

# Digital Payment System: Before, During and After Demonetisation

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**Abstract:** *Faceless, Paperless and Cashless with this idea our Prime Minister Shri Narendra Modi launched Digital India campaign on Second July of 2015. But realization of growth in digital payment was observed mainly after another important announcement of our Prime Minister on eighth September of 2017 i.e. ban of Gandhiji series currency notes of Rs. 500 and Rs. 1000, Demonetisation. It really paves the way for digital payment system, as government promoted and encouraged various digital payment modes to meet the problem of liquidity and cash crunch. With old mode of digital payment NACH, CTS, NETC new modes of digital payments like IMPS, AEPS, BBPS, UPI, BHIM were also introduced. This paper attempts to check the effect of demonetisation on major digital payments modes, which were available before demonetisation. In our analysis we found that not only total amount of digital payment transactions was significantly increased but event all individual modes of digital payment system has significant growth after demonetisation*

**Keywords:** Demonetisation, Digital Payment System, Cashless, NPCI

## I. INTRODUCTION

Digital India movement is to prepare the country for digital transformation i.e. empower society and economy with advantages of digitalization. In this program Central and State both government has well defined roles. It is also expected that government services will be available to all citizens electronically. Emphasis was also on digital literacy and availability of digital sources and services in Indian languages. The programme will be implemented in phases from 2014 till 2018, which would require around Rs. 113,000 core. For implementation the government is planning to strengthen National Informatics Center (NIC) by restructuring and positions of chief information officers (CIO) would be also created.

Digital India campaign has the vision of Infrastructure as a utility to every citizen, Governance and Services on Demand and Digital empowerment of citizens.

As part of promoting cashless transactions and converting India into less-cash society, various modes of digital payments are available.

As a part of Digital India movement, government of India also emphasised on digital payment system. To give boost and better settlement of digital payment system government initiated number of new modes of digital payment under National Payments Corporation of India (NPCI). It is an umbrella organization for all retail payments system in India.

NPCI was set up with the guidance and support of the Reserve Bank of India (RBI) and Indian Banks' Association (IBA) in December 2008 and the Certificate of Commencement of Business was issued in April 2009. It was aimed to operate for the benefit of all the member banks and their customers. NPCI has ten promoter banks namely, State Bank of India, Punjab National Bank, Canara Bank, Bank of Baroda, Union Bank of India, Bank of India, ICICI Bank, HDFC Bank, Citibank and HSBC.

Board for Regulation and Supervision of Payment and Settlement Systems (BPSS) at its meeting held on September 24, 2009 had given an in-principle approval to issue authorization to NPCI for operating various retail payment systems in the country and granted Certificate of Authorization for operation of National Financial Switch (NFS) ATM Network with effect from October 15, 2009 and it taken over NFS operations on December 14, 2009. Membership regulations and rules had been framed for enrolling all banks in the country as members. This was done so that when the nation-wide payment systems are launched, all would get included on a standardized platform.

NPCI took various initiatives to improve digital payment systems. In this regard it launched various product and services. Such products are as follow.

**Banking Cards:** Banking cards offer consumers more security, convenience, and control than any other payment method. The wide variety of cards available – including credit, debit and prepaid – offers enormous flexibility, as well. These cards provide 2 factor authentication for secure payments e.g secure PIN and OTP. RuPay, Visa, MasterCard are some of the example of card payment systems. Payment cards give people the power to purchase items in stores, on the Internet, through mail-order catalogues and over the telephone. They save both customers and merchants' time and money, and thus enable them for ease of transaction.

**USSD:** The innovative payment service \*99# works on Unstructured Supplementary Service Data (USSD) channel. This service allows mobile banking transactions using basic feature mobile phone, there is no need to have mobile internet data facility for using USSD based mobile banking. It is envisioned to provide financial deepening and inclusion of underbanked society in the mainstream banking services.

**AEPS:** AADHAAR ENABLED PAYMENT SYSTEM (AEPS) is a bank led model which allows online interoperable financial transaction at PoS (Point of Sale / Micro ATM) through the Business Correspondent (BC)/Bank Mitra of any bank using the Aadhaar authentication.

**UPI:** Unified Payments Interface (UPI) is a system that powers multiple bank accounts into a single mobile application (of any participating bank), merging several banking features, seamless fund routing & merchant payments into one hood. It also caters to the "Peer to Peer" collect request which can be scheduled and paid as per requirement and convenience. Each Bank provides its own UPI App for Android, Windows and iOS mobile platform(s).

**Mobile Wallets:** A mobile wallet is a way to carry cash in digital format. You can link your credit card or debit card information in mobile device to mobile wallet application or you can transfer money online to mobile wallet. Instead of using your physical plastic card to make purchases, you can pay with your smartphone, tablet, or smart watch. An individual's account is required to be linked to the digital wallet to load money in it. Most banks have their e- wallets and some private companies. e.g. Paytm, Freecharge, Mobikwik, Oxigen, mRuppee, Airtel Money, Jio Money, SBI Buddy, itz Cash, Citrus Pay, Vodafone M-Pesa, Axis Bank Lime, ICICI Pockets, SpeedPay etc.

**Banks Pre-paid Cards:** Spending money are loaded onto the prepaid card in advance with a bank account debit card if you have "opted in" to your bank's overdraft program. This means that your bank may charge you a fee for covering the cost of a purchase or ATM withdrawal that exceeds what you have in your account.

**Point of Sale:** A point of sale (PoS) is the place where sales are made. On a macro level, a PoS may be a mall, a market or a city. On a micro level, retailers consider a PoS to be the area where a customer completes a transaction, such as a checkout counter. It is also known as a point of purchase.

**Internet Banking:** Internet banking, also known as online banking, e-banking or virtual banking, is an electronic payment system that enables customers of a bank or other financial institution to conduct a range of financial transactions through the financial institution's website. It includes National Electronic Fund Transfer (NEFT), Real Time Gross Settlement (RTGS), Electronic Clearing System (ECS) and Immediate Payment Service (IMPS) .

**Mobile Banking:** Mobile banking is a service provided by a bank or other financial institution that allows its customers to conduct different types of financial transactions remotely using a mobile device such as a mobile phone or tablet. It uses software, usually called an app, provided by the banks or financial institution for the purpose. Each Bank provides its own mobile banking App for Android, Windows and iOS mobile platform(s).

**Micro ATMs:** Micro ATM meant to be a device that is used by a million Business Correspondents (BC) to deliver basic banking services. The platform enable Business Correspondents (who could be a local kirana shop owner and will act as 'micro ATM') to conduct instant transactions.

## II. LITERATURE REVIEW

Mishra (2017) in her study found that Government is decided to set digital targets for banks and payment firms. The government has taken a holistic approach to digital banking, looking at ways to incentivize train merchants and customers who use digital platforms, food and civil supply with the five lakh ration shops. Government is also planning to educate people well about digital payments. The process of demonetization was not properly planned. Planning for making India truly digital has begun only post demonetization.

Bhakta (2017) noted that digital payments grew 57% year-on-year in the last fiscal with mobile wallets more than doubling and card payments rising 44%, helped by a strong government push particularly after the demonetisation. He had also reported Aadhaar-enabled payment systems and the government-backed, Unified Payments Interface (UPI), have crossed transaction of 8.8 billion. In his article he has also covered details found in interview with AP Hota, MD, NPCI. He reported that hope in increasing in UPI as use of RuPay card is increasing will help to achieve target of 25 billion transactions. 1 lakh BharatQR codes that have been distributed across merchant outlets this year and they have plan to do another additional 93,000 the coming year. RuPay cards had 195 million transactions at PoS terminals and around 87.5 million transactions for online transactions.

Bhakta and Variyar (2017) reported that The Ratan Watal committee recommend proper measures for encouraging digital payment in India, may have envisaged a rosy picture for digital transactions and recommended sweeping changes to regulation around payments. But industry executives and experts felt that the report was extremely futuristic and almost verges on wishful thinking as several recommendations are likely to face implementation issues.

Agarwal and Variyar (2017) reported in their article that in Budget our finance minister Arun Jaitley encouraged digital payments and announced a mission targeting at least 2,500 crore cashless transactions in 2017-18 through payment modules such as the government's Unified Payments Interface (UPI) and Aadhaar Pay. The biometrics-based payments system will be launched shortly, for which banks will be encouraged to roll out 2 million Aadhaar-linked payments terminals by September. He also put a proposal to mandate all government receipts through digital means beyond a limit is also under consideration.

Variyar (2017) reported issues of digital payment did not consider in Budget 2017. Such issues were: costs of incentivising digital payments should be borne by government and RBI and not customers or financial intermediaries. Other issue was interoperability and open access to payment systems by non-bank payment service providers emphasised by Ratan Watal Committee. She also reported an issue related to role of NPCI.

Goriparthi and Tiwari (2017) have found demonetisation as positive step ahead to dream of Digital India. They also argued policy direction by the government highlights the tremendous growth possibilities for the digital payments sector that is only just started to establish itself. They also emphasised that demonetization has also in a way dismantled some of the traditional barriers preventing Indians from adopting digital payment solutions such as the habit of using cash, complexity and unfamiliarity of digital payment systems, lack of compelling value proposition, and anxiety over fraud and network security.

Ravi (2017) in his study found great scope of digital payment in rural India as it is faster and cheaper. He also argued that NPCI had developed new payment application, which are designed to work on all phones with or without internet and even without phones is helping rural India. He also emphasised on advantages of new digital payment system like: reduction in transaction cost, development of IT act in support of digital payment system, scope for development of ICT in India and ease in day settlement for merchants and small retailers.

Kumari and Khanna (2017) mentioned that cashless economy initiative will be of significant benefits to developing economy; hence the cashless system will be helpful in the fight against corruption and money laundering. One most significant contribution of the cashless economy is that it is expected to reduce the risk associated with carrying cash like loss of cash, theft and armed robbery, which will drastically reduce. They have also put an argument about positive relationship between cashless and economic growth.

Nayak (2017) reported State Bank of India's research department found that Demonetisation has help the nation leapfrogged three years ahead in digitisation and this trend is also expected to lower inflation. They had mainly reported total debit and credit card transactions through PoS (point of sale), between April'16 and April'17 it rose 88% and transaction through various prepaid instruments – mobile wallet, PPI cards, and paper vouchers and mobile banking rose 122% in the same period.

Joshi (2017) concluded that current government took enhanced initiatives to develop digital payment system in India. He has studied remarkable growth in digital payments in last three years. He has also observed that people have proactively adopted new modes of digital payments and also hoisted the usage of new digital payment modes over old digital payment modes. He emphasised that demonetisation amplified digital payment transactions especially in newfangled modes of digital payments like NACH, IMPS, AEPS, BBPS, UPI, BHIM(UPI) and NEFTC.

**Objectives**

- To study the effect of demonetisation on digital payment
- To study the difference between growth in different mode of digital payment before, during and after demonetisation.

**III. RESEARCH METHODOLOGY**

To accomplish above objectives, we have followed descriptive research design. For the study required data of retail digital payment data of NPCI rupees in billion are collected from the website of Reserve Bank of India.

Time period for the data is from April 2016 to August 2017. In this period data from April 2016 to October 2016 i.e. 7 months' time period before demonetisation, November and December 2016 i.e. 2 months' time period of demonetisation and January 2017 to August 2017 i.e. 8 months' time period after demonetisation.

Analysis of Variance (ANOVA) is used to check the difference in total and different modes of digital payment before, during and after demonetisation. After ANOVA for different modes of digital payment Post hoc test is applied after applying levene's test for variance.

**IV. DATA ANALYSIS AND FINDINGS**

Following table shows average amount of value in billion in total and different modes of digital payment and their standard deviation before, during and after demonetisation.

Table 1. Average and standard deviation of total amount and in various modes of digital payments

		N	Mean	Std. Deviation
Total Financial Transactions	Before Demonetisation	7	7695.3386	273.62773
	During Demonetisation	2	7701.8550	1048.98584
	After Demonetisation	8	9082.2600	753.36988
	Total	17	8348.7741	923.73002
NFS Inter Bank ATM Cash Withdrawal	Before Demonetisation	7	974.527	57.2160
	During Demonetisation	2	528.387	62.4892
	After Demonetisation	8	1025.918	74.9389
	Total	17	946.224	171.1085
NACH- National Automated Clearing House	Before Demonetisation	7	573.999	68.6141
	During Demonetisation	2	615.316	12.8988
	After Demonetisation	8	726.219	119.5138
	Total	17	650.492	116.6480
CTS Cheque Clearing (Processed Volume)	Before Demonetisation	7	5875.563	196.1353
	During Demonetisation	2	6115.563	984.7825
	After Demonetisation	8	6673.560	641.5921
	Total	17	6279.326	638.3703
IMPS	Before Demonetisation	7	260.182	46.2596
	During Demonetisation	2	378.406	75.8031
	After Demonetisation	8	567.325	56.9947
	Total	17	418.629	157.5563
RuPay Card usage at (POS)	Before Demonetisation	7	7.842	1.9734
	During Demonetisation	2	50.053	28.2776
	After Demonetisation	8	39.847	7.6693

	Total	17	27.869	19.6442
RuPay Card usage at (eCom)	Before Demonetisation	7	2.136	.6196
	During Demonetisation	2	7.958	4.2314
	After Demonetisation	8	10.316	1.0945
	Total	17	6.670	4.1996
AEPS (Inter Bank) Transactions over Micro ATM (e.g. Cash withdrawal/ Cash Deposit)	Before Demonetisation	7	.965	.7201
	During Demonetisation	2	1.673	.5558
	After Demonetisation	8	9.536	5.0702
	Total	17	5.082	5.4998

Above table shows in all modes of digital payment and in total also amount is increased after demonetisation. Standard deviation during demonetisation period is highest or lowest in different modes of digital payment. To check whether in different phases i.e. before, during and after demonetisation amount of digital payments in total and in different modes of digital payments are significantly different or not we have to apply ANOVA and group them in homogeneous group post hoc tests are applied.

There are various post hoc test available on the basis of homogeneity of variance. Following table shows result of levene's test

**H0:** Variances are homogeneous

**H1:** Variances are not homogeneous

Table 2. Test of Homogeneity of Variances

	Levene Statistic	df1	df2	Sig.
Total Financial Transactions	2.445	2	14	.123
NFS Inter Bank ATM Cash Withdrawal	.157	2	14	.856
NACH- National Automated Clearing House	1.876	2	14	.190
CTS Cheque Clearing (Processed Volume)	3.002	2	14	.082
IMPS	.335	2	14	.721
RuPay Card usage at (POS)	15.072	2	14	.000**
RuPay Card usage at (eCom)	15.518	2	14	.000**
AEPS (Inter Bank) Transactions over Micro ATM (e.g. Cash withdrawal/ Cash Deposit)	15.766	2	14	.000**

\*\* The variance difference is significant at the 0.01 level

From the above table we can see that in case of RuPay Card usages (both POS and eCom) and AEPS variances are significantly different. Hence in these cases for post hoc study Games- Howel test is applied, where as in other cases where variances are homogeneous Tukey HSD and Ryan-Einot-Gabriel-Welsch Range test were applied.

To check whether in digital payments before, during and after demonetisation are significantly different or not we need to check following hypothesis.

**H0:** There is no significant difference in digital payments before, during and after demonetisation.

**H1:** There is significant difference in digital payments before, during and after demonetisation.

Following table of ANOVA shows result of statistical test and significance difference in various digital payments in various phases of demonetisation



Table 3: ANOVA

		Sum of Squares	df	Mean Square	F	Sig.
Total Financial Transactions	Between Groups	8129867.098	2	4064933.549	10.305	.002**
	Within Groups	5522567.314	14	394469.094		
	Total	13652434.412	16			
NFS Inter Bank ATM Cash Withdrawal	Between Groups	405592.249	2	202796.124	45.168	.000**
	Within Groups	62857.785	14	4489.842		
	Total	468450.033	16			
NACH- National Automated Clearing House	Between Groups	89309.282	2	44654.641	4.869	.025*
	Within Groups	128398.652	14	9171.332		
	Total	217707.934	16			
CTS Cheque Clearing (Processed Volume)	Between Groups	2438172.656	2	1219086.328	4.181	.038*
	Within Groups	4082094.349	14	291578.168		
	Total	6520267.005	16			
IMPS	Between Groups	355859.340	2	177929.670	60.279	.000**
	Within Groups	41324.611	14	2951.758		
	Total	397183.951	16			
RuPay Card usage at (POS)	Between Groups	4939.652	2	2469.826	28.005	.000**
	Within Groups	1234.690	14	88.192		
	Total	6174.342	16			
RuPay Card usage at (eCom)	Between Groups	253.593	2	126.797	62.082	.000*
	Within Groups	28.594	14	2.042		
	Total	282.187	16			
AEPS (Inter Bank) Transactions over Micro ATM (e.g. Cash withdrawal/ Cash Deposit)	Between Groups	300.594	2	150.297	11.475	.001*
	Within Groups	183.370	14	13.098		
	Total	483.964	16			

\* The mean difference is significant at the 0.05 level.

\*\* The mean difference is significant at the 0.01 level

Above test result shows that in all cases P-values are significant at 5% level of significance and in most of cases even at 1% level of significance. At the same times levene's test suggest about significance of variance to select the test for post hoc study.

Table 4. Multiple Comparisons for homogeneous variance

Dependent Variable	(I) Demonetisation	(J) Demonetisation	Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval		
						Lower Bound	Upper Bound	
Total Financial Transactions	Tukey	Before	During Demonetisation	-6.51643	503.57450	1.000	-1324.5121	1311.4793
		Demonetisation	After Demonetisation	-1386.92143*	325.05594	.002**	-2237.6840	-536.1589
	HSD	During	Before Demonetisation	6.51643	503.57450	1.000	-1311.4793	1324.5121
		Demonetisation	After Demonetisation	-1380.40500*	496.53115	.037*	-2679.9663	-80.8437
			Before Demonetisation	1386.92143*	325.05594	.002**	536.1589	2237.6840
		After	During Demonetisation					

		Demonetisation		1380.40500*	496.53115	.037*	80.8437	2679.9663
NFS Inter Bank ATM Cash Withdrawal	Tukey HSD	Before Demonetisation	During Demonetisation	446.1399*	53.7245	.000**	305.528	586.752
			After Demonetisation	-51.3913	34.6790	.329	-142.156	39.374
		During Demonetisation	Before Demonetisation	-446.1399*	53.7245	.000**	-586.752	-305.528
			After Demonetisation	-497.5312*	52.9731	.000**	-636.177	-358.886
		After Demonetisation	Before Demonetisation	51.3913	34.6790	.329	-39.374	142.156
			During Demonetisation	497.5312*	52.9731	.000**	-358.886	636.177
NACH- National Automate d Clearing House	Tukey HSD	Before Demonetisation	During Demonetisation	-41.3176	76.7845	.854	-242.284	159.649
			After Demonetisation	-152.2198*	49.5642	.021*	-281.943	-22.496
		During Demonetisation	Before Demonetisation	41.3176	76.7845	.854	-159.649	242.284
			After Demonetisation	-110.9022	75.7105	.337	-309.058	87.253
		After Demonetisation	Before Demonetisation	152.2198*	49.5642	.021*	22.496	281.943
			During Demonetisation	110.9022	75.7105	.337	-87.253	309.058
CTS Cheque Clearing (Process ed Volume)	Tukey HSD	Before Demonetisation	During Demonetisation	-239.9993	432.9470	.846	-1373.143	893.145
			After Demonetisation	-797.9970*	279.4661	.032*	-1529.438	-66.556
		During Demonetisation	Before Demonetisation	239.9993	432.9470	.846	-893.145	1373.143
			After Demonetisation	-557.9978	426.8915	.414	-1675.293	559.297
		After Demonetisation	Before Demonetisation	797.9970*	279.4661	.032*	66.556	1529.438
			During Demonetisation	557.9978	426.8915	.414	-559.297	1675.293
IMPS	Tukey HSD	Before Demonetisation	During Demonetisation	-118.2243*	43.5610	.042*	-232.236	-4.213
			After Demonetisation	-307.1436*	28.1185	.000	-380.738	-233.550
		During Demonetisation	Before Demonetisation	118.2243*	43.5610	.042*	4.213	232.236
			After Demonetisation	-188.9193*	42.9517	.002**	-301.336	-76.503
		After Demonetisation	Before Demonetisation	307.1436*	28.1185	.000**	233.550	380.738
			During Demonetisation	188.9193*	42.9517	.002**	76.503	301.336

\* The mean difference is significant at the 0.05 level.

\*\* The mean difference is significant at the 0.01 level

**Homogeneous Subsets**

Table 5. Total Financial Transactions

	Demonetisation	N	Subset for alpha = 0.05	
			1	2
Tukey HSD <sup>a,b</sup>	Before Demonetisation	7	7695.3386	
	During Demonetisation	2	7701.8550	
	After Demonetisation	8		9082.2600
	Sig.		1.000	1.000
Ryan-Einot-Gabriel-Welsch Range	Before Demonetisation	7	7695.3386	
	During Demonetisation	2	7701.8550	
	After Demonetisation	8		9082.2600
	Sig.		.992	1.000

Means for groups in homogeneous subsets are displayed.

Uses Harmonic Mean Sample Size = 3.907.

The group sizes are unequal. The harmonic mean of the group sizes is used. Type I error levels are not guaranteed.

Table 6. NFS Inter Bank ATM Cash Withdrawal

	Demonetisation	N	Subset for alpha = 0.05	
			1	2
Tukey HSD <sup>a,b</sup>	During Demonetisation	2	528.387	
	Before Demonetisation	7		974.527
	After Demonetisation	8		1025.918
	Sig.		1.000	.546
Ryan-Einot-Gabriel-Welsch Range	During Demonetisation	2	528.387	
	Before Demonetisation	7		974.527
	After Demonetisation	8		1025.918
	Sig.		1.000	.173

Means for groups in homogeneous subsets are displayed.

Uses Harmonic Mean Sample Size = 3.907.

The group sizes are unequal. The harmonic mean of the group sizes is used. Type I error levels are not guaranteed.

Table 7. NACH- National Automated Clearing House

	Demonetisation	N	Subset for alpha = 0.05	
			1	2
Tukey HSD <sup>a,b</sup>	Before Demonetisation	7	573.999	
	During Demonetisation	2	615.316	
	After Demonetisation	8	726.219	
	Sig.		.102	
Ryan-Einot-Gabriel-Welsch Range	Before Demonetisation	7	573.999	
	During Demonetisation	2	615.316	615.316
	After Demonetisation	8		726.219
	Sig.		.673	.266

Means for groups in homogeneous subsets are displayed.



Uses Harmonic Mean Sample Size = 3.907.

The group sizes are unequal. The harmonic mean of the group sizes is used. Type I error levels are not guaranteed.

Table 8. CTS Cheque Clearing (Processed Volume)

	Demonetisation	N	Subset for alpha = 0.05	
			1	2
Tukey HSD <sup>a,b</sup>	Before Demonetisation	7	5875.563	
	During Demonetisation	2	6115.563	
	After Demonetisation	8	6673.560	
	Sig.		.133	
Ryan-Einot-Gabriel-Welsch Range	Before Demonetisation	7	5875.563	
	During Demonetisation	2	6115.563	6115.563
	After Demonetisation	8		6673.560
	Sig.		.664	.319

Means for groups in homogeneous subsets are displayed.

Uses Harmonic Mean Sample Size = 3.907.

The group sizes are unequal. The harmonic mean of the group sizes is used. Type I error levels are not guaranteed.

Table 9. IMPS

	Demonetisation	N	Subset for alpha = 0.05		
			1	2	3
Tukey HSD <sup>a,b</sup>	Before Demonetisation	7	260.182		
	During Demonetisation	2		378.406	
	After Demonetisation	8			567.325
	Sig.		1.000	1.000	1.000
Ryan-Einot-Gabriel-Welsch Range	Before Demonetisation	7	260.182		
	During Demonetisation	2		378.406	
	After Demonetisation	8			567.325
	Sig.		1.000	1.000	1.000

Means for groups in homogeneous subsets are displayed.

Uses Harmonic Mean Sample Size = 3.907.

The group sizes are unequal. The harmonic mean of the group sizes is used. Type I error levels are not guaranteed.

From the homogenous subset where variances are homogeneous we can observe that in case of total transaction we can create two groups i.e. one group for before and during demonetisation and another group for after demonetisation. In case of NFS inter bank ATM cash withdrawal two groups i.e. one during demonetisation where withdrawals were very less and another group of before and after demonetisation. In case of NACH and CTS cheque clearing, in all phases about growth is same before, during and after demonetisation. Where as in case of IMPS in all three phases average amount is significantly different so it creates three different groups for before, during and after demonetisation.

Table 10. Multiple Comparisons for different variance - Games-Howel

Dependent Variable	(I) Demonetisation	(J) Demonetisation	Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval	
						Lower Bound	Upper Bound
RuPay Card	Before	During Demonetisation	-42.2109	20.0092	.412	-421.236	336.814

usage at (POS)	Demonetisation	After Demonetisation	-32.0053*	2.8121	.000**	-40.031	-23.979
	During Demonetisation	Before Demonetisation	42.2109	20.0092	.412	-336.814	421.236
		After Demonetisation	10.2057	20.1783	.883	-341.863	362.275
		Before Demonetisation	32.0053*	2.8121	.000**	23.979	40.031
	After Demonetisation	During Demonetisation	-10.2057	20.1783	.883	-362.275	341.863
RuPay Card usage at (eCom)	Before Demonetisation	During Demonetisation	-5.8223	3.0012	.439	-61.359	49.715
		After Demonetisation	-8.1805*	.4523	.000**	-9.397	-6.964
	During Demonetisation	Before Demonetisation	5.8223	3.0012	.439	-49.715	61.359
		After Demonetisation	-2.3582	3.0170	.772	-55.412	50.696
	After Demonetisation	Before Demonetisation	8.1805*	.4523	.000**	6.964	9.397
		During Demonetisation	2.3582	3.0170	.772	-50.696	55.412
AEPS (Inter Bank) Transactions over Micro ATM (e.g. Cash withdrawal/ Cash Deposit)	Before Demonetisation	During Demonetisation	-7.076	.4780	.448	-3.373	1.958
		After Demonetisation	-8.5709*	1.8131	.005**	-13.854	-3.288
	During Demonetisation	Before Demonetisation	.7076	.4780	.448	-1.958	3.373
		After Demonetisation	-7.8633*	1.8352	.008**	-13.171	-2.556
	After Demonetisation	Before Demonetisation	8.5709*	1.8131	.005**	3.288	13.854
		During Demonetisation	7.8633*	1.8352	.008**	2.556	13.171

\* The mean difference is significant at the 0.05 level. \*\* The mean difference is significant at the 0.01 level

In case of where variances are different, in case of RuPay Card usage at (POS) and RuPay Card usage at (eCom) after demonetisation amount is significantly different than before and during demonetisation. In case of AEPS there is no significant difference between before and during demonetisation but after demonetisation amount is significantly different than before and during demonetisation amount.

## V. CONCLUSION

Digital India campaigning was aimed to promote digital payment system and cashless economy, but real effect on digital payment was realised after demonetisation action. Demonetisation made it compulsory to use digital payment as an alternate system to cash and after demonetisation also digital payment had continuously increased. We have found that under NPCI not only total digital payment transactions but also in all individual mode of digital payment i.e. NFS Inter Bank ATM Cash Withdrawal, NACH- National Automated Clearing House, CTS Cheque Clearing (Processed Volume), IMPS, RuPay Card usage at (POS), RuPay Card usage at (eCom) and AEPS (Inter Bank) Transactions over Micro ATM (e.g. Cash withdrawal/ Cash Deposit) there is significant increase in volume in terms of value in rupees after demonetisation. Thus, we can conclude that demonetisation has given positive boos to digital payment system and cashless in India.

## BIBLIOGRAPHY

- [1]. Agarwal, S., & Variyar, M. (2017). Budget 2017: Digital payments poised to be the new normal in 2017
- [2]. ETtech.ETtech.com. Retrieved September 17, 2017, from <http://tech.economictimes.indiatimes.com/news/technology/budget-2017-digital-payments-poised-to-be-the-new-normal-in-2017/56926690>
- [3]. Bhakta, P. (2017). Digital payments grew 57% in FY17 - ETtech. ETtech.com. Retrieved September 17, 2017, from <http://tech.economictimes.indiatimes.com/news/internet/digital-payments-grew-57-in-fy17/58175334/files/100/58175334.html>

- [4]. Bhakta, P., & Variyar, M. (2017). Digital economy to offer 5-7 million job opportunities: Ravi Shankar Prasad ETtech. ETtech.com. Retrieved September 17, 2017, from <http://tech.economictimes.indiatimes.com/news/internet/digital-economy-to-offer-5-7-million-job-opportunities-ravi-shankar-prasad/60706925>
- [5]. Digital India | Welcome.
- [6]. Goriparthi, R. K., & Tiwari, P. (2017). Demonetization in India an Era for Digital Payments. Splint International Journal of Professionals, 4(1), 40.
- [7]. Joshi, M. C. (2017). Digital Payment System: A Feat Forward of India. Research Dimention, October(National Multi Disciplinary Conference on Digital Payment System and Rural India on 7th October 2017 organised by ARB Garud College Shendurni, Maharastra), 1-9. doi: 7th October 2017
- [8]. Kumari, N., & Khanna, J. (2017). Cashless Payment: A Behaviourial Change To Economic Growth. International Journal Of Scientific Research And Education, 5(07).
- [9]. Mishra, N. (2017). READINESS FOR PARADIGM SHIFT. International Journal of Public Finance, Law & Taxation, 2(1), 25-28.
- [10]. Nayak, G. (2017, 2017/07/13/). Digital Payments: Demonetisation has brought nation 3 years ahead in digital payments: SBI Ecoflash - The Economic Times. The. Retrieved from <https://economictimes.indiatimes.com/industry/banking/finance/demonetisation-has-brought-nation-3-years-ahead-in-digital-payments-sbi-ecoflash/articleshow/59580724.cms>
- [11]. Ravi, C. (2017). Digital payments system and rural India: A review of transaction to cashless economy. Variyar, M. (2017). What Budget 2017 did not have for digital payments - ETtech. ETtech.com.
- [12]. Retrieved September 17, 2017, from <http://tech.economictimes.indiatimes.com/news/internet/what-budget-2017-did-not-have-for-digital-payments/56917077>