookings, and transfer funds between accounts. Many products and services, such as Paypal, Google Wallet, Apple Pay, and m-pesa, could be utilized as a mobile wallet. Many wallets, such as Paytm, Mobikwik, Freecharge, and Oxygen, are popular in India. Millions of people use them daily to make payments. Mobile wallets have become so popular quickly that we are progressing towards a cashless economy. Mobile Wallet has exploded recently and has grown significantly since the demonetization

⁹ Retrieved from https://ijrar.com/upload_issue/ijrar_issue_20542959.pdf as on 11/08/2019

drive by the Government of India. The demonetization of Rs. 500 and Rs. 1000 notes has forced a lot of places to accept digital payments. Mobiquick, Paytm, and Freecharge are being accepted as toll plazas. In Mumbai, Freecharge is IRCTC agrees with a choice for paying "Police Challan" Mobiquick. Reliance Jio plans to receive 10 million merchants on board for its Jio money solution. This entire app aggressively targets smaller merchants to ensure they are accepted at more and more places.

(Shubham Badak, 2023) Dr.Raghuram G. Rajan, the Governor of the Reserve Bank of India, presented the Unified Payments Interface (UPI), a real-time payment system, to the National Payments Corporation of India (NPCI) on April 11, 2019, in Mumbai. With UPI, sending and receiving payments on your mobile device is simple in India. Connect a bank account to the UPI applications, and a unique UPI ID is generated. Using only the recipient's virtual payment address (VPA) and a few linked accounts with banks, anyone may transfer cash to them without knowing their banking information. Fintech companies like Paytm, Phonepe, and GooglePay have developed an extraordinarily safe and simple-to-operate technology with no transaction fees for transferring and receiving payments over UPI. They were taking place every day. In October 2023, the statistics were astounding: 505 live banks and 17,15,768.34 crore of operations, or about a billion UPI transactions daily. In October 2016, only 26 banks were operational, and 46.57 crore operations were completed, as stated by NPCI data.

A journey through time showing the progression of digital payments into the 21st century:

1983: American cryptographer David Chum began generating digital currency via the invention of the "blinding formula", an upgrade to the RSA algorithm that's continuing to be applied in web encryption." This marks the start of cryptocurrency.

1994: Although there is controversy, Some people think Pizza Hut's first-ever internet buy, Pepperoni and Mushroom Pizza, occurred this year.

1998: PayPal has been launched.

1999: Movie tickets may now be bought with a cell phone, courtesy of Ericsson and Telenor Mobile.

2003: 95 million mobile phone subscribers made transactions globally through their mobile devices.

2007: Marked the launch of the Android operating system and the iPhone.

2008: The invention of Google Wallet.

2011: Brought the launching of Google Wallet.

2014: brought the release of Apple Pay, Android Pay and Samsung Pay.

2020: 90% of smartphone subscribers are expected to have completed mobile payments via their cell phone devices.

2.2.1 Types of Virtual Wallet (Digital Wallet):

Below are the top ten mobile wallet service providers in India and their customers' offerings.¹⁰

1. PayTM:-

Paytm was released in 2010. It is an e-commerce platform in India that started by offering mobile recharge and utility bill payments. Now, it offers a complete marketplace on its mobile app and wallets to its customers for storing money and making quick payments. Additionally, to perform online purchases, bill payments, money transfers, and other uses for the Paytm Wallet and receive services provided by retailers in the travel, entertainment, and retail industries.

Number of installs: 100 Million (or ten crores) on the Android Play Store.

2. Google Pay:-

Google created an electronic payment mechanism, earlier known as Tez. This is an excellent online payment or application for transfer of funds with cash back. With Google Pay, you can transfer money to friends, bill payments, do online shopping and recharge your phone. The credit and debit cards you store in Google Wallet are safely encrypted on a secure server in a safe location. There is not required to worry about reloading wallets; you are not obligated to perform further KYC- which is needed for all the remaining apps, making it more widespread.

Number of installs: 100,000,000 + (100 Million or ten crore) on Android Play Store.

3. BHIM Axis Pay:-

BHIM (Bharat Interface for Money) is India's other UPI banking app, launched in December 2016. It enables instant money transfers, mobile recharges, and DTH recharges getting from the BHIM Axis Pay mobile app. Users register their bank account and create a UPI ID linked to the bank account to start the transaction. The user can pay their friends, family, and merchants with the tap of a button. Both Axis Bank users and users from other banks can use it.

Number of installs: 1,000,000 + (1 Million or 0.1 crore) on Android Play Store.

¹⁰ Retrieved from <https://www.socialbeat.in/blog/top-10-mobile-wallets-in-india/>

4. PhonePe:-

PhonePe was launched in 2015 and is now part of Flipkart. It is easy to use, secure, and fast. PhonePe lets users manage several bank accounts at a time. It supports refunds and can transfer wallet balances to the bank account. It also enables customers to pay at retail stores.

Number of installs: 100,000,000 + (100 Million or 10 Crore) on Android Play Store.

5. Mobikwik:-

With M-wallet, Mobikwik aims to simplify the way we do online payments in India. This was launched in 2009. Once you have loaded money into your Mobikwik wallet through a debit card, credit card, net banking or IMPS, Mobikwik recharges your mobile in just 5 seconds, even on a 2G network. Mobikwik has partnered with different kinds of online shopping websites like eBay, Myntra, shops, and Infibeam to book movie and bus tickets and order and pay for pizza using a fast, reliable, and secure wallet.

6. Yono by SBI:-

Yono mobile wallet application, launched by the State Bank of India, Users can bill payments, recharge, hotels booking, movies, shopping, and traveling, as well as move funds between different users and their bank accounts. Users of SBI and non-SBI can use this semi-closed prepaid wallet.

Number of installs: 10,000,000 + (10 Million or 1 Crore) on Android Play Store.

7. Citi Masterpass:-

'Citi Masterpass' is India's first virtual wallet in the entire universe, launched for easier and safer online purchasing. Its unique payment solution lets users store all their cards, and With just a click or tap, you could get all the information in a single location.

8. ICICI Pockets:-

ICICI Pockets is one of the greatest mobile wallet in India. It offers the facility to utilize a virtual wallet to transfer funds using net banking or debit cards. You may send gifts, pay bills, book a trip, recharge your devices and make transfers with Pockets.

Number of installs: 5,000,000 + (5 Million or 0.5 Crore) on Android Play Store.

9. HDFC PayZapp:-

HDFC introduced PayZapp in 2015. It is a comprehensive electronic payment and purchasing solution. PayZapp allows you to do mobile recharge, bill for utilities,

evaluate and book flight tickets, buses, and hotels, purchase movie tickets, music, and groceries, take advantage of fantastic deals at Smart Buy, and transfer funds to anyone on your phone directly.

Number of installs: 10,000,000 + (10 Million or 1 Crore) on Android Play Store.

10. Amazon Pay:-

Amazon Pay is a virtual payment processing service launched globally in 2007 and in India in 2017. Amazon owns that service. Amazon Pay is an easy and quick checkout. Users can load money instantly through multiple online payment methods such as debit cards, domestic cards, and net banking and use it whenever they want. You also get to shop on Amazon using Amazon Pay.

2.2.2 Advantages of Using Virtual Wallet (Digital Wallet):

- 1 Easy Accessibility:** Mobile wallets are straightforward to use. These wallets allow you to pay in one tap. You only need to download the mobile wallet application and create a user ID and password that stores the information from cards on a mobile device. Mobile wallets allow users to make various purchases.
- 2 Easy to load:** You can quickly load money through a net credit card, debit card, or net banking. With a mobile wallet, we can pay quickly. Most transactions can be completed in just a few seconds.
- 3 Range of Use:** We can use mobile wallets for a variety of transactions, such as paying utility bills for postpaid mobile, landline, gas, and electricity, recharge your DTH connection and prepaid mobile, Book movies, bus and railway tickets, do online shopping, and transfer money to another wallet or a bank. The usage of mobile wallets has increased tremendously.
- 4 Simplified Payment Process:** With the support of a digital wallet, the user can very quickly pay for the service or product in the online store. As you know, payment with a plastic card involves a much more complicated process since the user must enter the card number, CVV code, etc.
- 5 Conveniences:** With just a tap or scan of your cell phones, users can pay for their purchases in a matter of moments.

2.2.3 Limitations of Virtual Wallet (Digital Wallet):

- 1 Security:** Companies should ensure their customer Data is securely encrypted and

maintained. When using an electronic wallet app, the main anxiety is "Will my information be safe"? This is the barrier that companies must face. ultimately, security systems must be developed that are in the same secure and complete evidence to prevent probable safety concerns.

2 Support Technology: Only the right kind of device for every application can be used with virtual wallets. Since NFC processors and specialized scanners are the only equipment designed to facilitate payments using digital wallets, their functionality is limited due to the recent advancements in technologies.

3 Investment: The earlier financial investment to create An app for a virtual wallet that works is enormous. This requires the software's initial development and constant maintenance, updates, and fixes. After purchasing the program, the company needs to set up the appropriate hardware. in their stores, increasing the cost.

4 System Outage: Details regarding virtual wallets are stored on the business server's cloud; therefore, the system's risks associated with a fault or shutdown are always present. As a result, businesses will need more traffic to the server to process payments or become increasingly slow.

2.2.4 Growth of UPI transactions (Banks live on UPI in India):

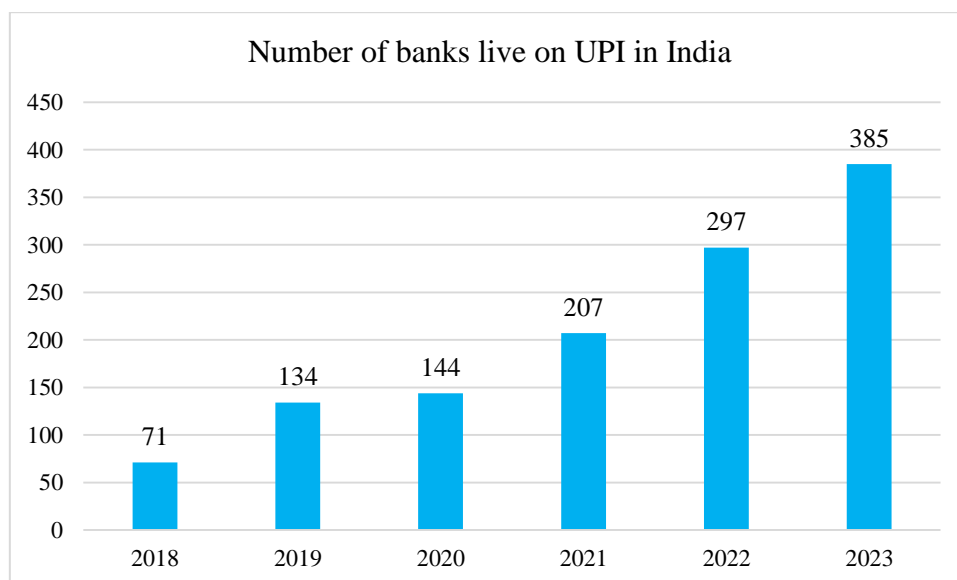


Figure 1.5 Source: NPCI Database

According to the NPCI database, over 70 in January 2018 to 385 in January 2023, the total number of banks that joined UPI systems climbed by over 11 times.

2.2.5 Growth in UPI transactions in India

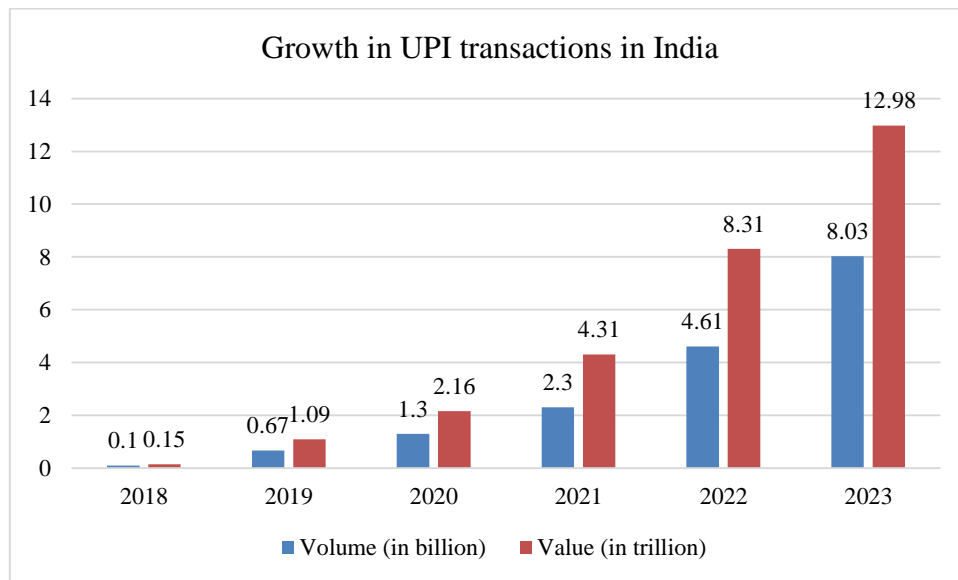


Figure 1.6 (Source: NPCI Data)

In January 2023, there were 8.03 billion UPI transactions, up 1802 times from 4.46 million in January 2017; with the identical duration, the overall amount of transactions increased 766 times, from Rs. 16.90 billion to 12.98 trillion.

2.2.6 Covid-19 effect on UPI transaction.

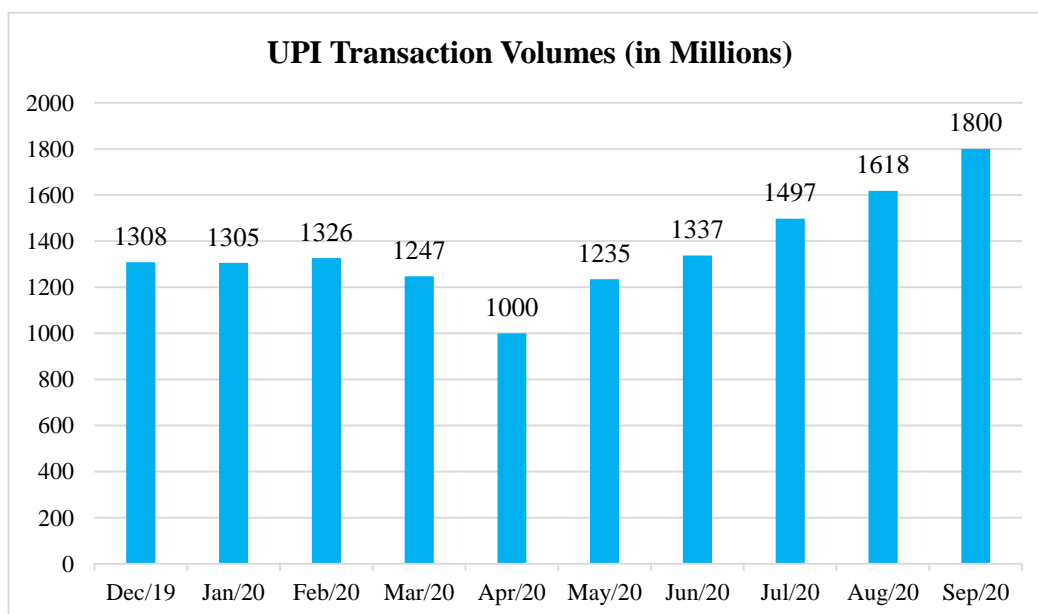


Figure 1.7 Source: NPCI Statistics.

As seen above, COVID-19 caused the Indian economy to collapse, which in turn caused a

decline in online transactions. There was a minor decline in April 2020, but the impact of COVID-19 was short-lived. In May 2020, the result was positive, and the total number of online transactions continued to climb steadily after that.

3. About the Study:

Consumers' perceptions and attitudes towards using plastic money and virtual wallet services depend upon the benefits provided by the associated technology. The financial evolution of technology changes the user's perception. This study helps enhance the services of plastic money and virtual wallets in India.

India is the fastest-growing country in digital payments, and In India, the number of people using digital payments is rising every day. According to RBI data for the last five years, from 2015-16 to 2019-20, Regarding the issuing of cards, the variety of credit cards issued grew from 245 lakhs in 2015-16 to 553 lakh in 2019-2020 and in the same period Debit cards also increased from 6615 lakhs to 8053 lakhs. The mobile wallets have demonstrated a quick development in volume and value. The growth rate concerning online payments continues to increase every year. The rapid growth makes it essential to understand the usage pattern of digital payment in the modern age. This study makes it necessary to evaluate through new light to understand the usage pattern of it.

Organizations are developing new patterns to raise the utilization of cards and wallet technology. With the advent of cards and wallets, research was conducted to analyze the change in organizations' attitudes toward potential consumers. Everyone can now focus on virtual wallet services for profit and growth to enhance the banking facility. The organization has realized the need to tap the new possibilities of using mobile wallets and would like to invest in new technology with care. ever higher advertisements, the use of mobile wallet technology is the key to success.

Technology growth has occurred due to many factors, such as technological innovation, providing facilities like easy ways to access technology, and modification in technology. **The objective of the study is to analyze the perceptions, attitudes, and preferences of Young customers regarding transactions through plastic money and virtual wallet services.**

Cards and wallets are becoming more popular in the new banking and digital currency area. Digital payment is becoming a much preferred mode of payment in the country. This technology makes surprisingly complete business sense when transactions are drawn with plastic money and virtual wallet technology. The thesis aims **to identify the factors influencing the customers' adoption of plastic money and virtual wallet services, the level of awareness and usage of plastic money and virtual wallet services and the impact of demonetization on cashless transactions.**

Suggestions are based on the analysis of the results for this present study. During this survey,

consumer segments based on plastic money and virtual wallets are also analyzed indirectly. The main aim of the suggestions given in this thesis is to assemble online payment systems more efficient, simple, affordable, and differentiated products to increase the number of users. Respondents will provide valuable feedback on nearby features, and their opinions will be considered for further improvements.

4. Scope of the Study:

To examine young consumers' perceptions and attitudes towards using plastic money and virtual wallets as modes of payment in selected Gujarat cities is the primary objective of this study. The study is restricted to Ahmedabad, Vadodara, Surat, and Rajkot, but the findings would be relevant to other parts of the country.

The following parts are highlighted in the scope of the study:-

- The study is confined only to Debit cards, Credit cards, and virtual wallet services.
- The study covered only users of such modern banking services.
- The users will be conveniently surveyed.

5. Research Motivations:

The Government of India is constantly striving for India's cashless society through significant initiatives such as demonetization. The Covid-19 lockdown has also increased digital transactions. In 2020, the COVID-19 national lockdown showed an augmentation in digital transactions to Rs.2.8 lakh crore in May due to fear of the COVID-19 deal through cash transactions.

India is approaching a cashless society, and the study highlights the perception of a consumer and attitude towards using plastic money and virtual wallets. Additionally, the study aims to discover the critical uses of these financial services, which will help conduct a proper analysis of the swift adoption of plastic money and virtual wallets.

The literature over the last few years revealed that Considerable investigation was carried out on issues like fraud, security, usage patterns, a new method of e-payment, etc. Additionally, primary research indicated that until now, most of the field's study has been conducted in developing countries like the U.S. and Europe only. Studying the implications of plastic money and a virtual wallet becomes essential for a fast-developing country like India.

The features of plastic money and virtual wallets bring value both to ordinary users and businesses (Banks and other financial institutions). As a User, I am interested in plastic

money and virtual wallet technology, which offers many financial services for accessing money through cards and wallets.

Both of these topics have future scope for research and innovation. My goal is to study both plastic money and virtual wallets, as these are rapidly changing and evolving ways in which users exchange money and trade electronically.

6. Conclusion:

Cashless transactions are reaching their growth day by day. The entire online market depends on a cashless transaction system. Cashless transactions are less time-consuming. It kept the history of all the transactions done by the users. The demonetization aims to eradicate black money and move towards a digital economy. Demonetization has played an essential role in the transaction toward a digital economy. Looking at the current situation, the COVID-19 pandemic has also affected fast-growing digital payment. So, it concludes that the future transaction framework will be cashless. The chapter describes the study's goals to determine the most influencing factor among the factors that affect the customers' adoption of plastic money and virtual wallet services and the level of awareness and usage of plastic money and virtual wallet services and also to examine the effects of demonetization on cashless transactions.

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