

Impact of E -Payment Techniques (online transactions) in Indian Economy

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ABSTRACT

India is world's second largest nation with a population of 1.3 billion, which is approximately 18% of the global population. To meet the financial service needs of a growing population requires a sustainable approach in the form of digital payment system. In order to transform India into a digitally empowered society and knowledge economy, the Government of India launched Digital India programme in 2015. The programme focuses on three main vision areas: digital infrastructure as a core utility to every citizen, governance and services on demand, and digital empowerment of citizens. Through the programme, the government wants to ensure the availability of high-speed Internet, provide mobile phones and bank accounts to every citizen, ensure availability of services in real-time from online and mobile platforms, make financial transactions electronic and cashless, and ensure digital literacy and availability of digital resources across the country. This paper discusses the different types of digital payment systems in India and the rise of transactions through the Digital Medium. The paper draws the impact of Demonetization of Five Hundred and Thousand Rupees notes towards the rise of Digital Payments in India. The paper analyzes the amount of transactions through digital modes in the recent years.

Keywords: - *Digital Transactions, Payments, Digital Payment Systems, Transactions, UPI*

1. Introduction

A payment is a financial transaction, and a payment system is a setup or protocol for settling financial transactions. It cannot be denied that payments are an integral part of each human being's livelihood. To avail any service or purchase a commodity, one has to pay, and that payment has to go through a payment system. It is always interesting to look at the development of Payment systems through the lens of history. The world started from the very popularly practiced Barter System, where commodities were used as a medium of exchange. Further slipping into time, monetization of precious metals as an exchange medium became common. Today, in the modern world, currencies with economic boundaries are the medium of exchange, and have weighted their positives over previously existing methods of exchange. While there have been developments in the area of currency-exchange so as to offer decentralized mechanisms in the form of Bitcoin or other Cryptocurrencies, it is of better thought that this paper limits its discussion to payment mechanisms that have been authorized by respective Central Administrative Authorities and recognized worldwide. The payment system, which still is in place, involves the exchange of Currency notes and coins for a commodity or a service in majority of economies. However, with the beginning of the 21st century and with the widespread use of the Internet, payments and transactions have transformed into electronic mode. Electronic payment systems have seen robust systems being setup by Administrations across Economic Boundaries and by Corporate players who have invested in order to facilitate remote transactions through the electronic mode. While the world moved from the Analog systems to Digital ones, these set of electronic payment systems have been popularly known as Digital Payment Systems. According to Statista, the total

transaction value of digital payments in the world has been projected to reach 1 USD 4,406,431 million in 2020 and the Digital Payments in India 2 have been projected to reach USD 69,168 million in 2020. However, it is also interesting to note that according to the World Bank 3, as of 2017, around 49.723% of the world population is an active internet user, which in numbers is around 3.76 Billion individuals. On the other hand, India, as of 2017 had 34.4% of its population using the internet actively, which accounts to around half a Billion individuals. These half a Billion individuals from India form around 13% of the number of Internet users worldwide. Therefore, it is very important to study the digital revolution in Finance, especially in terms of digital payments and transactions, from the perspective of India. India is the second largest populous country in the world with diverse cultures and languages, due to which the amount of economic activity is vast. The economic activity involves a huge amount of transactions performed per day. Being a developing country, India also needs to take care of the marginalized section of the society and uplift them from poverty with social security schemes. Apart from being on the higher edge in population, India is also the fifth largest economy in the world (Myers, 2020). This makes it significant for the world to analyze the ways of transactional settlements that take place in the country. The different scenarios which have contributed in introducing and further popularizing Digital Payment Systems in India need to be widely looked at while India did have digital payment systems before 2016, but Demonetization, a decision by the Government of India in 2016 made way for a boost to Digital Payment systems and Application-based payment systems in India. Therefore, it is important to look at the decision and draw the key points that affected the amount of Digital transactions. On the 8th of November, 2016 the Prime Minister of India His Excellency Mr. Narendra Modi announced the decision of Demonetization of 500 and 1000 rupees notes in the Economy, making them illegal tender. The Government directed its citizens to deposit the existing 500 and 1000 rupee notes in exchange with legal denominations. The government also introduced 2000 rupees notes so as to increase the pace of recognition of cash currency. The reasoning behind the Government's decision was given as to curb the Black Money (or unaccounted money) in the economy, thereby capturing mass public support. However, the general public faced a lot of inconvenience as ATMs had to be calibrated in order to dispense the new currency notes. Nevertheless, this decision brought in a variety of promotional offers for consumers and offered a chance to receive cash backs when transacting through mobile based payment applications. Not only this, the Government of India went on to launch the BHIM App, abbreviated to Bharat Interface for Money, developed by the National Payments Corporation of India, a government aided entity. It provided for a common interface for payments by introducing UPI (United Payments Interface), which is widely in use today. There have been many surveys on the impact of Demonetization on Digital Money giving an idea to Economists as to how Digital Payment Systems have transformed the Indian economy and the way of transacting in India. According to (Sivathanu, 2019), there is a vast scope and encouragement for Digital Payment systems in India. The data analysis in Section 2 provides the graphical representation of the Digital Payments through the years. As stated by (University et.al, 2018), the advent of Digital Payment systems has indeed improved the functioning of the Banking Sector in the country, which in turn improves and eases the transaction settlement systems for the consumers. The next section lists the different types of Payment systems in India.

2. Main Thrust

Literature Review

Gunjan Sharma and Kushagra Kulshreshtha (2019), the following research paper is based on descriptive research pattern. The sample of this research are people whose intention is not clear for adopting the mobile wallet. This research paper concludes with the most dominant factors which affects the intention of people to adopt the same by exploratory factor analysis. This research paper will add on to our further research by mentioning the factors which are forcing people to opt for mobile wallet or not to opt for the same.

Shilpa Bhimrao Gaonker (2018), this research paper was written with an objective to find out the barriers which is coming on the way of cashless economy, factors which are involved which influenced economy to move towards cashless society, benefits of cashless transaction and what are the steps taken by government to encourage cashless transaction. This research was done through secondary source mainly from the reports of RBI, GOI, MEDIANAMA etc. This research paper will add on to our further research by mentioning the challenges and the steps for reducing the challenges to make India a cashless economy.

Dr Vivendra Chavda (2018), this research paper is made by the survey of rural respondents of Gandhi Nagar by using non probability convenience sampling. This research paper had an objective to find out how rural respondents perceive the digital payments. This research concluded that there were limited people who were aware of the digital payments and very less people used the same for the payment of the various bills. This research paper will add on to our further research by mentioning the situation in rural areas like Gandhi Nagar which pose a challenge for Indian economy in adoption of digital payments.

Pankaj Yadav (2017), this paper is entirely based on the survey of 350 people all over India belonging to consumer category by a quantitative research approach. This paper was created with an objective to check intensity of the factors which can force a customer to use mobile wallet. The conclusion of this study was that Perceived ease of use, Perceived Risk, Trust, Perceived quality of service, and Perceived cost have not been influencing the intention of customers to adopt mobile wallet but the only factor which influenced the customer's intention was its perceived usefulness. This research paper will add on to our further research on can digital payments can make India economy a superpower by mentioning about the factors which needs to be modified so that it can be used to attract people to go for digital payments.

Zahoor Ahmad Shah (2017), this research paper has been formed with an objective of to analyze the infrastructure situation which is needed to support digital payment and digital modes of payments available in India. The research is done through the secondary data published by RBI NCPI. This research concludes that new tech has made a new path for more digital products but India has a long way to accept and innovatively use this technology. This research paper will add on to our further research on can digital payments can make India economy a superpower by mentioning about the factors which needs to be modified so that it can be used to attract people to go for digital payments. This research paper will add on to our further research on can digital payments can make India economy a superpower by mentioning about the technology and modes of payments that India could tap till now.

M. Nithin P. Jijin and P. Baiju (2018), this research paper is prepared with objectives to analyze the trend payment instrument for the transactions and to answer the question how the demonetization has impacted the usage of the payment instruments. The study is based on secondary data published by RBI on a monthly basis. The data is analyzed through the method of Intervention Analysis in Timeseries (ITSA). The research paper concludes that the demonetization had a negative impact on digitalization since it did not push the growth of digital payments in India. This research paper will add on to our further research on can digital payments can make India economy a superpower as it mentions about the impact of demonetization on digital payments since this step was taken by government to move towards digitalization.

Rajwinder Kaur (2017), this research paper is prepared on the objectives to determine the growth rate through the analysis of the use of electronic channels and to analyze the steps taken by the government in order to keep a track on digitalization. The research is of descriptive in nature. The sample for this research were 100 individuals of SBS Nagar in Punjab. The method used for sampling is convenience sampling. This paper concluded that the people had a positive thinking towards the digital payments but the incentives provided by government did not help as cash was still considered as king. This research paper will add on to our further research on can digital payments can make India economy a superpower as it provides information about half-hearted incentives of government which could not attract people towards the digitalized payments.

Ibrahim P. A., Nasir Zameer (2018), this research paper is based on the objective to analyze the impact of cashless economy on MSME sector and to examine how India is moving to cashless economy. The research paper is based on secondary data and descriptive statistics is used to analyze the data. This research paper concludes that the cashless economy will help to curb corruption and money laundering. The sudden change to cashless economy was difficult to adopt by the the MSME but the positive outlook encouraged this sector to accept the change. This research paper will add on to the new research since it mentions the effect on MSME which is important for employment generation in the country.

Mr. Harish Tigari (2018), this research paper is prepared on the objective to analyze how digitalization has impacted Indian economy and also to analyze the percentage of population using digitalized payments and other services. This research paper is prepared from secondary data. This research paper will add on to the new topic which will prove that whether it really changed the economy and how it has helped to make India a cashless country.

Dr.G.China.Babu (2018),this paper is prepared on the objective to examine the awareness level of digital payments in the economy and also to study the benefits derived from the same. This research paper was prepared through a sample survey of 200 customers across India and the method used was convenience sampling. This paper concluded that the customer in India have a good knowledge on cashless payments also it was highlighted that cashless payment method is good for Indian economy. This research will add on to the new research suggesting the acceptance level of digital payments in India.

Mrunal Chetan bhai Joshi (2017), this research paper is prepared on the objective to study a trend in digital payment through various modes and also to study new digital payments method. This research paper is based entirely on secondary data and the tools used to analyze data are cross tabulation, trend percentage analysis etc. The paper concluded that there are growth digital payments in last three years and people are readily using new modes of digital payments. This research paper will add to the new research as it highlights growth of digital payments and reducing dependency on cash.

Vir Pratap Dr Ganga Kumar Binha (2018), this paper is prepared on the objective to analyze the positives and negatives of M wallet and to study the barriers and stimulators to cashless economy. This paper is prepared is based on survey of 100 people and the data is analyzed through simple percentage method. This paper concluded that mobile is gaining acceptance the main reason of acceptance was discounts and offers. This paper will be useful in order to write the reasons to why digital payments is successful.

Online Transactions and Analysis

The medium of settling of financial transactions through the electronic or digital mode is called a Digital Payment System. Digital payment systems can be of two types, namely cashless systems and cash-based systems. Cash based systems include the dispensing or depositing of cash notes or coins in the transaction. Examples of Cash-based digital systems include the ATM or the Automated Teller Machine which has an electronic mechanism for dispensing cash. However, this paper purely focuses on cashless digital payment systems. In India, the Payment and Settlements are governed by the Payment and Settlements Systems Act, 2007 and the Payment and Settlement Systems Regulations, 2008. According to Reserve Bank of India (RBI) that is India's Central Bank (RBI, 2020), in value terms, the share of paper-based payment systems, which include Cheques, Demand Drafts etc., is around 11%. However, Electronic Payment Systems occupy the share of a majority of the amount of transactions. Figure 1 depicts the total number of online transactions.

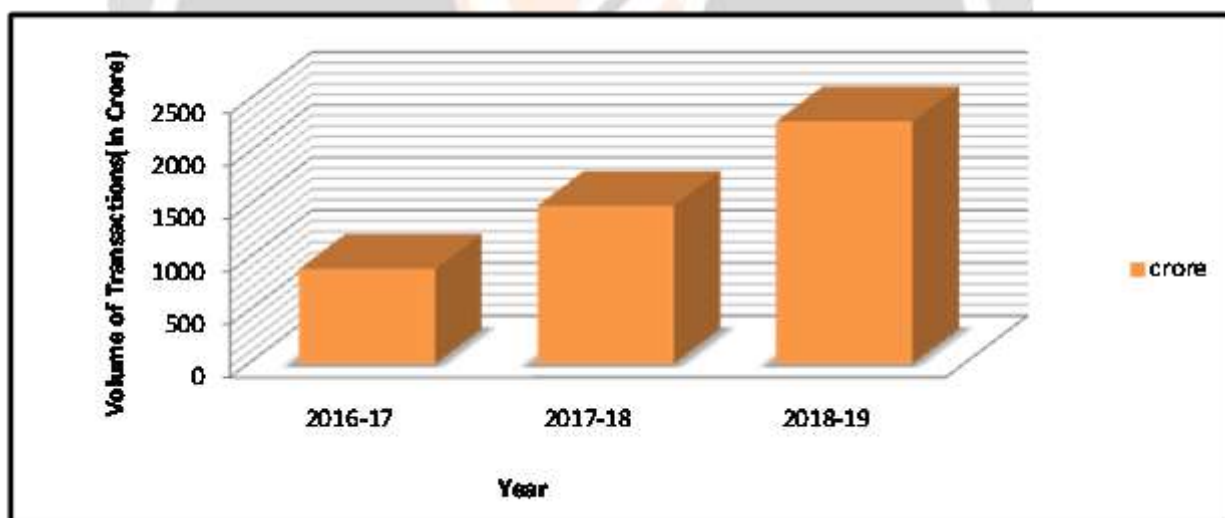


Figure1: Total number of online transactions in Crores including Real Time Gross Settlement

It is important to note that there is a steady but polynomial increase in the volume of online transactions in consecutive years. This is a clear indication regarding the increasing use of online transactions as an option for financial settlements. The upward trend can be attributed to the fact that online transactions are secure and transparent. Apart from being transparent, the increasing number of enhancements in the User Interfaces of Applications and Websites may also be the reason for attracting a large number of consumers to transact online rather than resorting to the traditional methods of payments. Digital Payment systems have their unique characteristics against the traditional cash-based systems such as non-repudiable and transparent transactions. This not only assures the payer of secure electronic transfer, but also assures the receiver of a transparent transaction that can be tracked by the authorities. Relevant proofs are generated against every transaction performed which installs

trust within the consumers. Figure 2 depicts the amount of digital payments that have been made using various platforms.

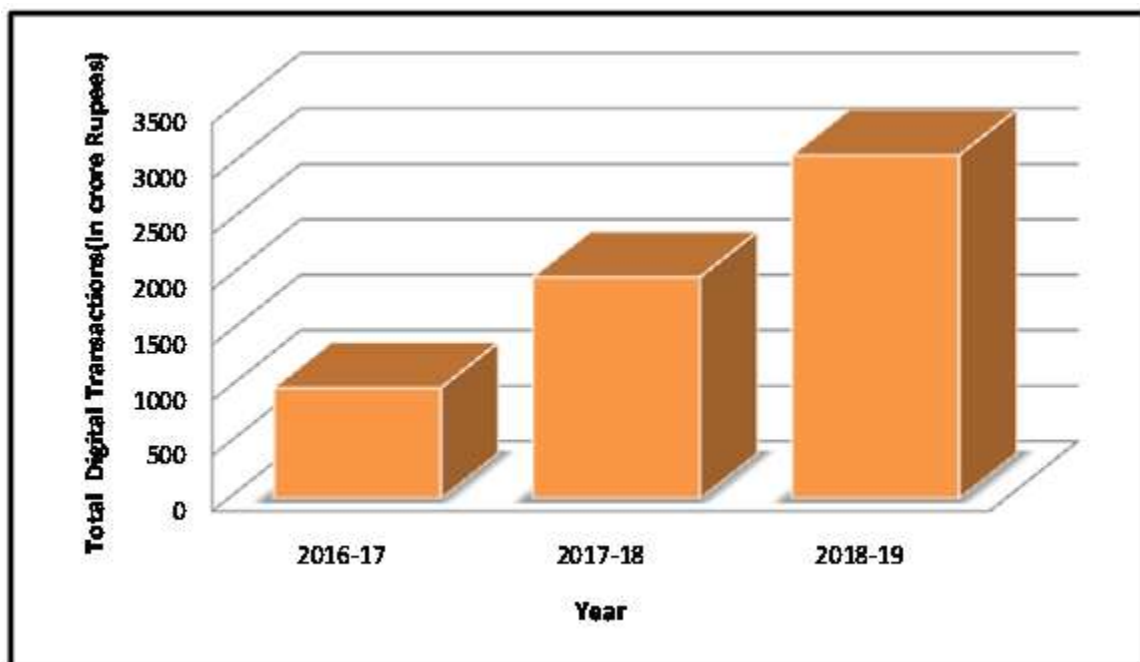


Fig2: Amount of all Digital Payments in Crore Rupees using various platforms from Financial year 2016-19

Source: Rajya Sabha (Upper House of the Parliament of India) Starred Question 351 of Session 249) <https://ssrn.com/abstract=36607>

The amount of transactions that have been performed has seen an exponential increase in the recent years which shows that there is huge enthusiasm amongst Indians to move from the cash-based system to a cashless system, which is more accountable and transparent. The different types of Digital Payment Systems are listed and analyzed in the subsections below.

1.1 Electronic Clearing Systems (ECS)

This system facilitates the credit of amount in case of a single debit account and multiple beneficiaries. It eases the deposit of regular payments such as Salary and Interest into the beneficiaries' accounts through an automatic scheduled mode. It is devoid of the location of the stakeholders. It also facilitates the collection of amounts where multiple consumers mandate the bank branches in order to debit the amount and pass them to utility companies. A National ECS and a Regional ECS launched by the Reserve Bank of India incorporate and decentralize the further process taking into consideration the diverse geography of the country.

1.2 National Electronic Fund Transfer (NEFT) System

This system facilitates the secure electronic transfer of amounts from one bank account holder to another account holder of any other bank recognized in India. It enables a near real-time transfer of funds by adopting an hourly batch settlement methodology. Figure 3 depicts the number of NEFT transactions from Financial Year 2016-17 to Financial year 2018-19.

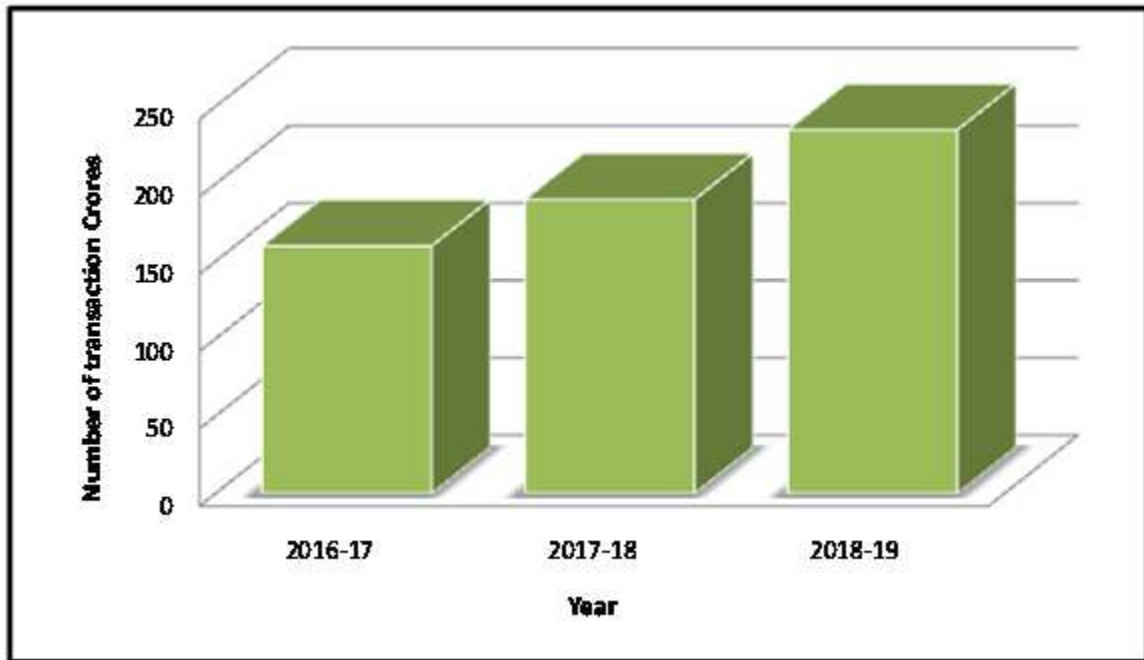


Figure 3. The Number of NEFT Transactions (in Crores) from Financial Year 2016-17 to Financial Year 2018-19

(Data Source: Open Government Data Platform India data.gov.in)

It can be observed in Figure 3 that there is a linear growth in the number of transactions that have been performed through NEFT. While NEFT transactions also include consumers visiting the branches of a bank and manually depositing cash in order to transact, with the advent of Internet and Mobile Banking, a user can perform a NEFT transaction remotely without visiting the bank.

1.3 Real Time Gross Settlement (RTGS) System

This system facilitates the secure electronic transfer of amounts in a gross method, and is more real-time in comparison to NEFT as it doesn't have the netting or bunching of amounts for transfer, and involves a transfer of gross amount without a waiting period. This system is recommended for transferring amounts worth more than 2 Lakh Rupees. Figure 4 depicts the amount of RTGS transactions from FY 2016-17 to FY 2018-19. It can be noted from Figure 3 and 4 that the number of RTGS transactions are considerably less in comparison to the number of NEFT transactions, but it is necessary to consider that RTGS transactions involve amounts above 2 Lakh Rupees which, when multiplied, draw a large amount of rupees that have been transacted. This not only draws an implication that while transacting on huge amounts, people tend to prefer an online transaction over the traditional cash-based system.

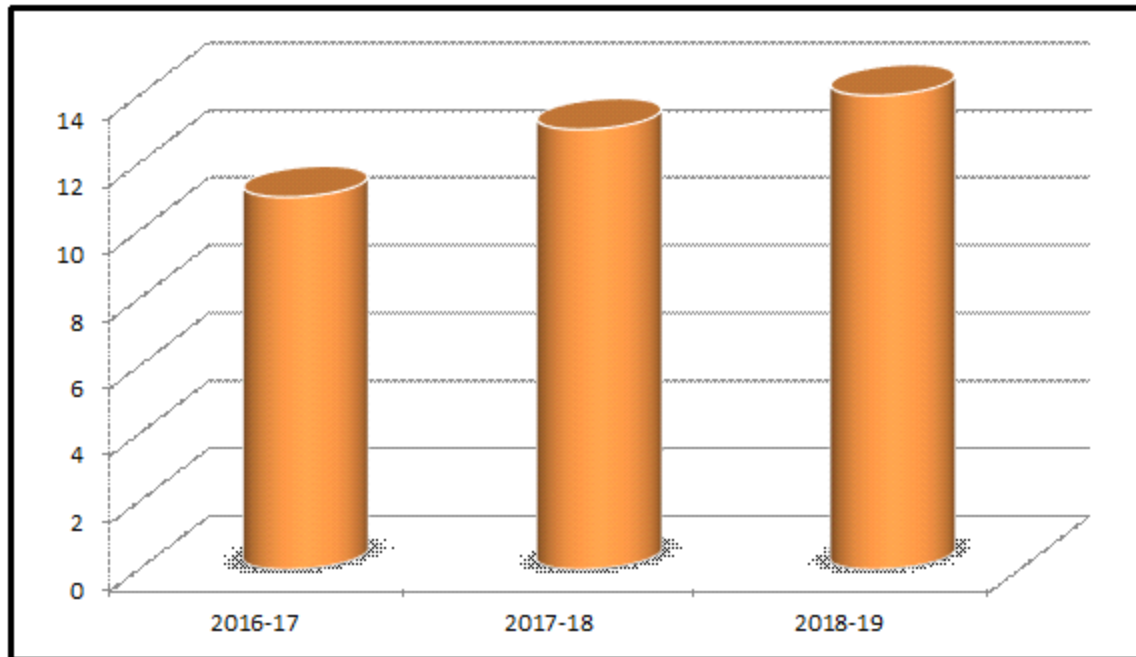


Figure 4. The Number of RTGS Transactions (in Crores) from Financial Year 2016-17 to Financial Year 2018-19

(Data Source: Open Government Data Platform India data.gov.in)

1.4 Bank Cards

A Debit or Credit card is provided to account holders for transacting from their account. The account holders can 'swipe' into the machines with their cards in order to make payments. This system of digital payment is prevalent amongst many customers as it is secure and has a robust mechanism to work against theft of money. The National Payments Corporation of India launched the RuPay card, the indigenous card payment system which allows all Indian Banks to participate in the system and issue RuPay cards to the citizens against their Bank Account. As of 2019, the RuPay cards are acceptable in other countries such as Singapore, UAE, Bahrain and Bhutan. The number of outstanding Debit and Credit cards may lead to a number of transactions that are cash-based such as withdrawals from ATMs or PoS. However, the overall idea of representing the data regarding the number of outstanding Debit and Credit cards is to analyze the enhancement in knowledge about Debit and Credit cards among people. The Figures 5 clearly show that there is a steady rise in the number of bank cards issued. With the advent of Payment Gateway Platforms, where one can pay using the Debit or Credit cards, without having to 'swipe' on the machine, debit cards and credit cards have increasingly become a medium to transact digitally.

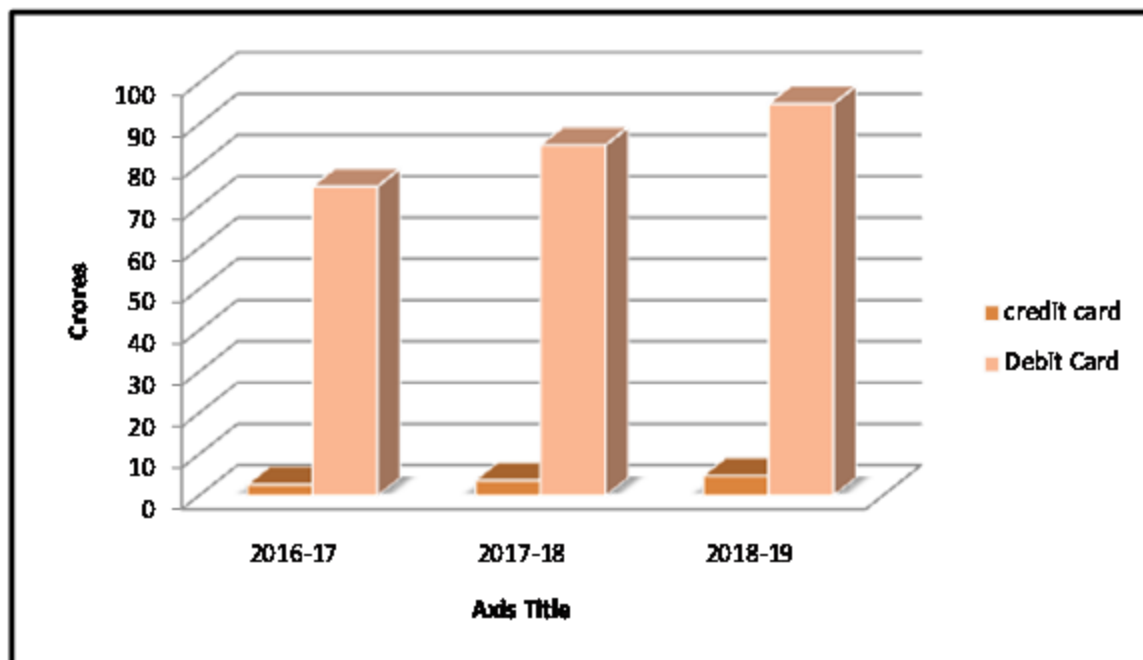


Figure 5: Number of Outstanding Credit Cards and Debit Cards at the end of the corresponding Financial year in Crores. (Data Source: Reserve Bank of India)

RuPay cards are domestically owned and are a boost to the call by the Government of India for utilizing indigenous innovations. As the data does not include ATM withdrawals or any other cash-based transaction, it can be implied that RuPay cards are paving a way for increasing the amount of online transaction.

1.5 Mobile Banking, Internet Banking and Prepaid Wallets

Many innovative methods have been introduced by different banks in order to move their basic procedures on to the digital platform which also includes transacting money. With Mobile Applications becoming popular amongst the public, Prepaid Wallets in Apps such as Paytm, Phonepe etc. have also made their presence felt in the locus of payment systems in India.

1.6 UPI (United Payments Interface)

UPI is an interface which allows a user to link his or her multiple bank accounts and transfer amounts on a seamless basis round the clock without having to know the IFSC Code. It also facilitates the users to make payments against utility bills generated by the companies. The UPI, which was launched with BHIM App, is now widely used by other firms and banks facilitating users to make payments through alternative platforms. It also involves the QR Code based payment where a QR Code can be scanned using the Mobile Phone's camera through the App and instant money transfer can be made. It provides instant proof and receipt of money transfer through the platform and is hence secure and trust worthy. Taking note of UPI and BHIM UPI based transactions is important because they are the product of the National Payments Corporation of India, which is a government entity. The exponential jump in volume of transactions can be attributed to cheaper internet facilities and mobile phones too. Functioning as application-based payment platforms, UPI and BHIM UPI have attracted positive responses from users when surveyed. As per a survey by (Tungare, 2019), over 70% of the respondents found UPI easy to use and had a positive response towards the transformation from Cash Based to Cashless transaction system. There are many more such payment systems which are used, but the prominent ones are listed as above. While this paper argues regarding the importance of digital payment systems and analyzes the data regarding digital payments or transactions, there may be other factors that contribute to the exponential jump in the volume of transactions. However, in any

condition it cannot be denied that digital payments and transactions have increasingly occupied the pie of financial settlements, and as the trend can be seen, it may rise further to reach new heights.

3. Conclusion

Digital Payments or Transactions have made their presence felt in the financial ecosystem with increasing use by the people in India. In this paper, it can be well calculated that the trend of converting to cashless systems, which is somewhat exponentially increasing, will increase rapidly in the coming days due to the onset of the COVID-19 pandemic. The reason being that exchange of cash in the form of notes involves physical touch and can transmit the infection from one person to another. While in the case of digital transactions, physical contacts between individuals is null and hence is a safer way to transact. However, it cannot be denied that digital payment systems are vulnerable to the internet world. It widely involves cyber threats and other frauds that trick on people thereby causing them to lose their money. According to (Bank for International Settlements, 2016), there are various risks associated with the retail online transactions. The risks accounted for are the legal risks, liquidity risks, operational risks, reputational risks, fraud risks and credit risks which involve incidents such as theft and requirement for quality maintenance of the system. A small bug or a vulnerability in the network system may cause losses amounting to thousands and millions of rupees. Therefore, with increasing digital transactions, it is important that the users are well educated about the risks and they exercise caution while sharing their personal details or transacting on publicly available networks. The number of frauds and the impact on the economy and people can be a further scope of research in this area. Apart from that, the possible path to a cashless economy in India can also prove to be an important research activity of interest to economists and computer scientists.

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