



GROWTH OF DIGITAL PAYMENT APPS IN INDIA-A STUDY

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Article DOI: <https://doi.org/10.36713/epra12013>

DOI No: 10.36713/epra12013

ABSTRACT

The world has been shifting toward all things digital for a very long time. But the year 2020 made clear how critical it is to quickly adopt new technology. This modification took place fairly immediately after the lockdown was put into place, especially in India for digital payments. Since demonetization in 2016 the Indian government has aggressively promoted and spread online payments. The myriad economic and financial considerations that compelled Indians to change online payments were all motivated by the idea of "Digital India." Making sure there is financial equality becomes a matter of the utmost significance in a country like India where differences might occasionally be different.

KEY WORDS: Digital, Payment, Technology, Government and India

1. INTRODUCTION

The use of cutting-edge technology for customising solutions, such as artificial intelligence (AI), machine learning (ML), and big data, has expanded in the Indian fintech business. The use of digital payments has risen in India as a result of demonetization and COVID-19. As of March 2020, India has more than 50 crore smart phone users and about 100 crore active mobile connections, which is one of the main reasons why digital payment systems have exploded there. In addition to being safer than a cash transaction, becoming cashless also takes less time. Additionally, it aids in keeping track of all completed transactions. These applications are being used by a growing number of people every day. Many people Are Drawn To These Apps By Their Wallet Functionality.

2. REVIEW OF LITERATURE

Anuja Erandekar et al (2020) Within the previous two decades, the banking industry has undergone a transformation. With the emergence of digital channels, branch operations have undergone a radical transformation. Banks currently provide a variety of services in addition to lending money and taking deposits. With the advent of mobile and internet banking, the nature of the services offered by banks has completely altered. The present generation makes every effort to avoid visiting the actual bank branches as much as possible because time and location are no longer restrictions for accessing the bank's services.

Papadopoulos (2007) It is generally acknowledged that new technologies in electronic money (e-money) offer creative solutions, boost convenience, and save costs, while in retail payments, they raise the prospect of a society with no need for cash. Cash is still the cheapest and most anonymous option for small-value transactions, despite the fact that it has a long history of importance.

Pushpa Bhatt (2019) has evaluated the market for digital payments and its many divisions. In order to provide light on potential business prospects for service providers, behavioural elements of these groups are investigated. The digital payment industry in India has been reviewed by **Hyma Goparaju (2020)**, who referred to it as a sunrise industry because technological advancements in mobile devices and financial applications (apps) would drive the adoption of digital payments. The Porter's Five Forces Analysis of the Indian digital payment industry was also examined. Smartphone use, developed financial infrastructure, and consumer interest in payment innovation are the main factors pushing digital payments through mobile applications.

Sanghita Roy et al (2014) noted that although India's e-payment system has experienced significant progress, there is still more that needs to be done to enhance utilisation. Still, cash is used in 90% of transactions. Technology Acceptance Model was employed for the investigation. They observed that the four variables that help to enhance the electronic payment system are innovation, incentive, consumer convenience, and legal framework.

Rakesh H M (2014) They attempted to investigate the variables that affect consumers' acceptance of online banking in their study paper, "A Study on Factors Influencing Consumer Adoption of Internet Banking in India." Baghla, Ashish (2018) After demonetization was announced on November 8, 2016, the Indian government promoted digital payments. The primary goal of the Digital Payments project was to eventually develop a cashless society. It was getting more challenging to obtain the statement of transactions and transfers made by persons to other parties due to the rising corruption and black money in India. The government started the "Digital India" programme to promote governance and boost operational transparency.



Dr. Kota Sreenivasan Murthy (2019) He said that digital payments in India's digital banking system bring about improvements in transparency, scalability, and accountability. In order to create a "cashless" society, RBI is promoting these innovative payment and settlement methods.

Ridam Verma et al (2019) have investigated how Demonetization would affect digital payments. They have discovered a few characteristics of digital payments and are using a multi regression model to analyse how these characteristics affect user preference. Pre and post digitization effects on cash and non-cash transactions has been done by **Aniruddha Ghosh and Ashish Srivastav (2019)**.

B. Angamuthu (2020) Digital payment systems provide convenience, transactional simplicity, and security. This analytical research focuses on the rise of digital payments from 2012–2013 to 2018–2019 in terms of transaction volume and value. According to this survey, overall digital payments have increased in volume (24.11%) and value (15.84%) during the past seven years throughout the nation. Furthermore, in 2020–2021, the nation is predicted to generate 28,000 lakh transactions worth more than INR 15,20,000 billion in digital transactions.

2.1. Research Gap-

Given that this is a rapidly evolving industry, we require the most recent information in order to identify the holes in the payments system. No field research has been done, and there are no consumer testimonials or comments available. As a result, this study aims to fill all of the gaps identified, and research objectives can be defined.

1. Research Objectives:

- To research the Indian digital payment system's operation and evaluate the country's payment system advancements.
- To grasp the many opportunities and their effects on payment applications during COVID-19 and Demonetization.
- To get knowledge on customer preferences and interactions with the available digital payment options.
- To have some concept of how digital payments are projected to develop in India.

3. RESEARCH METHODOLOGY

3.1 Research Design

Most of the analyses in the study is descriptive. The target population's pattern of use of digital and monetary items will be shown through descriptive statistics and data frequency. Other metrics, such as percentage analysis, will be used to characterize the variances in the data before and after the COVID-19 and demonetization growth periods. The methods used include surveys to characterize the current situation, correlation studies to look into the link between variables, and developmental studies to track changes through time. There are three primary categories of descriptive methods: observational, case-study, and survey. In order to determine the growth of digital payment applications in India, a survey approach, or questionnaire method, has been employed in this research study.

3.2 Data & Data Collection

Our target demographic ranges from 15 to 55 years old. The target audiences come from a range of age groups, familial situations, and work environments. The study limitations must be understood, as must the target lifestyle, behaviour, habits, etc., in order to obtain reliable data.

Due to time and resource limitations, 81 people from the entire population will be included in the sample size for the survey. Quota sampling will be used as the sampling technique for this study, and SPSS will be used to analyse the data.

Personal interactions and survey data were used as the major data sources (Google survey form).

For the Secondary data is obtained from different sources:

- Journals (such as EBSCO, Netscribes publications, SAGE Journals, International journal of Research, Google Scholar, PWC report, S&P Journals (such as EBSCO, Netscribes publications, SAGE Journals, International journal of Research, Google Scholar, PWC report, S&P Global)
- Books (such as Payment and settlement systems India (Journey in the second decade of the millennium, DIGITAL PAYMENTS -Trends, Issues and Opportunities)
- Newspaper Articles (such as Entrepreneur.com, Mint.com, and Quint) Websites (Wikipedia, Google, Quora).

4. DATA ANALYSIS & INTERPRETATION

4.1 DATA ANALYSIS

A poll was conducted, and participants answered questions on how they see the electronic payment system. The majority of the questionnaire's questions were influenced by earlier studies. However, a number of questions were independently created specifically for this study in order to address significant ideas that were not covered in earlier research. Some comments were rated on a five-point Likert scale, from fully agree (1) to utterly disagree (5). The survey also asks about sociodemographic information (gender, age), prior usage of financial services, and the use of digital payment applications for transactions.

The samples may reflect the entire population because they were chosen at random. Studying the significance of electronic payment methods in comparison to other channels is crucial, as is identifying any issues and coming up with suggestions that will help the channels get better. To improve the respondents' variety, the quantity of returned surveys, and the geographic accessibility of the survey, it was conducted both in-person and electronically. 200 questionnaires were sent out to respondents to gauge their thoughts on the expansion of the payment system. 100 of them were returned because the form wasn't



available or accessible.

4.2 DATA INTREPRETATION

OBJECTIVE (2)- To grasp the many opportunities and their effects on payment applications during COVID-19 and Demonetization

- **OBJECTIVE (3)-** To get knowledge on customer preferences and interactions with the available digital payment options.

According to the results from the data collected through questionnaire method(primary source) we can analyze that-

TABLE-1-Target population's Age group

	Frequency	Percentage
15-25	39	48%
25-35	19	24%
35-45	11	14%
45-55	12	14%
Total	81	100%

INTERPRETATION- According to the survey result, we can see that, of the target audience, the bulk of respondents were from urban regions and were between the ages of 15 and 25. Out of 81, 54% were the most frequent users of digital payment portals, followed by 24% of those between 25 and 35.

TABLE-2-Gender

	Frequency	Percentage
Female	32	40%
Male	49	60%
Total	81	100.0%

INTERPRETATION- According to Table 2 above, of the total respondents, 40% are women, showing that the gender gap in digital literacy is larger for men than for women.

TABLE-3-Place of residence

	Frequency	Percentage
Metropolitan: 10 lakh and above	21	26%
Rural: population less than 10,000	4	5%
Semi-Urban: 10,000 and above and less than 1 lakh	13	16%
Urban: 1 lakh and above and less than 10 lakhs	43	53%
Total	81	100.0%

INTERPRETATION- Here, the respondents from rural regions are the least likely to utilise digital portals (using just 5% of them), whereas respondents from urban areas are more likely to do so (53%).

TABLE-4

How often do you use mobile payment methods? Analysis by AgeGroup

		Payment Methods			Total	%
		Never	Occasionally	Regular		
Age Group	15-25	0	5	34	39	48%
	25-35	0	4	15	19	24%
	35-45	0	3	8	11	14%
	45-55	3	4	5	12	14%
Total		3	16	62	81	100%
Percentage		4%	20%	76%	100%	

INTERPRETATION- The age range 15–25 is the most active presence in the above table, followed by the group 25–35 by 24%, demonstrating their support for the change in the payment system.

People in the age range of 45 to 55 are still cautious to use payment applications, which suggests that the expansion of digitalization is being driven by this demographic.

TABLE- 5
How often do you use mobile payment methods? - Analysis by location

		Payment Methods			Total	%
		Never	Occasionally	Regular		
Place of Residence	Metropolitan: 10 lakh and above	0	4	18	22	26%
	Rural: population less than 10,000	1	4	2	7	8%
	Semi-Urban: 10,000 and above and less than 1 lakh	0	3	9	12	17%
	Urban: 1 lakh and above and less than 10 lakhs	2	4	34	40	49%
Total		3	15	63	81	100%
Percentage		4%	19%	77%	100%	

INTERPRETATION- According to the study data, urban dwellers contribute the most to the digitalization process by 49%. We can also see that in urban locations, where 22 out of the residents are prone to use online payment methods, On the other hand, rural areas with slow growth have the fewest consumers.

TABLE- 6
How often do you use mobile payment methods? By Gender

		How often do you use mobile payment methods?			Total	%
		Never	Occasionally	Regular		
Gender	Female	1	5	26	32	40%
	Male	2	10	37	49	60%
Total		2	15	70	81	100%

INTERPRETATION- In terms of overall percentage, less use by female respondents than by male respondents might be attributed to a lack of interest or alternatives. When it comes to frequent usage, males and females are 75% identical in type.

TABLE -7
Transfer money among friends, family or others using the payment apps by Age Group analysis

		Do you transfer money among friends, family or others using the payment apps		Total
		No	Yes	
Age Group	15-25	4	35	39
	25-35	3	16	19
	35-45	2	9	11
	45-55	4	4	12
Total		14	67	81
Percentage		17%	83%	100%

INTERPRETATION- According to Table 7, almost 83% of respondents often send money to their family or other people using various payment applications. If there is a difference by age factor, people in the 45–55 age range are attempting to adapt new ways as about 50% of them are still not comfortable using applications.

TABLE- 8
Preferred payment app for transfer of money? Analysis by Age

		Preferred payment app for transfer of money					Total
		AmazonPay	BHIM	GooglePay	Paytm	PhonePe	
Age Group	15-25	1	2	22	4	10	39
	25-35	2	4	5	2	6	19
	35-45	0	2	3	1	5	11
	45-55	1	2	4	2	3	12
Total		4	10	34	9	24	81
Percentage		5%	12%	42%	11%	30%	100%



INTERPRETATION- According to the Table above, Google Pay is the most popular app among the target audience for transferring money, with 42% of the vote, followed by Phone Pe (30%) and BHIM (12%). However, the majority of users (those between the ages of 15 and 25) prefer Google pay the most. Some of the responders aged 35 to 45 use both Google Pay and Phone Pe.

TABLE -9

		Preferred payment app for bills and utilities					TOTAL
		Amazon Pay	BHIM	GooglePay	Paytm	PhonePe	
Age Group	15-25	2	3	17	4	13	39
	25-35	0	3	6	3	7	19
	35-45	1	2	4	1	3	11
	45-55	1	3	3	3	2	12
Total		4	11	30	11	25	81
%		5%	13%	37%	14%	31%	100%

INTERPRETATION- According to the above table, 37% of the target demographic consider Google Pay as their top app for paying bills and utilities, while 5% of them regard Amazon Pay as their least favourite app. However, the majority of customers, who are between the ages of 15 and 25, favour both Phone Pay and Google pay. The Old users (45–55 years old) like the BHIM app for transactions.

OBJECTIVE 4- To understand various opportunities and its impact on payment apps during Demonetization and COVID-19.

TABLE -10

Do you support digitization of payment apps?

	Frequency	Percent
No	5	6.2
Yes	76	93.8
Total	81	100.0

INTERPRETATION- Table 10 shows that 93.8% of the target demographic in India supports the digitalization of payment applications, while just 6.2% are opposed to it.

TABLEE-11

Integration of payment services in popular non-banking mobile applications such as WhatsApp, Apple Pay, Amazon Pay and Ola Money is one of the driving forces in growth of e-payments.

	FREQUENCY	PERCENT
Highly Agree	35	43.3%
Agree	23	28.3%
Neutral	9	11.2%
Disagree	7	8.6%
Highly Disagree	7	8.6%
TOTAL	81	100%

INTERPRETATION- According to data from the Likert scale, which was used to gauge responses, the majority of respondents (43.3%) and 28.3%, respectively, highly agree that the integration of payment services in well-known non-banking mobile applications is the key factor driving the expansion of e-payments.

TABLE -12

Did you use online payment apps in lockdown?

	Frequency	Percentage
Online Payments	78	96.3%
Other paymentoptions	3	3.7%

INTERPRETATION- Table-12 indicates that around 96.3% of the respondents began using online payment apps during the lockdown. As seen in the tables above, India observed a growth in the adoption of e-payment apps like PhonePe, Amazon Pay, and BHIM.



TABLE-13
What nudges you to make an online payment through an app?

	Frequency	Percent
Cashback and Offer	29	35.8%
Ease of payment, History, Lack of change	2	2.4%
Lack of cash	27	33.3%
Lack of change	13	16.04%
Nothing	2	2.4%
Shopkeeper insists to pay through app	8	9.8%
Total	81	100.0%

INTERPRETATION- We can see that Table-13 lists a number of factors, including cashback offers, which account for 35.8% of the reasons why customers choose online payment methods over physical ones.

Due to a paucity of change and currency during demonetization and COVID-19, consumers began to move to online platforms for a better, more hassle-free experience.

TABLE –14
Preference and perception on cash and digital payment systems[Privacy/Security]

	Frequency	Percent
Safe & Security	5	6.17%
Privacy	29	35.80%
Convenience	47	58.02%
Total	81	100.0%

INTERPRETATION- Table 14 shows the different preferences that target users have developed as a result of using mobile payment apps.

Payment apps are listed as having the lowest security ratings out of all payment methods, while being extremely handy (58.02%).

5. FINDINGS, LIMITATIONS AND DIRECTIONS FOR FUTURE RESEARCH

Findings from the primary research study: The lengthy research investigation yielded the following key conclusions:

- 1) The integration of payment services into popular non-banking mobile applications like PhonePe, WhatsApp, Google Pay, Amazon Pay, and BHIM is one of the causes fueling the expansion of e-payments.
- 2) The introduction of COVID-19 and demonetization has promoted the growth of digital payment services.
- 3) According to the respondents, the three most popular payment options for this age group are PhonePe, Google Pay, and BHIM.
- 4) The survey also points to a lack of knowledge on the expansion of payment apps, a lack of data security, a problem with client trust, or digital crimes.

The following are the findings from the secondary research study for objective (1) & (4):

1. The barter system was the first known Payment and Settlement System (PSS). As time went on, people began to pay their economic transactions using coins and currency notes. Payment services like Apple pay, PayPal, and Phone pay were widely utilized, as were third-party wallets.
2. Global trends point to heightened client demands for value-added services, increasing competition brought on by FinTech's rise, new technology, and a revolutionary payment situation.
3. According to the report, India's whole digital payment sector would reach \$1 trillion by FY23E, spurred by an increase in mobile payments. Mobile payments are predicted to increase from US\$10 billion in FY18E to US\$190 billion in FY23E. India's digital payments are anticipated to increase by more than three times to Rs 7,092 lakh crore by 2025. Government policies around financial inclusion.
4. **FUTURE POTENTIAL-** It is apparent that a new, digital India is taking shape, and that in the future, the country's payment system will undergo a number of significant developments. India seems to require some time to make the switch to a cashless society. Priorities should be given to education and computer literacy issues. Additionally, cashback promotions are currently effective, but to increase digital transactions in India and achieve transaction transparency, the eradication of black money, and long-term economic development through a cashless society, it will take a dedicated, secure, and highly reliable payments network. By doing this, we can ensure that digital payments in India have a bright future.



5.1 Limitations and Recommendation for future research:

The aforementioned study has the following limitations as well. Since the information used to determine customer preferences came from a self-report survey that drew responses from people of various backgrounds, there is a chance that the data was biased toward responses that were socially acceptable. Second, the study's length was quite brief. Therefore, if we can research over a longer time horizon, the outcomes may change.

Other researchers may use this study as a springboard to investigate additional independent factors and latent variables that may have an impact on the demand for digital payment systems. As a result, it provides room for more statistical analysis and some recommendations for the government authorities to run training programmes to teach everyone how to utilise digital payments.

5.2 Conclusion

We may deduce from a thorough research study that India has given the 2010–20 decade the moniker "decade of payments." Payment methods are rapidly developing and changing all the time. It is important to stay up with any changes or advancements made to the payment procedure. According to our research, payments have also grown much more fast, widespread, and convenient as a result of the high demand for digitalized payment methods, and this trend is only expected to intensify as technology develops.

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