



## Fin-Tech Innovations: A Study of recent developments in E-Payment system in India

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**Abstract:** *Advancement of Payment system in India is absolutely indispensable to eliminate informal economy. Initiatives of Reserve Bank of India with innovative Payment channels are bearing witness of robust growth in their volume and value of transactions. Increased Point of Sale Terminals are indicating that preference of Electronic payments from the Indian consumers.*

**Key words:** *Electronic Payments-Point of Sale –Debit cards-Credit cards-Mobile Banking*

### I Introduction

Informal economy is a major problem of any developing economy where goods and services can be purchased on the side of the road with the cash payments and India is not an exception for the informal trading activities. Indian financial system also suffers from some shortcomings due to diverse demographic, social and cultural factors which handicaps the spread of the e-payments culture even though there are many electronic payment channels and systems developed and positioned.

Fin-tech Innovations are technological innovations in the financial system of economy which facilitates smooth financial transactions. Core element of any financial transaction is smooth and secured Payment system. Reserve Bank of India has taken initiation in the early-nineties for technology-based solutions for the betterment of the payment and settlement system by introducing new payment products.

Electronic Payments or E-Payments facilitates hassle free shopping and secured payment for the consumers .However when the vast majority of the

population does not have direct access to a financial system of any kind is a real challenge.

With the RBI initiation different channel of e-payments are developed with continuous demand from customers as well as technological advancements in Information and communication technologies to make hassle free payments. Widely used channels are

1. Electronic Clearing Service (ECS) Credit
2. Regional ECS (RECS)
3. Electronic Clearing Service (ECS) Debit
4. National Electronic Funds Transfer (NEFT) system.
5. Real Time Gross Settlement (RTGS)System
6. Pre-paid instruments: These are payment instruments that facilitate purchase of goods and services against the value stored on these instruments. The value stored on such instruments represents the

value paid for by the holders by cash, by debit to a bank account, or by credit card. The pre-paid payment instruments can be issued in the form of smart cards, magnetic stripe cards, internet accounts, internet wallets, mobile accounts, mobile wallets, paper vouchers, etc.

7. Credit Cards
8. Debit Cards
9. Mobile Banking System, Mobile phones as a medium for providing banking services
10. ATMs / Point of Sale (POS) Terminals / Online Transactions

## II Objectives of the Study:

Present study concerned with the following objectives

1. To identify the channels of e-payment and their growth in the payment and settlement system in India.
2. To identify the E-Payment mode preferences of Indian consumers in their shopping.
3. To explore the potential opportunities and challenges for the new products in the payment system.

## III Data and Research methodology

Secondary data of payment system indicators from RBI for the last four financial years i.e., 2012-13 to 2015-16 is used in the growth rate calculation of various e-Payment channels. Simple statistical tools are used in identifying the growth rate and averages for comparison of different channels of payment.

## IV Literature Review

The payment and settlement systems in India are governed by the Payment and Settlement Systems Act, (2007). Reserve Bank of India (RBI) can commence or operate a payment system in India unless authorized by RBI. Reserve Bank overpowers payment system operators of pre-paid payment instruments, Automated Teller Machine (ATM) networks, card schemes, cross-border in-bound money transfers, and centralized clearing arrangements.

### Indian and global studies on e-payment system

2009, Singh Sumanjeet have classified electronic payment systems based on what is being transmitted over the network; and analyze the difference of each electronic payment system by evaluating their requirements, characteristics and assess the applicability of each system.

2011, sanjeev kumar gupta in his working paper discussed the importance innovations and identified the role of Information and Communications Technology (ICT) with focus on Mobile Banking and Unique Identification (UID) number.

2011 Michael U. Klein and Colin Mayer designed framework for regulation on mobile banking. Issues related to interface between financial services and communication service providers, mobile banking and interoperability are discussed.

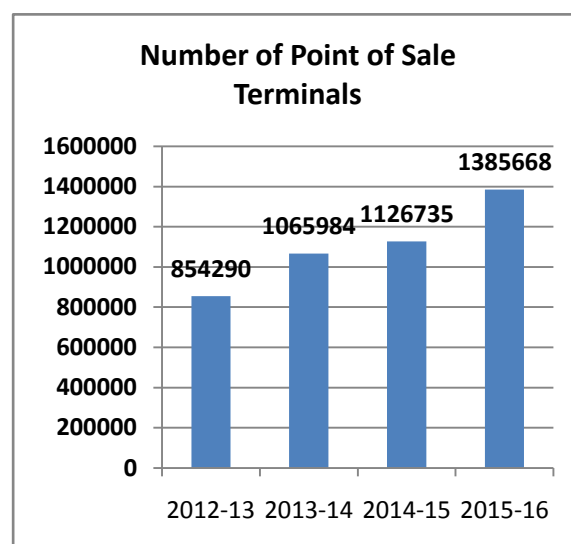
Continuous research is needed to explore the system inefficiencies and for suggestion of suitable models as per the need of economy.

## V Data analysis

Registered Number of point of sale systems were 854290 in the year 2012-13 and these are reached

to highest in year 2015-16 with number of 1385659 systems .These POS are increasing at **17.49 %** CAGR indicating that consumers are demanding for e-payment at brick and mortar shopping. POS card transactions at POS terminals are increasing also indicates that consumer preference of e-payment

**Graph 1: Number of POS Terminals**



Data source: RBI Publications-Bulletin-Payment System indicators (2012-2016)

**Table 1: Instrument wise average transaction value and their growth rate**

| Instrument/Average Per Transaction(Rs) | 2012-13 | 2013-14 | 2014-15 | 2015-16 | Yearly Growth Rate (CAGR) |
|--|---------|---------|---------|---------|---------------------------|
| Credit Card usage at POS               | 3100    | 3025    | 3087    | 3063    | -0.4%                     |
| Debit card Usage at POS                | 1585    | 1542    | 1502    | 1354    | -5.12%                    |
| M-Wallet                               | 306     | 270     | 321     | 341     | 3.68%                     |
| PPI Cards                              | 1470    | 1101    | 1788    | 1769    | 6.37%                     |
| Paper Vouchers                         | 40833   | 44585   | 47709   | 49946   | 6.95%                     |
| Mobile Banking                         | 1124    | 2367    | 6022    | 10375   | 109.77%                   |

Data source: RBI Publications-Bulletin-Payment System indicators (2012-2016)

Credit cards are widely used instruments for payments at Point of Sale terminals as well as on-line shopping. Number of Credit cards increased from 19.5 million in 2012-13 to 24.51 million in 2015-16. The average transaction value is Rs. 3063 in 2015-16. However per transaction value not increased during the study period

Debit cards are instruments are mainly used to withdraw the cash from ATMs and cash is used for making payments at various merchandises. However usage in India is confined to withdrawing cash from ATMs and usage at Point of sale terminals is minimal. The average transaction value for shopping at POS is decreasing at 5.12 % yearly.

Average usage per transaction at ATM is Rs 3011 in 2012-13 and Rs 3043 in 2015-16 at the same time at POS Rs 1585 and Rs 1354 respectively. It indicates that debit card usage decreasing at POS.

Mobile banking system provides for the convenience and ease of use in mobile banking, this channel of payment is gaining momentum. It gained the growth rate of 106% Compounded Annual Growth Rate (CAGR) between the study period of 2012-13 and 2015-16.

Prepaid instruments are increasing rapidly at higher growth rate 123.50% CAGR these transactions were only 67 million in 2012-13 and increased to 748 million transactions with average value of Rs 780 per transaction.

Mobile wallets are also gaining popularity as transactions of 33 millions in 2012-13 are increased to 604 million with CAGR of **163.54 %**.

Mobile wallets score a big hit in 2015-16 as this payment method allowed consumers to make payment online without giving out their banking details every time for transactions. Since it was

smoother, faster and reduced the number of steps from browsing to purchasing, consumers started to use these more frequently.

Data indicates that consumers have shown fast rate of adoption to new product offerings. Decades of usage behavior settled on cash, branch banking and relationship-driven service expectations are being quickly replaced with Electronic cashless transactions and full-suite mobile banking.

Whole payment gateway outlook in India is also changing rapidly. Apart from traditional payment gateways, several options to accept money using mobile wallets are available. Earlier, merchants had to rely on international payment gateways like PayPal to collect payments in different currency but now Indian payment gateways also provide multi-currency options. Payment gateways support almost every bank and payment options. These are used by high volume E-Commerce websites and support multiple currencies. Few popular gateways are 1) CCAvenue 2) Citrus Pay 3) PayUbiz and PayUMoney 4) EBS 5) Instamojo

In 2015, many of wallet services are started and some of mobile wallet service also offers payment gateway services to the merchants. These wallets are integrated as an add-on along with the above mentioned payment gateways. Popular Mobile wallet service operators are 1. Oxigen Wallet. This Mobile Wallet is India's first RBI approved non-bank wallet allowing instant money transfer from the Wallet to majority of banks and vice versa using the Immediate Payment Service (IMPS) and others are PayTM Wallet and MobiKwik.

## VI Suggestions and Conclusion

Innovative E-Payment channels are proving to be the best vehicles to eliminate the cash transactions. Still awareness need to be created among

consumers of semi-urban and rural areas for e-payments along with incentives for using e-payment channels. Cash payments should be restricted by ceiling in withdrawals from Banks and ATMs to minimize the informal trading activities.

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