

An Empirical Study of Electronic Payment System after Demonetization in India

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Abstract

An e-payment system is a way of making transactions or paying for goods and services through an electronic medium, without the use of checks or cash. It's also called an electronic payment system or online payment system. The electronic payment system has grown increasingly over the last decades due to the growing spread of internet-based banking and shopping. As the world advances more with technology development, we can see the rise of electronic payment systems and payment processing devices. As this increase, improve and provide ever more secure online payment transactions the percentage of check and cash transactions will decrease. The present study intends to find out the growth rate of various modes of electronic payments after demonetization. The present study is descriptive in nature. The study is based on secondary data that have been collected from the official website of Reserve Bank of India. The data has been collected from Nov 2016 to Feb 2018 i.e. the time period after the demonetization of currency by the Government of India. In the overall conclusion it can be said that the transactions in volume has increased much in case of UPI and USSD.

Key Words: *Electronic Payment System, E-Commerce, Digital Banking, Financial Institutions, Demonetization*

1. Introduction

Electronic Payment is termed as a financial exchange that takes place through online transactions between the buyers and sellers. The content of this exchange is usually some form of digital financial instrument such as encrypted credit card numbers, electronic cheques or digital cash that is backed by a bank or an intermediary or by a legal tender. The various factors that have lead the financial institutions to make use of electronic payments are the decreasing technology

cost, reduced operational and processing cost and increasing online commerce. An e-commerce payment system also known as electronic payment system facilitates the acceptance of electronic payment for online transactions. Also known as a subcomponent of Electronic Data Interchange (EDI), e-commerce payment systems have become increasingly popular due to the widespread use of the internet-based shopping and banking. The growing use of internet-based banking and shopping has seen the growth of various e-commerce payment systems and technology has been developed to increase, improve and provide secure e-payment transactions. Paperless e-commerce payments have revolutionized the payment processing by reducing paper work, transaction costs, and personnel cost. The systems are user-friendly and consume less time than manual processing and help businesses extend their market reach.

One of the most popular payment forms online is credit and debit cards for e-commerce transactions. As of 2008, in North America almost 90 percent of online retail transactions were made with this payment type. It is difficult for an online retailer to operate without supporting credit and debit cards due to their widespread use. Online merchants must comply with stringent rules stipulated by the credit and debit card issuers in accordance with bank and financial regulation in the countries where the debit or credit service conducts business. Besides them, there are also alternative payment methods, such as bank transfers, electronic wallets, smart cards or bitcoin wallet etc.

1.1 Methods of Electronic payment

E-payment methods could be classified into two areas viz., credit payment systems and cash payment systems.

- **Credit Card** — A form of the e-payment system which requires the use of the card issued by a financial institute to the cardholder for making payments online or through an electronic device, without the use of cash.
- **E-wallet** — A form of prepaid account that stores user's financial data, like debit and credit card information to make an online transaction easier.
- **Smart card** — A plastic card with a microprocessor that can be loaded with funds to make transactions; also known as a chip card.
- **Direct debit** — A financial transaction in which the account holder instructs the bank to collect a specific amount of money from his account electronically to pay for goods or services.

- **E-check** — A digital version of an old paper check. It's an electronic transfer of money from a bank account, usually checking account, without the use of the paper check.
- **E-cash** is a form of an electronic payment system, where a certain amount of money is stored on a client's device and made accessible for online transactions.
- **Stored-value card**— A card with a certain amount of money that can be used to perform the transaction in the issuer store. A typical example of stored-value cards are gift cards.
- **Popular Modes of Electronic Payment System**
 - RTGS – Real time gross settlement
 - NEFT – National electronic funds transfer
 - CTS – Cheque truncation system
 - IMPS – Immediate payment service
 - NACH – National automated clearing house
 - UPI - Unified Payments Interface
 - USSD - Unstructured Supplementary Service Data
 - POS – Point of sale
 - PPI – Prepaid payment instrument

1.2 Pros and Cons of Using E Payment System

E-payment systems are made to facilitate the acceptance of electronic payments for making online transactions a great success. We all know that there is growing popularity of online shopping and because of this e-payment systems became a must for online consumers to make shopping and banking more convenient and comfortable. This technology has many advantages like:

- Widespread coverage of more clients from all over the globe which results in increase in sales and other transactions.
- The transactions are made in seconds with a single click, without wasting customers' time. It comes with speed and simplicity and because of this the transactions have become more efficient.
- Customers can pay for the goods and services by using an e-commerce website at anytime and anywhere. They just need an internet connected device for this purpose.
- The transaction cost is very low and it has reduced the technology costs.

- The operative cost for customers is also very low as they can always check their virtual account where they can find the history of the transaction.
- Today it is easy to add payments to a website, so even a non-technical person may implement it in minutes and start processing online payments.
- Payment gateways and payment providers offer highly effective security and anti-fraud tools to make transactions reliable.

2. Objective of the Study

The present study intends to find out the growth rate of various modes of electronic payments after demonetization.

3. Research Methodology

The present study is descriptive in nature. The study is based on secondary data that have been collected from the official website of Reserve Bank of India. The data has been collected from Nov 2016 to Feb 2018 i.e. the time period after the demonetization of currency by the Government of India. The data is related to the various modes of electronic payment system which includes the following parameters.

- RTGS – Real time gross settlement
- NEFT – National electronic funds transfer
- CTS – Cheque truncation system
- IMPS – Immediate payment service
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- UPI - Unified Payments Interface
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The collected data has been analyzed with the help of appropriate statistical tools. Compound Annual Growth Rate has been used to find out the growth of transaction of electronic payments. ANOVA is also used to know the difference between the variables and within the variables.

4. Analysis and Interpretations

In this section the analysis and interpretation of data has been presented.

Table 1 Electronic Payment System (Volume in Million)

Date for the Period	CAGR	Adjusted R Square	Standard Error of Estimate	F Value	Sig
RTGS	2.02%	0.291	0.091	7.149	0.018
NEFT	2.00%	0.090	0.088	2.477	0.138
CTS	0.35%	0.183	0.102	4.360	0.056
IMPS	6.96%	0.859	0.100	92.160	0.000
NACH	1.79%	0.213	0.097	5.050	0.041
UPI	53.11%	0.928	0.480	193.741	0.000
USSD	22.94%	0.073	0.821	2.185	0.162
Debit & Credit Cards at POS	1.24%	-0.014	0.099	0.799	0.387
PPI	4.43%	0.580	0.095	21.710	0.000
Mobile Banking	2.35%	0.607	0.171	24.181	0.000
Total	3.33%	0.593	0.084	22.853	0.000

Table 1 depicts the statistics applied for volume of transactions for electronic payment system during November 2016 to February 2018. First of all the Compound Annual Growth Rate was calculated to see the growth in the volume of electronic payments in banks. The above table clearly shows that the CAGR is more than half i.e. 53.11 percent in case of UPI followed by 22.94 percent in case of USSD which is almost less than the one fourth. It can also be said that these two methods of electronic payments shows the two third growth in comparison to all other methods which means that the people prefer these two methods for making payments electronically. The least used methods are CTS (0.35 percent) followed by Debit & Credit Card at POS 1.24 percent. It is because of the reason that there is a transaction limit as well as the amount of transaction is also limited in both the cases. If the payment is to made by the debit or credit card there is upper limit fixed by the banks. Due to this reason the volume of transactions through these modes is very less. ANOVA is also used to measure the difference between the variables and within the variables. IMPS, UPI, PPI and mobile banking shows the non significant values as the computed value of F-test is more than the table value and in other cases i.e. RTGS, NEFT, CTS, NACH, USSD and Debit & Credit Cards used at POS shows the significant results as the computed value of F-test is less than the table value.

In the overall conclusion it can be said that the transactions in volume has increased much in case of UPI and USSD.

Table 2 Electronic Payment System (Value in Rs. Billion)

Date for the Period	CAGR	Adjusted R Square	Standard Error of Estimate	F Value	Sig
RTGS	1.05%	0.217	0.114	5.165	0.039
NEFT	3.54%	0.526	0.110	17.667	0.001
CTS	1.17%	-0.065	0.085	0.087	0.772
IMPS	6.89%	0.928	0.075	193.568	0.000
NACH	2.28%	0.203	0.135	4.813	0.046
UPI	42.87%	0.823	0.553	70.619	0.000
USSD	27.22%	0.147	0.890	3.586	0.079
Debit & Credit Cards at POS	1.88%	0.284	0.096	6.952	0.020
PPI	7.01%	0.882	0.096	112.725	0.000
Mobile Banking	-1.82%	0.316	0.189	7.926	0.014
Total	1.38%	0.268	0.108	6.488	0.023

Table 2 explains the electronic payment system in terms of value in Indian Rupees. Again the value of transactions through UPI has the maximum compound annual growth rate of 42.87 percent followed by USSD 27.22 percent. The amount of transactions through mobile banking shows the negative growth -1.82 percent followed by RTGS 1.05 percent. RTGS has a compound annual growth rate of 1.05 percent, NEFT 3.54 percent, CTS 1.17 percent, IMPS 6.89 percent, NACH 2.28 percent, Debit & Credit card at POS 1.88 percent and PPI 7.01 percent. The Adjusted R square is negative in case of CTS -0.065 and highest in case of IMPS. The standard error of estimate is lowest in case of IMPS 0.075 and highest in case of UPI 0.553. The F-value in case of RTGS, CTS, NACH, USSD, Debit & credit cards at POS and mobile banking shows the significant results whereas NEFT, IMPS, UPI and PPI shows the non significant results.

5. Conclusion

An analysis of the payment system landscape in India reveals that while the growth of electronic payments including RTGS transactions has been impressive, the benefits of modern electronic payment systems are yet to reach all sections of the society and be accepted across the length and breadth of the country. Current experience and evidence indicates that the penetration and success of modern electronic payment products and services is concentrated to a large extent in the tier-I and tier-II locations of the country and mostly to those citizens who already have access to the formal banking channels. The analysis also pointed out that the existing “fit for current purpose” payment

system infrastructure needs to be transformed into a state of "ready for future challenges" infrastructure. This can be achieved through standardization, interoperability, consolidation, common infrastructure creation and sharing intertwined with innovations in product and delivery channels. To drive this process forward, further capacity building in terms of both systems and human resources in the industry and the Central Bank (i.e. in the Reserve Bank of India) is essential. Special attention is also required to ensure seamless business continuity plans in addition to the need to minimise and limit cyber crimes and security threats. To elaborate, the segment of the population which has missed out the bandwagon of modern electronic payments are the country's unbanked and under-banked people who constitute a significant portion of the population.

References

- Abhijit M. Tadse, H. S. (2017), "A Study on Usage of Paytm", An International Multidisciplinary Journal, 3(2).
- S. Kowsalya, S. K. (2017), "A Study on the Perception of Customers towards E-Commerce and E-Payments in Local Survey", International Journal of Innovative Research in Science, Engineering and Technology, 6(3).
- Sana Khan & Shreya Jain (2018), "A Study on Usage of ePayments for Sustainable Growth of Online Business", IOSR Journal of Business and Management (IOSR-JBM), pp 74-81
- Premchand A., Choudhry A., (2015), "Future of Payments-ePayments", International Journal of Emerging Technology and Advanced Engineering 5, pp 110-115.
- Roy S., Sinha I., (2014), "Determinants of Customers' Acceptance of Electronic Payment System in Indian Banking Sector-A Study", International Journal of Scientific & Engineering Research 5(1), 177-187.
- <https://rbidocs.rbi.org.in/rdocs/PublicationReport/PDFs/VD1215011012F.pdf>