

**“THE STUDY ON THE EFFECT OF DEMONETIZATION ON DIGITAL BANKING SECTOR”**

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**ABSTRACT:**

*The adoption rate of digital modes of transactions was very low until in November 2016, the Government of India announces the biggest demonetization in the history of India, banning the use of Rs. 500 and Rs. 1000 currency notes from the midnight of 8th November 2016. Within a few days digital modes of transactions became inevitable due to extreme scarcity of new notes and reduced ATM withdrawal level. Digital transactions increased by lips and bounds which was one of the promulgated objectives of demonetization. But did demonetization cast a long term positive impact in changing the Indian economy from cash based to cash less? Did digital modes of transactions manage to attract more and more customers even when re-monetization process was over? Our study is a rigorous attempt to find out the answers to the above questions. We have used secondary data relating to number of transactions under various digital payment modes offered by banks to objectively verify whether there is any significant growth in digital payment instruments post demonetization using appropriate statistical tools. Our analysis confirms the claim of the Government that demonetization, indeed, has helped India to take a giant step towards a digital or cashless economy.*

**INTRODUCTION:**

In the recent trends of economy, there is a vast usage and increase in the digital payment and receipts transaction that also brings important advantages including improved transparency, reduced time scale, ease of access and use of financial instruments cum markets. After the realization of these benefits in the economy, especially in the country like India, where there is excessive rate of corruption, financial exclusion, inflation and deflation. Perhaps it is the banking culture that has been followed since ages. Indian banking regulations were constantly starving

for creating digital ecosystem for effective and efficient financial transaction since 1990's.

however, the adoption rate of digital modes of transaction was very low until in November 2016, the Indian government announced the biggest transformation in Indian history "DEMONETIZATION", by which banning the use of Rs.500 and Rs.1000 currency notes from midnight of 8<sup>th</sup> November 2016. Within a span of time digital modes of transaction became inevitable due to excessive scarcity in the issue and distribution of new notes and decrease usage of ATM withdrawal. Demonetization has increased the level of digital transaction and has had a positive impact on the banking culture and attracted many users.

### **DEMONETIZATION STORY DURING NOVEMBER 2016:**

Though, demonetization was not new in India, the November 2016 Demonetization drive by the Government of India can surely be considered as the biggest ever such move considering its suddenness, far reaching impact and controversial character. Scrapping of Rs.500 and Rs.1000 banknotes of the Mahatma Gandhi Series from 8th November, 2016 midnight was an announcement that Prime Minister Narendra Modi made abruptly to challenge mainly parallel economy, terror financing and counterfeit currency – the three malaises that were destroying Indian economy. The move was an unconsulted one and kept in absolute secrecy. As the legal tender status of the old notes was withdrawn, it was also announced that new notes of Rs.500 and Rs.2000 denominations would soon replace the old notes. Banks and ATMs were declared closed the next day (9th November 2016) to prepare themselves for this sudden blow. Banks started operation from 10th November 2016 itself, facing long queues of people who were rushing to the counters of the banks across India to exchange and deposit the demonetized notes. Though ATMs started operating from 11th November 2016, most people had to return empty-handed due to non-availability of Rs. 100 notes. The country faced further cash crunch as RBI set limit on cash withdrawals and exchange. Exchange of old annulled notes with the legal tenders was limited to the extent of Rs.4000/person from 8th November to 13th November 2016, Rs.4500/person from 14th November to 17th November 2016 and Rs.2000/person from 18th November to 25th November 2016. From 25th November 2016 onwards notes exchanging facility was available only at the RBI counters till 31st March 2017 for the Resident Indians and

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till 30th June 2017 for the Non-Resident Indians. To ensure that everyone gets the opportunity to exchange their notes to the maximum possible extent, government instructed the banks to put indelible ink on the finger of the persons exchanging the banned notes. Exchange of the banned notes (also called specified notes) was allowed through Business Correspondents to the extent of Rs.4000/person on presentation of valid identity proof and requisition slip. A ceiling was also attached to the withdrawal of currencies both from bank counters as well as ATMs. Cash withdrawal from respective bank accounts was restricted to Rs.10000/day to the extent of Rs.20000/ week till 13th November 2016, after that the weekly limit was raised to Rs.24000/week and the restriction imposed on daily withdrawal of Rs.10000/day was removed. Current account holders and the Farmers were allowed to withdraw Rs.50000/week from 14th November 2016 and 17th November 2016 respectively and the government allowed people to withdraw Rs.250000 from their respective bank accounts for wedding ceremonial purpose only. People of the country could withdrew Rs.2000/day per card till 18th November 2016 and Rs.4000/day per card from 19th November 2016 onwards. However, no limit was imposed on deposit of money (in case of non-compliance with KYC norms, maximum allowable deposit was Rs.50000) in the respective bank accounts as well as on usage of non-cash method (viz. mobile wallets, demand drafts, cards, cheques, electronic fund transfer methods, etc.) of operating one's bank account. Apart from the exchanges and withdrawals, to reduce the pain that the common people was facing in their struggle to retain their hard-earned money, PM himself exempted few sectors considering the situation and allowed them to accept old Rs.500 and Rs.1000 notes.

Exemptions for using the annulled notes was extended for Government hospitals and petrol pumps till 14th November 2016 midnight, for government bus stops allowance was for first 72 hours from midnight of 8th November 2016. Government also extended the acceptance of the specified notes for public utility payments till 24th November 2016. National Highway tolls were also exempted from the clauses of demonetization till 2nd December 2016 midnight. Air tickets and fuel companies it was extended till 2nd December 2016 but then withdrawn as they were observed to have a well-equipped digital transaction structure. Foreign tourists or those going to foreign nations could exchange their old notes in the International airports to the extent of

Rs.5000. By 22nd November 2016, 82500 out of 2.2 lakhs ATMs was re-calibrated to dispense new Rs.500 and Rs.2000 notes and by 3rd December 2016 the number increased to 1.8 lakhs ATMs. As per the data provided by RBI, within 7th December 2016, almost 76% of junked notes came back to the system. The buzz of demonetization slowed down by the end of December 2016. The long queues shortened as the days passed, and cash crunch was appearing to be a long ago story. Withdrawal limit from banks got increased by 15th January 2017 and to the relief of the entire country the restriction on withdrawals from ATMs was removed completely with effect from 1st February 2017 (as announced by PMO on 30th January 2017).

### **DIGITAL PAYMENT MODES OFFERED BY BANKS:**

**Real Time Gross Settlement (RTGS):** RTGS is an electronic payment system maintained by RBI which enables individuals to transfer funds between banks. It is generally meant for high value transaction as the minimum amount for making RTGS is Rs.200000 with no upper limit of transaction.

**National Electronic Fund Transfer (NEFT):** NEFT is a fund transfer system facilitating nationwide transfer of funds to both account holders in NEFT enabled branches of a bank as well as walk in customers who do not have a bank account. Individuals, firms as well as corporate firms can avail this facility to transfer funds to any other party having a bank account with the same or different bank branch. Maximum fund transfer limit for NEFT is Rs.50000 per transaction.

**Immediate Payment Service (IMPS):** IMPS, unlike NEFT and RTGS, is a 24x7 service (available in bank holidays as well) facilitating instant and secured electronic fund transfer using mobile phones or ATMs and is safe as well as economical. The service is available in between person (P) on one side and either another person or an account (A) or a merchant on the other side.

**Electronic Clearing System (ECS):** ECS is mainly used for paying utility bills such as electricity, insurance premium, telephone, etc. It uses the service of a clearing house in order to transfer funds from one bank account to another. This system is useful for bulk transfers and transfers of repetitive nature. For example, in order to distribute dividend, salary or pension, the institutions use ECS (credit), on the other hand for making regular payments to firms or

**Point of Sale (POS):** This is an electronic device acting as a sales terminal for processing payments at different malls or retail outlets. It is the most common machine used for debit or credit card payments in which the machine reads the card punched or swiped and checks whether there is sufficient funds in the customer's account and then accordingly transfers funds from customer's account to seller's account.

**Mobile Banking:** It is a service offered by a bank or any financial institution through which a customer conducts financial transactions remotely by using only a smartphone or a tab. Unlike internet banking which is conducted through bank's own website, it is done through a software, usually called an app. It is a 24×7 service and can be used for transactions other than fund transfer as well, such as obtaining balances, statements etc. However, the availability of other services may vary from bank to bank.

**M-Wallets:** Digital or Mobile Wallet services are provided by many banks as well as other approved financial institutions like Paytm, Freecharge, Phonepe etc. Money can be added to the wallets using debit or credit cards or internet banking and then can be used for an array of transactions including payment of utility bills, shopping etc. However, an active mobile connection or e-mail id is a must.

**United Payment Interface (UPI):** This digital platform came into existence on 11th April, 2016. It was developed by National Payment Corporation of India under the assistance and regulation of RBI and IBA (Indian Banks Association). UPI is a hassle-free digital interface for transferring fund without the need of entering the extensive details relating to bank account number, IFSC code, bank account type, bank name and so on. This is basically an advanced or modified version of IMPS (Immediate Payments Service). Presently 101 banks have adopted this technology (up to November 2018). Registration in UPI is a onetime process after which funds may be transferred using mobile devices. The BHIM (Bharat Interface for Money) app developed by NPCI is also

**Unstructured Supplementary Service Data (USSD):** Unlike UPI, it does not require a smartphone and access to internet but use specified codes for transactions. This USSD interface

(also called \*99# service) was developed by NUUP (National Unified USSD Platform) to overcome the problem of poor internet connectivity in rural areas. It came up with the option of 12 regional languages in addition to English. Currently, this service is being offered by 51 banks. BHIM app as mentioned above can come up with USSD features as well.

**Aadhar Enabled Payment System (AEPS):** AEPS is developed to bring the bank at the customers' places and also to enable interoperability among different systems of different banks. AEPS has thereby facilitated operations of Aadhar Enabled Bank Account (AEBA) for financial inclusion and direct benefit transfer to the eligible beneficiaries under different social security schemes.

### **PROBLEM IDENTIFICATION:**

The November 2016 demonetization has been the most controversial decision of the Government of India in recent times that not only attracted the interest of the academicians but also placed it as a bone of contention in political warfare. While the Government is still continuing with their claims of black money recovery, checking terror financing, combating threat of parallel economy due to counterfeit notes etc., their claims are yet to be tested based on authentic data as most of the above can be realized in long term only. However, the claim of a positive shift towards a digital economy can surely be tested based on the data available so far. This is because, while demonetization as a temporary shock should increase the transactions through digital payment modes only for a limited short term period (say up to 2-3 months), a long term sustainable increase in those transactions after demonetization will prove a permanent change in usage of those modes due to demonetization experience. This gives us enough impetus to take up such an investigation as a research issue

### **RIVIEW OF LITRACTURE:**

We have conducted a detail survey of existing literature on India's effort to move towards a digital economy and digital payment services in the backdrop of recent demonetization drive in India. The following studies are noteworthy in this respect.

**Subramanian (2014)** conducted a study on the effectiveness of various paper-free payment

systems in India based on secondary data. He concluded that simplification of the operational process and constant encouragement by the banks are the key to the development of these instruments as an alternative to the cash based transaction system of the country.

**Saini (2016)** conducted a study on demonetization as a metamorphosis of cashless India. Using information related to increase in number of card users in various sectors, he found that ban of old notes has resulted in a boost towards cashless economy.

**Vij (2018)** conducted a descriptive study on effects of demonetization on Indian economy based on authentic secondary data. She opined that demonetization proved to be a boon to digital transactions and e-wallets and the government must continue to provide proper infrastructure and cyber security to support this surge of digital transactions in the economy to ensure India's shift towards a digital economy.

#### **RESEARCH GAP:**

Studies conducted on the issue 'demonetization and digital banking' are really limited in number.

Studies were mostly descriptive in nature and attempted to figure out the potential impact of demonetization rather than analysing its actual effect.

A considerable number of studies conducted in this context are basically perception study based on primary data collected from the respondents. Studies based on authentic secondary data are only a few.

The studies conducted based on secondary data considered the effect of demonetization on a part of the digital products i.e. mobile wallets only, rather than the entire array of digital payment products available.

Thus there is ample scope for an in-depth data driven research on the effect of demonetization on the digital products offered by the banks in India.

#### **OBJECTIVES OF THE STUDY:**

- To identify variations or trends in various digital modes of transaction during demonetization period.
- To determine a comparative analysis of aspects of digital modes of payments offered by banks during the pre and post demonetization period.

**RESEARCH METHODOLOGY:**

(a) **Type of Research:** Our study is primarily empirical in nature and plans to compare certain quantitative indicators to assess the impact of demonetization on the digital banking channels offered by bank.

(b) **Sample:** For the purpose of this study we have selected all the digital banking products existing prior to demonetization in November 2016 excluding the ECS mode. Accordingly, transactions through NEFT, RTGS, IMPS, M-wallets, Mobile Banking, Debit and Credit Card usage at Point of Sale (POS) are included in our sample for analysis. The exclusion of ECS from the sample is justified by the fact that the channel is mostly used by the corporate organizations for multiple simultaneous transfers or by individuals for repeated monthly transactions like SIP or utility bill payment and demonetization is unlikely to bring any significant change in such practices. Non-retail (i.e. interbank) transactions through RTGS have also been kept outside the ambit of this analysis as they are settled through digital mode by compulsion. However, our sample includes m-wallets in spite of the fact that some non-bank institutions (Paytm, Freecharge etc.) also offer similar service. The reason behind such inclusion is that use of m-wallets of even these other institutions also necessitates using digital banking channels for loading money into the wallets.

Additionally, we have also included the United Payment Interface (UPI) in our sample, though no intertemporal comparative analysis was done with it as the same became popular mainly after the demonetization drive.

(c) **Period of Study:** For the purpose of comparing the trends in different digital modes of transactions offered by the banks, we have considered an 18 months period each prior and post demonetization excluding the month of November 2016, the month when demonetization was implemented. Thus the pre-demonetization period is defined as an eighteen months period from May 2015 to October 2016 while the post-

demonetization period is defined as an eighteen months period from December 2016 to May 2018. The reason behind selecting such relatively longer period, especially post demonetization, is to capture the permanent impact of demonetization, if any, rather than to look into its short run impact. This is because, if demonetization had any short run impact on any mode of transaction, it would return to its previous level over a relatively longer period after demonetization. However, to capture the trend in UPI, we have considered transaction data since its inception up to May 2018.

- (d) **Source of Data:** For the purpose of analysis, we have relied upon the data on the number of transactions of each digital mode offered by the banks during the sample period. The relevant data has been obtained from the official website of Reserve Bank of India under the 'Payment System Indicators' module. However, the data relating to UPI transactions has been compiled from the official website of National Payment Corporation of India.
- (e) **Research Methods Used:** The study resorts to appropriate statistical tools including tabulation, compounded annual growth rate and line chart. Additionally, it also uses Independent Sample t test to compare the number transactions of various digital modes during pre and post demonetization period for any significant growth.
- (f) **Software Used:** The study uses Excel 2007/2013 and SPSS 19.0 for processing the data and conducting the tests.

### **EMPIRICAL RESULTS AND FINDINGS:**

It is clear from the above table that the total and average number of transactions of each and every digital modes offered by the banks have increased (though not in similar degree) during the eighteen months post demonetization as compared to the similar period prior to demonetization. This is an important indication of a positive shift towards digital modes by customers. However, a corresponding increase in the standard deviation and standard error of the number of monthly transactions indicate that month wise variation has also increased considerably. This necessitates application of appropriate statistical tests of significance.

**Test of Normality of Data:** The values of Kurtosis (not equal to 3) and Skewness (not equal to

as reported in the previous section indicate that the data may not be normal, in which case application of non-parametric tests over parametric tests will be appropriate. We have applied Kolmogorov-Smirnov Goodness-of-Fit Test to investigate if the data relating to 76 The Management Accountant 1 July 2019 [www.icmai.in](http://www.icmai.in) the number of transactions of various digital banking products during the pre and post demonetization period follows a normal distribution. The result of the Kolmogorov-Smirnov Goodness-of-Fit Test is given in Table 3 below.

The results show that data corresponding to the number of transactions during the two time periods follows normal distribution as the p value of the K-S test statistic is more than 0.05 in all the cases. Thus parametric tests may be applied to determine if the number of transactions through digital modes offered by banks was significantly different during the post-demonetization period as against the pre demonetization period.

#### **RESEARCH FINDINGS ON EACH DIGITAL PAYMENT MODES:**

**RTGS (Customer Transactions):** Total customer transactions in RTGS shows an overall increase of 36.55 million during the post-demonetization period, an increase of 25.36% over the corresponding figure pre demonetization.

**EFT/NEFT:** Total customer transactions through EFT/NEFT recorded an overall increase of 47.38% in post demonetization period. However, the momentum was not short lived but continued, indicating a positive shift in the usage.

**IMPS:** Total number of IMPS transactions recorded an increase of 238.56% in post demonetization period, the second highest among all the digital products offered by banks after m-wallets. The average monthly number of transactions during post demonetization period was almost triple the corresponding average figure during pre demonetization.

**Mobile Banking:** Similar to IMPS, total number of Mobile Banking transactions also recorded an increase of 237.82% in post demonetization period than the corresponding pre demonetization period, supported by an almost 5% cumulative monthly growth rate. However, the usage further improved remarkably after December 2017 indicating its improved acceptance.

**Credit Card Usage at POS:** In our study we have consciously excluded credit card usage at

ATMs because post demonetization, many restrictions were imposed on ATM withdrawals and new Rs. 2000 notes were also not available sufficiently over a long period of time. Thus, though withdrawals from ATMs assume the characteristics of digital transactions (at least partially as it replaces a traditional branch transaction), inclusion of the same would not capture the change due to demonetization. However, the same is not true for usage at POS as higher usage at POS may surely be viewed as more readiness for digital economy. Nevertheless, similar to all the other digital modes mentioned earlier, total number of credit card usages at POS increased by 63.78% in post demonetization period than the corresponding pre demonetization period. However, a steady growth in this usage during the rest of the post demonetization period is also observable which implies growing acceptance of credit card usage at POS among the customers.

**Debit Card Usage at POS:** Our logic behind considering transactions at POS and not at ATMs also remains the same for debit cards. As expected, data confirms a 166% increase in the total number of debit card transactions at POS during post demonetization period defined by us. Similar to the POS usages of credit cards, here also we found almost 100% increase in the monthly POS usage just after demonetization, which eventually stabilized over two to three month period due to ease of withdrawals at ATMs.

**M-wallets:** We have already explained our argument regarding m-wallets being considered as a digital mode MONEY & BANKING [www.icmai.in](http://www.icmai.in) July 2019 | The Management Accountant 79 offered for transactions in the Research Methodology section of this article. Keeping the same in mind, we analysed the number of m-wallet transactions pre and post demonetization. Our analysis shows a 367% increase in the total number of m-wallet transactions (even central government was also partially promoting this mode of digital transactions initially after the demonetization).

**UPI Transactions:** As mentioned earlier, our study does not attempt an inter- temporal comparative analysis of UPI transactions as it was not introduced long before demonetization (UPI was introduced in 11th April 2016 only). However, the data relating to UPI transactions : it indicate that this digital mode was adopted by the users extensively only after the demonetization, thanks to the various promotional measures by the government during the initial period after demonetization. However, ease of operation and 24×7 availability was also the reasons for its wide adoption. However, it may be noted that demonetization as such did not play that influential

role in the phenomenal growth of UPI transactions as the momentum picked up from 7th month since demonetization, when the traditional banking system was almost normalized.

### **Conclusion:**

One of the strong arguments put forward by the Government of India in favour of its demonetization initiative was to make India a cashless digital economy. Though we do not doubt such intention of the government, our study was a humble and unbiased attempt to investigate how far such claims are justifiable based on authentic data on various digital modes of transactions. Our analysis clearly identified that demonetization led to a sudden increase in the number of transactions of almost all the digital modes under our consideration during its initial phase (the period when ATM withdrawals were restricted, sufficient new currency notes were unavailable). However, such momentum were not neutralized but went on for all the different digital modes, though the growth was not similar in all cases. While M-wallet transactions increased the most followed by IMPS and Mobile Banking, other channels such as usage of cards at POS, EFT and NEFT and RTGS (Customer Transactions) did not lag far behind. To confirm further, we conducted statistical test to see whether the mean number of transactions significantly differs across the pre and post demonetization period. The test results revealed that the t statistic is significant in each and every case thereby indicating that the average number of transactions grew significantly post demonetization. Thus it will not be wrong 80 The Management Accountant 1 July 2019 [www.icmai.in](http://www.icmai.in) to conclude that the recent demonetization drive in India has given the much needed push to the digital modes of transactions from where they received wide acceptance and increased customer participation. As a result, though achieving a state of absolute cashless economy may still be a far away dream, India is already striding strong on that path.