

NAVIGATING THE CASHLESS REVOLUTION: ASSESSING OBSTACLES AND GOVERNMENT INITIATIVES IN INDIA'S TRANSACTIONAL GROWTH

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INTRODUCTION:

"We want to have one mission and target: Take the nation forward - Digitally and Economically"

The Prime minister of India, Mr. Narendra Modi, once said the above line with the vision to transform India into a digitally empowered nation and to create a cashless and paperless economy. Cashless transactions represent a pivotal aspect of India's financial landscape, offering convenience, security, and efficiency to individuals and businesses alike. Today, India is witnessing a significant shift towards a cashless economy, driven by the rapid evolution of electronic banking (e-banking) technologies and the government's push for digital transactions. According to the report of RBI, the number of digital payment transactions increased at 45% CAGR in past six years.

However, India's journey towards a cashless economy is not without its challenges. Despite significant progress, obstacles such as digital literacy gaps, infrastructure limitations, and cybersecurity concerns persist. These hurdles pose formidable barriers to the seamless adoption of digital payment solutions, particularly in rural and underprivileged communities where access to technology remains limited.

Nevertheless, amidst these challenges lie immense opportunities for India to further accelerate its transition towards a cashless economy. By leveraging its robust digital infrastructure and fostering partnerships between the public and private sectors, India can harness the power of technology to drive inclusive growth and enhance financial accessibility for all segments of society.

India's embrace of cashless transactions has brought about significant benefits to the economy and society at large. By reducing reliance on physical currency, cashless transactions foster greater financial inclusion, enabling individuals from diverse socio-economic backgrounds to participate more actively in the formal economy.

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2.1. LITERATURE REVIEW :

Ahmed & Sur, 2021 analysed the factors affecting MSMEs in adoption of digital banking services. The study was carried out on 148 rural MSMEs, and a survey was conducted using an interview schedule and a structured questionnaire with multi-choice questions on a Likert scale (five points) to gather the primary data for this study. It was found that convenience, perceived self-efficacy, performance expectancy, demonetization and COVID19 pandemic have a significant effect on adoption of digital banking service. Ansari & Khan, 2017 studied the progress and challenges of digital banking in India. The study analysed the average growth rate of ATM, POS, debit card, credit card, NEFT, RTGS, mobile banking in India for the period 2011 to 2016 and found rates of increase in various mode of online transactions. Furthermore, they evaluated the impact of demonetisation on digital banking, highlighted the various initiatives taken by government to increase electronic transactions. And pointed out the obstacles on the path of achieving cashless economy. Hasan et al., 2020 studied the challenges faced by people while transitioning from cash transactions to cashless transactions and analysed the digital banking layouts in rural and urban areas. The sample size for the study was 70 people from Aligarh district and found that 50% of people were not able to do digital transactions, and 61% of people perceived that cashless transactions are not safe. Kaur, 2017 studied the growth of different variables of digital banking in India and provided an overview on evaluation of e-banking over a period of time. Data from 2012 to 2016 were used for the study. Singhraul et al., 2018 compared the status of India with other countries of world in terms of cashless transactions and tried to identify the challenges and opportunities attached with the implementation of cashless policies in India. It was found that India, in comparison to other countries, is significantly behind in terms of digital payment methods. They recommended that government should promote people to move from cash transaction to cashless transactions. Sreenu, 2020 evaluated the short-term and long-term effects of digital banking on economy of India and also studied the satisfaction of using cash payment among customers. Data was collected from RBI, Indian banks, and statistical data warehouse of India for the period 2010 to 2018. To analyse the data Panel unit root test like PP and ADF were used and it was found that digital payment system positively impacts economy of India. P, R. 2019 highlighted the report of RBI on 'payment system indicator' and studied the challenges and issues in digital banking. They concluded that for the bank to remain transparent, it is important to promote digital banking. Digital banking not only add convenience to the customers but also enhances security facilities for them.

3.1. OBJECTIVES, DATA AND METHODOLOGY:

The objectives of the study are as follows:

- F To endeavour to track the progress of various components of e-banking like NEFT, UPI, RTGS. Debit card, credit card, etc., in the terms of volume and value for the period 2017-18 to 2022-23
- F To find out the growth rate of various components of e-banking in FY 2022-23 compared to FY 2017-18.
- F To point out the obstacles before India in making India cashless and highlights the steps taken for the promotion of e-banking.

To analyse the above objective, secondary data is collected from RBI's report named 'Payment system Indicators' for the period FY 2017-18 to 2022-23. Variables used in to study are RTGS, IMPS, NEFT, UPI, AePS, APBS, debit card, credit card, prepaid payment instrument and paper-based payment instrument.

Data description:

RTGS- Real-time gross settlement is a digital fund transfer system where transfer of money takes place from one bank to another on one-to-one basis without any delays. There is no limit on the maximum value of fund transfer, however the minimum value through RTGS should not be less than 2 lakhs. It was first implemented in India in 1985.

IMPS- Immediate payment service (IMPS) is providing 24*7 instant fund transfer from one bank to another through mobile. The Maximum limit on per day transaction is 5 lakhs. It was launched on 22 November 2010 in India.

NEFT- National Electronic Funds Transfer (NEFT) is an electronic fund transfer system started in 2005. In NEFT, funds are transferred in hourly batches, unlike RTGS where transfer takes place in real-time. There is no limit on minimum or maximum fund transfer in NEFT.

UPI- Universal Payment Interface (UPI) is a digital payment which facilitates transfer of money from one account to another using mobile application like Google Pay, PhonePe, etc. Maximum limit on fund transfer is one lakh per day. It was started on 11 April 2016 in India.

AePS- Aadhaar Enabled Payment System (AePS) enables the Aadhaar card holders to transfer funds, make withdrawals, deposit cash, or perform any other bank-related activities using Aadhaar-based unique identification numbers. It was launched in the year 2010.

APBS- Aadhaar Payment Bridge system (APBS) is a unique payment system in which the government uses Aadhaar numbers to electronically transfer subsidies and government

benefits to Aadhaar-enabled bank accounts of beneficiaries.

Prepaid Payment Instrument (PPI)-A payment instrument that facilitates purchase of goods and services as against the value stored on such instrument like online wallet, prepaid smart cards etc.

Paper Based Payment Instrument (PBPI)- Paper based payment instrument include cheques, demand drafts, payment orders, warrants etc.

3.2. METHODOLOGY:

Annual growth rate (AGR%) and compounded annual growth rate (CAGR%) were used to analyse the growth rate of various instrument.

Compounded Annual Growth Rate (CAGR%)- It calculates the average annual growth rate of a variable over a significant period of the time, considering the growth is compounded.

Formula- $CAGR = \left(\frac{EV}{BV} \right)^{1/n} - 1 \times 100$

where:

EV=Ending value

BV=Beginning value

n=Number of years

4.1. GROWTH OF CASHLESS TRANSACTIONS IN INDIA:

The announcement of Demonetization in 2016 boomed e-commerce activity in India. The government took many initiatives like UPI, BHIM App and RuPay credit card etc to promote cashless transactions in India. From November 2016 to May 2017, Unified Payments Interface (UPI) transactions increased at the highest CAGR of 60.80 percent (Ansari & Khan, 2017). Additionally, the pandemic-induced lockdowns further accelerated the growth of digital transactions in India. According to the report of RBI's Payment System Indicator report, the total volume of digital payment transactions increased from 2,071 crore in FY 2017-18 to 13,462 crore in FY 2022-23.

The table 1 illustrates the number of digital payment transactions that took place in India in terms of volume (crore) from FY 2017-18 to 2022-23. It is evident from the table that digital payment transactions increased at compounded annual growth rate (CAGR) of 45% in six years. The highest average annual growth rate of digital payment transactions in volume was observed in the year 2021-22, reaching 59%.

Table 1: Number of Digital payment transactions in India in volume

FINANCIAL YEAR	VOLUME (IN CRORE)	AGR%
2017-18	2071	-
2018-19	3134	51%
2019-20	4572	46%
2020-21	5554	21%
2021-22	8839	59%
2022-23	13462	52%
CAGR	45%	-

4.2. RTGS, IMPS, NEFT, UPI, AePS AND APBS:

Payment Instruments which facilitate seamless cashless transaction includes Real-Time Gross Settlement (RTGS), Immediate payment service (IMPS), National Electronic Funds Transfer (NEFT), Unified Payment Interface (UPI), Aadhaar Enabled Payment System (AePS) and Aadhaar Payment Bridge system (APBS).

Table 2 illustrates the statistics relating to the number of e-transactions conducted by Indian customers using various payment instruments. The number of digital transactions through RTGS increased at the a CAGR of 14%, whereas IPMS increased at the compounded annual growth rate of 41% between FY 2017-18 to 2022-23. It is evident from the table that in FY 2018-19, average growth rate of IMPS was highest, i.e. 74%. The CAGR of NEFT from FY 2017-18 to 2022-23 was 22%, while UPI demonstrated highest growth in compounded annual growth rate at 147%. Notably, the most substantial surge in UPI transactions occurred in FY 2018-19, with an impressive average growth rate of 489%. This significant increase in UPI transactions was the result of collaborative efforts by the government and its stakeholders. Conversely, the number of transactions via Aadhaar Enabled Payment System (AePS) and Aadhaar Payment Bridge system (APBS) showed only 0% and 7% Compounded annual growth rate respectively.

YEAR	RTGS	AGR%	IMPS	AGR%	NEFT	AGR%	UPI	AGR%	AePS	AGR%	APBS	AGR%
2017-18	1244	-	10098	-	19464	-	9152	-	6	-	12980	-
2018-19	1366	10%	17529	74%	23189	19%	53915	489%	11	83%	15032	16%
2019-20	1507	10%	25792	47%	27445	18%	125186	132%	10	-9%	16805	12%
2020-21	1591.92	6%	32783.47	27%	30927.89	13%	223306.6	78%	11.31	13%	14372.99	-14%
2021-22	2078.39	31%	46625.25	42%	40407.29	31%	459561.3	106%	9.76	-14%	12573.33	-13%
2022-23	2425.62	17%	56532.64	21%	52847.43	31%	837143.7	82%	5.9	-40%	17833.95	42%
CAGR	14%		41%		22%		147%		0%		7%	

Table 2: Number of transactions through RTGS, IMPS, NEFT, UPI, AePS and APBS in India in volume(lakhs)

Table 3: demonstrates the value of transactions took place via debit card, credit card, PPI and APBS. It was found that payment done through UPI increased at highest Compounded annual growth rate of 163%, and the average growth rate of UPI in FY 2018-19 was 698%.

YEAR	RTGS	AGR%	IMPS	AGR%	NEFT	AGR%	UPI	AGR%	AePS	AGR%	APBS	AGR%
2017-18	116712478		892497		17222852		109832		300		55948	
2018-19	135688187	16%	1590257	78%	22793608	32%	876971	698%	501	67%	86226	54%
2019-20	131156475	-3%	2337541	47%	22945580	1%	2131730	143%	469	-6%	99048	15%
2020-21	105599849	-19%	2941500	26%	25130910	10%	4103658	93%	623	33%	111001	12%
2021-22	128657516	22%	4171037	42%	28725463	14%	8415900	105%	575	-8%	133345	20%
2022-23	149946286	17%	5585441	34%	33719541	17%	13914932	65%	356	-38%	247535	86%
CAGR	5%		44%		14%		163%		3%		35%	

Table 3: Transactions through Debit card, Credit card, PPI and PBI in India in Value in crore

4.3. DEBIT CARD, CREDIT CARD, PREPAID PAYMENT INSTRUMENT AND PAPER BASED PAYMENT INSTRUMENTS:

Table 4 depict the number of transactions carried out through different payment methods such as debit card, credit card, prepaid payment instruments (PPI) and paper-based payment instruments (PBPI). It is evident from the table that number of transactions over six years (i.e. from FY 2017-18 to 2022-23) via debit card remained constant with a compounded annual growth rate (CAGR) of 0% while transactions using credit card increased at compounded annual growth rate of 16%. Meanwhile volume of transactions via prepaid

payment instrument (PPI) like online wallet, prepaid smart cards etc increased at CAGR of 17%. On the other hand, the volume of transactions through paper-based payment instruments (PBPI) like cheques, demand drafts etc., depict a decline with a negative CAGR of -10%.

YEAR	DEBIT CARD	AGR%	CREDIT CARD	AGR%	PPI	AGR%	PBPI	AGR%
2017-18	33434		14052		34591		11713	
2018-19	44143	32%	17626	25%	46072	33%	11238	
2019-20	51239	16%	21773	24%	53318	16%	10414	-7%
2020-21	40145.54	-22%	17641.06	-19%	49742.55	-7%	6703.7	-36%
2021-22	39384.11	-2%	22398.82	27%	65782.75	32%	6999.12	4%
2022-23	34179.48	-13%	29145.24	30%	74667.44	14%	7109.28	2%
CAGR	0%		16%		17%		-10%	

Table 4: Number of transactions through Debit card, Credit card, PPI and PBI in India in Volume (lakhs)

Table 5 illustrates the value of transactions took place via debit card, credit card, prepaid payment instruments (PPI) and paper-based payment instrument (PBI). It was found that value to transactions via credit card increased at CAGR of 26% which is much high as compared to debit card.

YEAR	DEBIT CARD	AGR%	CREDIT CARD	AGR%	PPI	AGR%	PBPI	AGR%
2017-18	460070		458965		141634		8193493	
2018-19	593475	29%	603413	31%	213323	51%	8246065	1%
2019-20	703920	19%	730894	21%	214860	1%	7824822	-5%
2020-21	661385	-6%	630414	-14%	197696	-8%	5627189	-28%
2021-22	730213	10%	971638	54%	279416	41%	6650333	18%
2022-23	719989	-1%	1432255	47%	287111	3%	7172904	8%
CAGR	9%		26%		15%		-3%	

Table 5: Number of transactions through Debit card, Credit card, PPI and PBI in India in Value in crore

5.1. OBSTACLES IN THE ADOPTION OF E-BANKING:

Following are the challenges before customers and government in adoption of e-banking:

- F Digital Literacy- significant population of people especially in rural areas are not familiar with the digital technologies and online banking method. To overcome this RBI and government is running 'Har payment Digital mission', organising digital payment

awareness campaign etc.

- F Security Risk- security concerns are one of the major challenges faced by banks in offering e-banking facilities. People also hesitate in using e-banking facilities due to security concern like fraud, theft, phishing, cyberattack etc.
- F Technical difficulties- digital banking heavily relies on technology, any technical malfunction can disrupt the banking process. Problems like card blocking, password retrieval problems, banking websites experiencing downtime, system congestion leading to slow performance etc are some of the technical hurdles that customers may experience while using internet banking.
- F Infrastructure challenge- slow speed internet, network failure, lack of smart phone etc hinder access to digital banking services.
- F Language and Accessibility: many banking platforms primarily operate in English or Hindi, which can be a barrier for non-English or non-Hindi speaker. Moreover, accessibility features for individuals with disabilities may be lacking in some e-banking interfaces.

5.2. INITIATIVES TAKEN FOR THE PROMOTION OF E-BANKING:

For the promotion of digital banking in India many initiatives have been taken by RBI and government of India. Some of them are:

- F Information Technology act,2000 (IT act 2000)- The aim of this act is to prevent cyber-crime, provide legal recognition to E-commerce and electronic transactions.
- F National Payment Corporation of India (NPCI)- It is an umbrella organisation which operates retail payments and settlement system in India. It was setup in year 2008 with the support of RBI and Indian Banks Association (IBA). The core objectives NPCI is to foster secure, efficient, and inclusive payment systems across the country.NPCI has spearheaded several groundbreaking initiatives and platforms that have revolutionized digital payments in India, some of them are- unified payment system of India (UPI), Immediate Payment Service system (IMPS), Rupay, Aadhaar Enabled Payment System (AePS), Bharat Interface for Money App (BHIM)etc.
- F Damodaran committee (2011)- Acting upon the suggestions of Damodaran committee like zero liability of customer on loss of ATM card or online transactions, to ensure secured and protected internet banking etc.
- F Digital India campaign- launched on 1st July, 2015 with aim of providing digital infrastructure like high-speed internet, mobile phone, cyber security to every citizen. Providing governance and services like availability of cloud space, improving ease of

doing business by digitally transforming government services and digitally empowering citizen.

- F Pradhan Mantri Jan Dhan Yojana (2015)-Also known as National mission of financial inclusion, the aim of this yojana was to ensure access of poorest of the poor people with financial services like opening of Aadhaar linked bank account, issuing rupay debit card, Expansion of Direct Benefit Transfer under various government schemes through bank accounts of the beneficiaries etc. The initiative has helped in increasing the penetration of digital banking services across the country.
- F Cyber Swachhta Kendra (Botnet Cleaning and Malware Analysis Centre)- it is an initiative taken by Indian government to promote secure cyber ecosystem by providing tools and services to detect and clean malware infections in computers and mobile devices. It offers free antivirus tools, botnet cleaning and malware analysis, and cybersecurity awareness programs to users and organizations.
- F Har Payment Digital mission- on 6 march, 2023 RBI governor Shaktikanta Das launched this mission with the theme "Digital Payment Apnao; Auron Ko Bhi Sikhao", amid Digital Payments Awareness week 2023 (DPAW). Under this mission 75 villages will be adopted and converted into digital payment enabled villages.
- F Apart from above, RBI will conduct 360-degree multimedia channel/platform based public awareness campaign under the tag of 'RBI Says' or 'RBI Kehta Hai' to create awareness among members of public about various digital payment initiatives that cover customer's safety, security and convenience.

6.1. CONCLUSION:

The present paper examined the growth of cashless transaction in India and analysed the growth of various component of e-banking like RTGS, IMPS, NEFT, UPI, AePS, APBS, debit card, credit card, PPI and PBPI from the FY 2017-18 to the FY 2022-23 using AGR% and CAGR% method. The findings revealed that there is significant increase in digital payment transactions in India, with a CAGR of 45% over six years, reaching 13,462 crore transactions in FY 2022-23. UPI emerged as a standout performer with a CAGR of 147%, reflecting its growing popularity and adoption. However, challenges such as digital literacy, security risks, technical difficulties, infrastructure constraints, and language accessibility barriers persist in the adoption of e-banking. In spite of that, coordinate efforts of government and all its stakeholders like regulatory bodies, financial institutions, and technology providers accelerated India's cashless revolution, fostering financial inclusion and economic growth across the country.

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