International Journal of Advanced Science and Research
ISSN: 2455-4227; Impact Factor: RJIF 5.12
Received: 27-10-2020; Accepted: 13-11-2020; Published: 01-12-2020
www.allsciencejournal.com
Volume 5; Issue 5; 2020; Page No. 26-29

An innovative method of on digital payment systems in India

N Jeyakumar[1], S Ravichandran[2]
[1] Guest Faculty, Department of Commerce, MKU Constituent College, Sattur, Tamilnadu, India
[2] Professor, Computer Science Department, Annai Fathima College of Arts and Science, Madurai, Tamilnadu, India

Abstract
Government of India through initiative a Digital India it is a development and growing India economy. The new technological progress has made Smartphone bank apps transactions, device usage and digital users can make money transactions for digital payments by using applications installed in phones. They are overall digitized transactions that are fully challenged and creating opportunities for every person that they are greatest opportunities and challenges are slowly acceptability. Safety and Security is a most concerning issue to people. The implementation taken by RBI is ensuring safety and security in digital payment systems. RBI has taken various initiatives towards regulating banks in creating cyber security and safety. They create awareness and educate people followed by new implementation to realize and utilization the benefits of a digital transaction.

Keywords: RTGS, paper clearing, credit cards, IMPS, EFT/NEFT, NACH, m-wallet, mobile banking and debit cards

Introduction

India has connected other countries in the digital payment revolution, a grouping faster than the past where we often lagged behind in adopting technology, especially in the financial sector. A cashless economy is one in which all the digital transactions are done through E-channels such as Real Time Gross Settlement (RTGS), Paper Clearing, Credit Cards, Immediate Payment Service (IMPS), National Electronic Funds Transfer (EFT/NEFT), National Automated Clearing House (NACH), Mobile Wallet, Mobile Banking and Debit Cards. The connection converts of physical currency transactions to digital transactions. The government has implemented a moving on economic environment by demonetizing the high value currency notes of 500 and 1000 from 8th November 2016 and moving India towards digitalization. Digital payment systems create the opportunity to embed every common person in a system of routine ATMs withdrawals and deposit transactions.

The present study has been conducted based on secondary data relating to RBI Bulletin. The data were collected from the RBI bulletin Payment settlement systems. The writing was gathered from distributed diaries and sites. An examination time of a year from January 2019 to December 2019 has been taken for the period study. The RBI Payment settlement system transactions volume and value have been used to analyze this data. The primary difficulties of the usage of the arrangement is digital misrepresentation, high ignorance individuals, absence of disposition, absence of straightforwardness and effectiveness in computerized installment frameworks.

Related Work

Zahoor Ahmad Shah (2016) [7] has examined the role of digitization in transforming India into a cashless economy and digital payments can be moving on greater economic growth. They focus on growth in international electronic commerce and social activities in the financial inclusion period. At present India characterizes one of the largest market opportunities for digital payments and evolving progress in technology. The access infrastructure available in India to support the digital payment system and analyze the types of digital devices of payment systems available in India. They consider problems and prospects of cashless transactions are challenging in making India a cashless Economy. The government drives digital transactions by demonetization of five hundreds and thousands currency notes and providing new initiatives, immobile majority of transactions are currency based for Indian consumers. Achieving a 100% cashless society is not possible. So, start from a less cash society and then move towards cashless transactions.

Hemanth Kumar, S., Nagendra, B M., & Rajesh M. (2017) [4] said that digital payment is a mode of payment moving on digital transactions. In digital payments are buyer and receiver together using digital transactions through mobile apps or debit or credit card; banks are created overall transactions in digital payments are completed online. The analyzed the facing various risks involved in digital transactions and understood the new implementations undertaken by RBI. Indian governments are implementing a new initiative which is making it competitive to develop an economic is changing Cashless Economy. Under the new initiative of Digital India the country is moving on people transactions for digitalization. The peoples understood and realized the benefit of a cashless economy to accept the concerning issue has been safety and security.

Pushpa S., & Rajeshwari M. (2018) [98] understood that payment system is an important role of motivating the economic and social development of India. The implementation has been created to utilize the internet and mobile phone in India. The awareness uses of internet, mobile access and government initiative such as Digital India are exponential growth in use of digital payment transactions. Consumers are moving on electronic transactions made at point of sale (POS) for services and products also ordered through internet banking, mobile

banking, using smart phone and cards payment are called as digital payment systems. There are various modes of online payments and benefits of assessing the awareness for the implementation of the cashless economy by Indian Government.

Implementation

Digital Payment Systems in India

Banking Cards is a one of the Plastic cards that offers consumers more safety & security, ease, and management than any other payment method. It includes credit, debit and prepaid and gift cards etc. The card accesses PIN and OTP; cards made from RuPay, Visa, MasterCard are enabled for ease of transaction. Unstructured Supplementary Service Data (USSD) is a pioneering payment service *99# works on SMS and dial in mobile phone transactions and no need to have mobile internet data facility for using USSD based mobile banking.

Aadhaar Enabled Payment System (AEPS) is a type of payment system based on UPI; with the help of financial inclusion period transactions at PoS (Point of Sale / Micro ATM). Unified Payments Interface (UPI) is a system that powers multiple bank a/c into a single mobile app, including several banking features, seamless fund circulation & merchant payments into one hood. Every Bank gives its own UPI App for Android, Windows and iOS Smartphone's. Mobile Wallets is a technique to take cash in digital format. That is the same for credit card or debit card information in mobile devices to mobile wallet app using transfer money online to mobile wallets. Utilizing web search engine are Paytm, Freecharge, Mobikwik, Oxigen, mRupee, Airtel Money, Jio Money, SBI Buddy, itz Cash, Citrus Pay, Vodafone M-Pesa, Axis Bank Lime, ICICI Pockets, SpeedPay etc. Banks Prepaid Cards implementing ICICI Bank offer the following Prepaid Cards : PayDirect Card, Pockets, the Digital Bank, Meal Card, Gift Card, Indian Rupee Travel Card, Saral Money Prepaid Card and Reimbursement Card. Point of Sale (POS) transaction is which takes place between a commercial and a customer offering a product or service in purchase commonly using sweeping machines. Internet banking is also known as online banking, electronic banking or virtual banking and electronic payment system to enable the customers offered banks or other financial institutions.

Mobile banking is using Smartphone services provided by a bank or other financial institution following the government norms. Utilizing the monitoring a/c balance, transfer funds between a/c, bills payment etc. Micro ATM is a small version of an ATM to which the POS can connect to the banking network via GPRS for banking transactions and card swipe and fingerprint scanner facilities. The essential transaction types to be maintained by micro ATM, are Deposit, Withdrawal, Fund transfer and Balance enquiry etc.

Table 1: Volume of transactions under Digital Payment Systems (in Million) January 2019 - December 2019

Month / Year	RTGS	Paper Clearing	IMPS	EFT/NEFT	NACH	Credit Cards	m-Wallet	Mobile Banking	Debit Cards
Jan 19	11.78	94.43	171.51	205.13	244.89	160.43	395.83	710.90	1254.01
Feb 19	11.09	86.99	166.37	201.10	265.73	142.13	345.03	739.41	1164.40
Mar 19	13.64	99.76	190.18	242.39	294.47	163.27	384.89	867.41	1298.99
Apr 19	11.48	89.79	185.04	203.44	342.82	167.79	380.62	881.23	1216.48
May 19	12.49	92.11	183.33	217.68	282.48	174.04	367.45	841.74	1223.30
Jun 19	11.83	83.96	171.33	199.14	272.83	163.16	334.70	848.61	1192.64
Jul 19	12.75	93.76	189.28	219.42	279.72	179.27	347.13	911.18	1236.82
Aug 19	11.88	87.82	200.31	221.26	308.01	180.43	349.11	1015.78	1243.63
Sep 19	11.44	82.82	204.16	216.70	288.32	180.20	340.21	1107.64	1208.95
Oct 19	12.89	89.80	236.90	242.40	360.63	203.37	339.33	1252.54	1314.28
Nov 19	13.39	86.61	228.18	219.46	148.24	176.21	335.41	1353.42	633.19
Dec 19	13.60	86.55	256.47	233.69	144.36	203.66	365.16	1432.22	649.13
Mean	12.35	89.53	198.59	218.48	269.38	174.50	357.07	996.84	1136.32
SD	0.89	4.83	28.31	14.98	65.65	17.38	21.06	238.60	234.97
CV	7.22	5.39	14.26	6.86	24.37	9.96	5.90	23.94	20.68
CGR	0.88	1.08	0.69	0.89	1.62	0.81	1.08	0.53	1.82
Rank	9	8	6	5	4	7	3	2	1

It is revealed from table 1 that the twelve months (January-December, 2019) is the difference between Volume of transactions under digital payment system (in million) mean value range is from 12.35 to 1136.32 and it is a good measure of central value because the Std. Deviation (SD) is very low. Volume of transactions under digital payment system RTGS range is from 11.09 to 13.64 (in million), Paper clearing range is from 82.82 to 99.76 (in million), IMPS range is from 166.37 to 256.47 (in million), EFT/NEFT range is from 199.14 to 242.40 (in million), NACH range is from 144.36 to 360.63 (in million), Credit cards range is from 142.13 to 203.66 (in million), m-wallet range is from 334.70 to 395.83 (in million), Mobile banking range is from 710.90 to 1432.22 (in million), and Debit Cards range is from 633,19 to 1298.99. Therefore, Volume of transactions under the digital payment system (million) is different for the analysis results are highly ranked. The first is Debit Cards transactions.

Table 2: Value of Transactions under Digital Payment Systems (₹ in Billion) January 2019 - December 2019

Month / Year	RTGS	Paper Clearing	IMPS	EFT/NEFT	NACH	Credit Cards	m-Wallet	Mobile Banking	Debit Cards
Jan 19	156570.32	6867.63	1522.97	19662.62	1220.26	553.39	158.58	2959.74	3166.92
Feb 19	146468.19	6414.49	1493.43	19214.30	1303.92	488.59	142.79	3047.25	3049.40
Mar 19	190693.10	7658.15	1762.89	25470.01	1635.08	580.49	159.90	4394.51	3420.10
Apr 19	148481.20	7268.12	1691.97	20546.69	1550.43	580.50	159.75	4020.18	3393.55

May 19	158379.63	7170.78	1804.56	21277.74	1744.00	616.76	157.27	4850.08	3523.19
Jun 19	152991.31	6357.98	1730.19	17496.45	1344.84	570.94	154.71	4975.43	3398.27
Jul 19	160041.94	6874.03	1820.21	17842.64	1468.67	600.20	159.49	5631.40	3402.36
Aug 19	148421.38	6370.93	1891.13	17961.53	1506.76	600.11	154.62	3280.43	3455.25
Sep 19	142982.30	5917.54	1837.47	18117.81	1449.58	598.45	146.75	4701.68	3295.05
Oct 19	138614.15	6603.05	2126.60	18607.90	2007.72	715.17	151.09	5327.31	3855.82
Nov 19	86798.06	6448.02	2029.04	17346.51	1626.59	601.30	146.52	4712.95	2842.08
Dec 19	103169.37	6465.83	2109.34	19422.31	1513.34	657.36	158.35	4933.42	2918.66
Mean	144467.58	6701.38	1818.32	19413.88	1530.93	596.94	154.15	4402.87	3310.05
SD	26791.39	483.13	202.17	2264.22	210.45	54.70	5.97	888.58	279.71
CV	18.54	7.21	11.12	11.66	13.75	9.16	3.87	20.18	8.45
CGR	1.46	1.06	0.74	1.01	0.82	0.86	1.00	0.63	1.08
Rank	1	3	6	2	7	8	9	4	5

It is observed from table 2 that the twelve months (January-December, 2019) is the difference between Value of transactions under digital payment system (₹ in Billion) mean value range is from 154.15 to 144467.58 and it is a good measure of central value because the Std. Deviation (SD) is very low. Value of transactions under digital payment system RTGS range is from 86798.06 to 190693.10 (₹ in Billion), Paper clearing range is from 5917.54 to 7658.15 (₹ in Billion), IMPS range is from 1493.43 to 2126.60 (₹ in Billion), EFT/NEFT range is from 17346.51 to 25470.01 (₹ in Billion), NACH range is from 1220.26 to 2007.72 (₹ in Billion), Credit cards range is from 488.59 to 715.17 (₹ in Billion), m-wallet range is from 142.79 to 159.90 (₹ in Billion), Mobile banking range is from 2959.74 to 5631.40 (₹ in Billion), and Debit Cards range is from 2842.08 to 3855.82.

Therefore, Value of transactions under the digital payment system (₹ in Billion) is different for the analysis results are highly ranked.

The first is RTGS transactions.

Table 3: Correlation Coefficient Analysis of Volume the transactions under Digital Payment Systems (in Million) January 2019 - December 2019

Items	RTGS	Paper Clearing	Credit Cards	IMPS	EFT/ NEFT	NACH	m-Wallet	Mobile Banking	Debit Cards
RTGS	1.00								
Paper Clearing	0.39	1.00							
Credit Cards	0.66	-0.24	1.00						
IMPS	0.80	0.37	0.70	1.00					
EFT/NEFT	-0.43	0.22	-0.39	0.01	1.00				
NACH	0.55	-0.17	0.88	0.68	-0.09	1.00			
m-Wallet	0.07	0.70	-0.25	0.03	0.06	-0.22	1.00		
Mobile Banking	0.59	-0.40	0.97	0.58	-0.46	0.82	-0.41	1.00	
Debit Cards	-0.47	0.39	-0.63	-0.10	0.90	-0.31	0.20	-0.71	1.00

It is correlated from table 3 that Correlation Coefficient Analysis of volume the transactions under Digital Payment Systems (in Million) January-December, 2019 analysis of correlation relationship between RTGS to IMPS (0.80) that is a highly positive relationship, between RTGS to Debit Cards (-0.47) that is a very low level negative relationship. In the Paper clearing to m-Wallet (0.70) that is a highly positive relationship; between Paper Clearing to Mobile Banking (-0.40) that is a low level negative relationship. There is a relationship between Credit cards to Mobile Banking (0.97) that is a highly positive relationship, between Credit cards to Debit cards (-0.63) that is a low level negative relationship. It is the relationship between IMPS to NACH (0.68) that is a highly positive relationship, IMPS to Debit cards (-0.10) that is a low level negative relationship. It is the relationship between EFT/NEFT to Debit Cards (0. 90) that is a highly positive relationship, EFT/NEFT to Mobile Banking (-0.46) that is a low level negative relationship. It is NACH to Mobile Banking (0.82) that is a highly positive relationship, NACH to Debit Cards (-0.31) that is a low level negative relationship. It is the relationship between m-Wallet to Debit Cards (0.20) that are a low level positive relationship, m-Wallet to Mobile Banking (-0.41) that is a low level negative relationship. Finally, the relationship between Mobile Banking to Debit Cards (-0.71) is a low level negative relationship.

Table 4: Correlation Coefficient Analysis of Value the Transactions under Digital Payment Systems (₹ Billion) January 2019 - December 2019

Items	RTGS	Paper Clearing	Credit Cards	IMPS	EFT/NEFT	NACH	m-Wallet	Mobile Banking	Debit Cards
RTGS	1.00								
Paper Clearing	0.55	1.00							
Credit Cards	-0.57	-0.23	1.00						
IMPS	0.59	0.82	-0.23	1.00					
EFT/NEFT	-0.10	0.25	0.70	0.20	1.00				
NACH	-0.30	-0.04	0.89	-0.10	0.79	1.00			
m-Wallet	0.43	0.69	-0.01	0.46	0.03	0.21	1.00		
Mobile Banking	-0.16	0.00	0.65	-0.13	0.55	0.66	0.16	1.00	
Debit Cards	0.59	0.28	0.11	0.17	0.56	0.43	0.28	0.28	1.00

It is correlated from table 4 that Correlation Coefficient Analysis of value the transactions under digital payment systems (₹ in Billion) January-December, 2019 analysis of correlation relationship between RTGS to IMPS & Debit Cards (0.59) that is a nearest highly positive relationship, RTGS to Credit Cards (-0.57) that is a low level negative relationship. In the relationship between Paper clearing to IMPS (0.82) that is a highly positive relationship, Paper Clearing to Credit Cards (-0.23) that is a low level negative relationship. Credit cards to NACH (0.89) that is a highly positive relationship, Credit cards to IMPS (-0.23) that is a low level negative relationship. It is IMPS to m-Wallets (0.46) that are a positive relationship, IMPS to Mobile Banking (-0.13) that is a low level negative relationship. It is the relationship between EFT/NEFT to NACH (0.79) that is a highly positive relationship, EFT/NEFT to m-Wallets (0.03) that is a very low level positive relationship. It is the relationship between NACH to Mobile Banking (0.66) that is a highly positive relationship, NACH to m-Wallet (0.43) that is a low level positive relationship. It is the relationship between m-Wallet to Mobile Banking (0.16) that is a low level positive relationship. Finally, between relationships Mobile Banking to Debit Cards (0.28) that is a low level negative relationship.

Table 5: Descriptive Statistics Analysis of (Volume in Million) & (Value ₹ in Billion) Transactions under Digital Payment Systems January 2019 - December 2019

Items	Payment System Volume (in Million)		Payment System Value (₹ in Billion)	
	t-value	p-value	t-value	p-value
RTGS	47.94	0.000	18.68	0.000
Paper Clearing	64.27	0.000	48.05	0.000
Credit Cards	24.30	0.000	31.16	0.000
IMPS	50.52	0.000	29.70	0.000
EFT/NEFT	14.21	0.000	25.20	0.000
NACH	34.78	0.000	37.80	0.000
m-Wallet	58.73	0.000	89.47	0.000
Mobile Banking	14.47	0.000	17.16	0.000
Debit Cards	16.75	0.000	40.99	0.000

It is classified from table 5 that out of volume the transactions under digital payment systems p-value is highly significance level there is less than 5% indicates a 0.05, and value the transactions under digital payment systems ((₹ in Billion) p-value is highly significance level there is less than 5% indicates a 0.05. So, the volume and value of transactions under digital payment systems p-value is 1% level of significance.

Conclusion

The Indian government has made new initiatives and implementations for economic development and one of the initiatives is digital transactions moving on Digital India. It is also imperative that they educate the people or users which will ensure security in digital payment and get wide acceptance. Digital transactions usage awareness has increased practices among the common people in India. The security issues are constricted and issues are reduced and will automatically increase the adoption of Digital transactions. Considering the quantum of opportunity and challenges are practices for digital payments and improved solutions in terms of RTGS, Paper Clearing, Credit Cards, IMPS, EFT/NEFT, NACH, Mobile Wallet, Mobile Banking and Debit Cards digital payments could lead to more developments and supporting in improved conditions of digital payments system processing.

Acknowledgments

The authors are thankful to Bakos, J., & Kemerer, C and Dawson, P for providing the necessary facilities for the preparation of the paper. Also thanks to IJASR Journal staffs to publish this paper.

References

1. Bakos J, Kemerer C. Recent applications of economic-theory in information technology research. Decision Support Systems. 1992; 8(5):365-386.
2. Carter NM. Computerization as a predominant technology: Its influence on the structure of newspaper organizations. Academy Management Journal. 1984; 27(2):247-270.
3. Dawson P, Mc Laughlin I. Computer technology and the redefinition of supervision: A study of the effects of computerization on railway freight supervisions. Journal of Management Studies. 1986; 23:116-132.
4. Hemanth Kumar S, Nagendra BM, Rajesh M. A Study on Secured Cashless Economy in India With Reference to Initiatives taken by Reserve Bank of India (RBI). EPRA International Journal of Economic and Business Review. 2017; 5(9):21-27.
5. Reddy NSN. New Payment Initiatives: Way to Bank's Profitability. Bank Quest - The journal of Indian institute of Banking Finance. 2014; 85(1):25-29.
6. Saba Abid. Electronic Payment System: An Evolution in Indian Banking System. IOSR Journal of Economics and Finance. 2016; 7(2):25-30. DOI: 10.9790/5933-0702032530.
7. Zahoor Ahmad Shah. Digital Payment System: Problems and Prospects. EPRA International Journal of Economic and Business Review. 2016; 5(8):194-201.
8. Pushpa S, Rajeshwari M. The Changing Trends in Payments: An Overview. International Journal of Business and Management Invention. 2018; 7(7):1-5. https://kupdf.net/download/paytm1_5964ad0adc0d60e4762be30e_pdf.
https://www.insightsonindia.com/2019/04/15/unified-payments-interface-upi/