

# Unified Payment Interface: A Digital Gateway to Indian Payment System

(Special references to Bhim UPI, Google Pay, Rozarpay, Phonepe)

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## ABSTRACT

Period of demonetization was a crucial time for Indian financial system. Demonetization raises the requirement of cashless currency in economy. At that period, government promoted cashless currency which means digital payment system must be used instead of currency notes. As we know that on 8<sup>th</sup> November 2016 Honorable Prime minister of India Mr. Narendra Modi announced the demonetization in India. In which all currency notes of 500 and 1000 were demonetized. As a result cashless currency was needed urgently. No doubt people are using debit cards, credit cards but due to demonetization, Long queues started forming outside banks and ATMs. In that situation UPI played pivotal role in making payments, money transfer, helpful in reducing rush outside the ATMs and banks without going anywhere. This paper mainly emphasizes on Unified payment interface popularly known as UPI. After 2016 which is popularly known as Demonetization year which has great impact on transactions of UPI. The main of this paper is that to know the impact of UPI on payment behaviour of consumers. So data is collected from the respondents of Bathinda region (A renowned city in Punjab).

Keywords: Demonetization, cashless currency, security, digital payment, consumer.

## 1. INTRODUCTION

Present Indian financial system is forward looking where digital payment system is taking the place of manual payment system. UPI is commonly used digital payment system. Unified payment system is full name of UPI. UPI is

a unique identity of every user which is used to make payments and to send or receive money via mobile phones having internet connectivity. In India UPI was introduced by National Payment Corporation of India popularly known as NPCI.

## **1.1. CONCEPTUAL STUDY OF UNIFIED PAYMENT SYSTEM IN INDIA**

**1.1.1** Reserve Bank of India has taken a revolutionary step in Indian payment system which is popularly known as UPI (Unified Payment Interface). Before the introduction of UPI in Indian payment system, Reserve Bank of India and Indian Banks Association incorporated National Payment Corporation of India (NPCI) in December 2008 and got certificate of commencement of business in April 2009.

**1.1.2** UPI was launched in April 2016 and developed and controlled by National Payment Corporation of India. Unified payment system was first introduced by Mr. Dilip Asbe on 25<sup>th</sup> august 2016. 2016 was popularly known as year of demonetization. Demonetization played a significant role in increased use of UPI. Unified payment system was launched by NPCI and till date it is operated by NPCI. UPI is most successful, easy to use and transformative payment system in digital era. It is regulated by Reserve bank of India. There are number of platforms which are used to transfer money via UPI. Out of these four leading UPI applications are discussed in detail with their comparative analysis.

### **1.1.3 LEADING UPI APPLICATIONS**

❖ **BHIM UPI** stands for Bharat Interface for Money UPI. BHIM application was developed by NPCI and launched by Prime Minister Sh. Narendra Modi on 30 August 2016. It offers direct bank payments to anyone by using their UPI id or by scanning QR code. Now these days BHIM 2.0 an updated version of BHIM UPI Application is popular with the feature of linking overdraft account on BHIM UPI.

❖ **GOOGLE PAY** is developed by Google, a digital payment platform and provides online payment system. Google pay with all banks that support BHIM UPI. It is a simplest way to send money, make payments online, recharge mobile phone, pay electricity bills, make payments at general stores etc. User can make payments by using their unique UPI ID or by scanning QR code.

❖ **ROZARPAY** .In May 2014, two alumni of IIT Roorkee Mr. Harshil Mathur and Mr. Shashank Kumar developed Application of Rozarpay. Rozarpay is India's first payment gateway which is developed to provide an effective payment system for startups. More than 200 million shoppers use Rozarpay for business payments or transactions.

❖ **PHONEPE** was founded by Mr. Sameer Nigam in 2015 and serves as its chief executive officer. It is another digital payment gateway which helps in making payments by using unique UPI identity. It also provides another service like business solutions, investment, insurance etc.

## **2. LITERATURE REVIEW**

➤ (Neema, 2018) "UPI (Unified Payment Interface) – A new technique of digital payment: An Explorative study" Authors of this paper covered history of digital payment and mentioned the role of UPI in digital payment gateway in India. Authors specifically mentioned the different digital payment formats, emphasized on role of demonetization in boosting use of UPI or digital payment platform. They discussed in this paper benefits of different UPI applications and their drawbacks. In this paper they gave comparative analysis between RTGS, NEFT, UPI, USSD, debit and credit card on POS (Point of Sale) and Mobile banking.

➤ (Veshne, 2017) "Unified Payment Interface (UPI) - A Way Towards Cashless Economy" with the help of this paper authors discussed the importance of UPI in present digital payment era. When this paper was published at that time payments via UPI was at its initial stage so most of banks were adapting this technology. This paper defined that UPI supports e-commerce activities, provide more secure payment service to both seller as well as buyer, use of smart phone for UPI is necessary etc...

➤ (PHILIP, 2019) "Unified Payment Interface: Impact of UPI in customer satisfaction" this research paper is based on four main objectives these are analysis of UPI impact on customer satisfaction, identification of variance between UPI services and traditional payment services, to know about various usages of UPI, to identify relationship

between customers (respondents) education and occupation towards UPI services. Entire study was based on 4 hypotheses; regression analysis was used as statistical tool for analysis of data.

➤ (Jadhav, 2023) “An analytical study of unified payment interface service” provided by National Payment Corporation of India, this study is a synopsis of research which was executed by Bharat Sidharam Jadhav. In his study, his main emphasis is on importance of unified payment system in daily life and role of NPCI in establishment of UPI system in India. Data was collected from both sources primary as well as secondary sources. Sample size was 1200 users who are currently using UPI services.

➤ (Team TranZact, 2022) “Cashless Economy in India: Benefits, Importance and More” this article published by tranzact website. In this article/ report author publisher emphasized on the benefits and importance of cash less economy in India. There are many modes by which cashless payments can be made like debit card, credit card, mobile wallets or net banking etc...But in this article publisher did not discuss about unified payment interface.

### 3. OBJECTIVES OF STUDY

- To show the growth of UPI system in India
- To ensure importance of UPI in our daily life

### 4. RESEARCH METHODOLOGY

#### 4.1. DATA COLLECTION

Both methods of data collection are used to collect data such as primary sources and secondary sources. A standardized questionnaire is used to collect data regarding

the proposed title by using Google forms as primary data and some data is directly taken from the official site of National Payment Corporation of India, Reserve bank of India, Unified payment interface (Bhim UPI, Phonepe, Google pay, and Rozarpay). Information has been drawn from newspapers, magazines, e-journals, reference books etc...

#### 4.2. ANALYSIS OF DATA AND INTERPRETATION

Data collected is analyzed in the form of tables, histogram, pie chart and trends. Further same are the interpreted accordingly. We tried to round off the value to nearest 50. Which means 50 or less than 50 , value round off to 00 and 51 or more than 51 value round off to 50 Explanation and interpretation of analyzed data is given as follows:

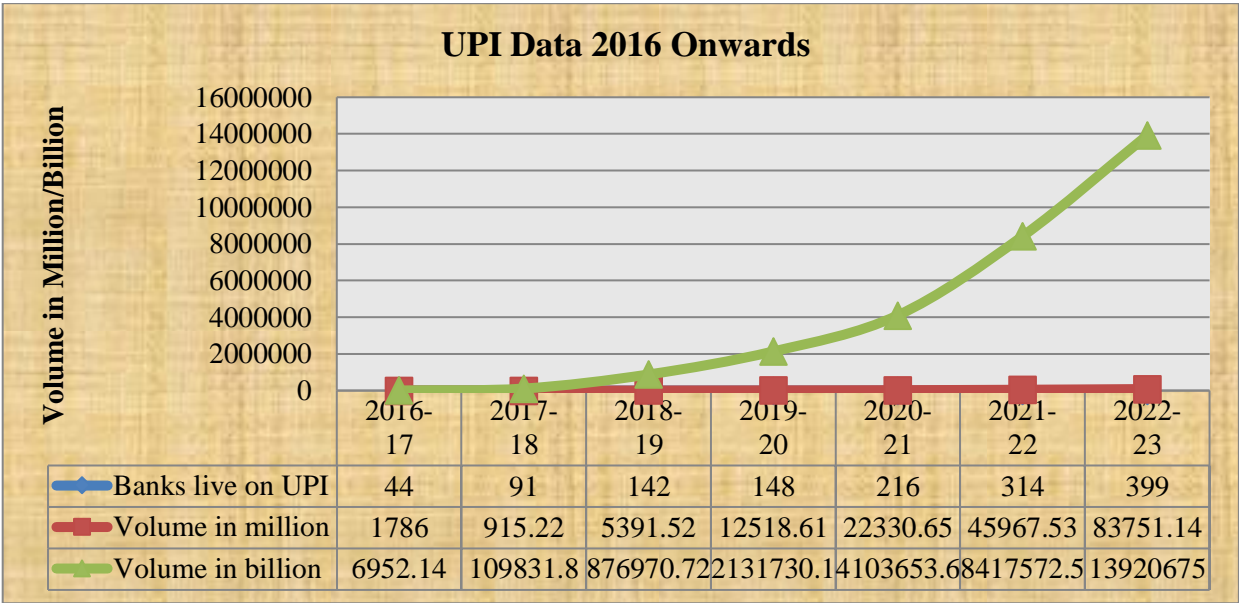
##### 4.2.1. Analysis of data collected from Secondary sources

Year	Banks live on UPI	Volume in million	Volume in billion
2016-17	44	1786	6952.14
2017-18	91	915.22	109831.8
2018-19	142	5391.52	876970.72
2019-20	148	12518.61	2131730.1
2020-21	216	22330.65	4103653.6
2021-22	314	45967.53	8417572.5
2022-23	399	83751.14	13920675

Table-1

Source: <https://www.npci.org.in/what-we-do/upi/product-statistics>





**Fig.1**

Table 1 and figure 1 clearly show the growth of UPI in India. Years are shown on OX-axis and OY –axis shows the volume of UPI transaction in millions and billions.

➤ **Banks live on UPI 2016 onwards**

We can see in above chart that before 2016 less than 44 banks are live on UPI means which are not using or updated there banking system. But after demonetization in 2016, people are using UPI many banks started to live on UPI. The chart shows that number of banks are updated on UPI and started to consider UPI in daily transactions. In 2016-17, 44 banks live on UPI, in 2017-18 this number increased to 91 more than double of banks in 2016-17. As people are getting aware about UPI application in 2018-19 these number of banks raised to 142 and in 2019-20 it increased to 148. In 2020-21, 2021-22 and 2022-23 number of banks live on UPI increased to 216, 314 and 399 respectively.

➤ **Volume of transactions in Millions and Billions**

People are using UPI for making payments, money transfer, merchant payment, paying electricity bills, recharge of mobiles, insurance payment, buying goods online etc. This leads to increase in transaction in million and Billion. Above mentions chart and table shows volume of transactions are increasing tremendously. In 2016-17, these transactions

were 1786million and 6952.14 billion but in next five year i.e. 2017-18,2018-19, 2019-20,2020-21,2021-22 and 2022-23 it was increased to 915.22 million, 5391.52 million,12518.61 million,22330.65 million,45967.53 million and 83751.14 million and volume in billion 6952.14 billion,109831.8 billion,876970.72 billion,2131730.14 billion,4103653.58 billion, 8417572.48 billion,13920675.21 billion and 14339790.57 billion.

➤ **From April 2023 to December 2023** data is not shown in table and chart because of in this time period data of nine months is included. If compare these 9 months to the previous year then we can conclude that volume of UPI transactions in million and billion is even greater than volume of UPI transactions in million and billion of previous years. In these 9 months total number of banks live on UPI is 522 and volume of transactions is 93419.02 million and 14339790.57 billion.

#### 4.2.2. Analysis Of Data Collected From Primary Sources

##### ➤ Demographic Profile of Respondents

Demography of respondents has a great influence on use of UPI applications. Because No. of people (Male and Female) and under which age group they are covered. Its main aim to show that which group is using UPI more.

Serial Number	Particulars	No. of Respondents	Percentage
1.	Gender		
	a) Male	39	30
	b) Female	91	70
	Total	130	100
2.	Age		
	18-22	39	30
	23-27	43	33.07
	More than 28	48	36.92
	Total	130	100

Table-2

Table -2 shows that data is collected from 130 respondents out these 39 are male and 91 are female. Next row is showing age grouping of respondents in which 30% are in the age group of 18-22 , 33.07% are in age group of 23-27 and 36.92% respondents covered under the age group of more than 28.

##### ➤ Usage of UPI Application

UPI Applications	No. of Respondents used	Percentage
a) Bhim UPI	8	6.15
b) Google Pay	49	37.69
c) Rozarpay	27	20.8
d) Phonepe	17	13.08
e) All the above	21	16.15
f) None of the above	8	6.15
Total	130	100

Table-3

Table-3 represents that how many respondents are using various applications of UPI. As in above mentioned table ,we can see that there are 130 respondents out of which

6.15% respondents are using Bhim UPI, 37.69% are using Google pay, 20.8% are using Rozarpay, 13.08% are using Phonepe. There are two more categories of respondents out

of which 16.15 % respondents are using all UPI Applications (Bhim UPI, Google Pay, Rozarpay, and

Phonepe) and 6.15% respondents are here who are not using any of mentioned UPI application.

#### ➤ UPI Adoption Influence on Payment Experience of Respondents

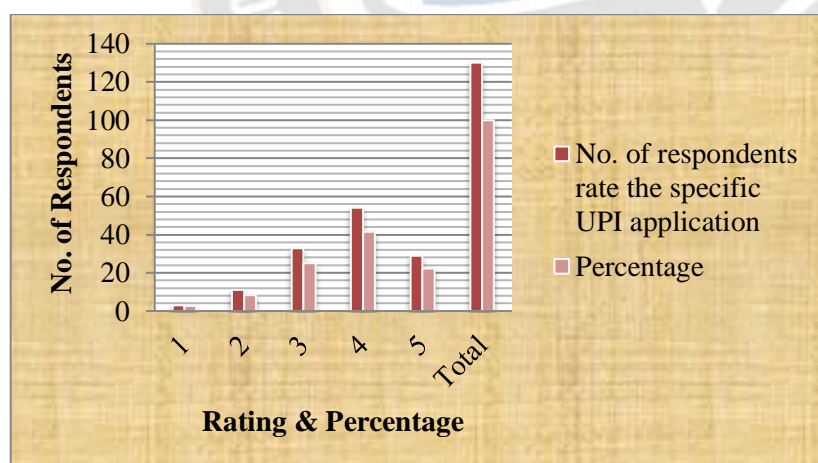
Five Point Scaling		No. of Respondents Influenced	Percentage
1.	Very minimal influence	4	2.8
2.	low influence	7	5.6
3.	Moderate influence	51	38.9
4.	High influence	46	36.1
5.	Very high influence	22	16.7
Total		130	100

**Table-4**

In Table -4 authors want to show the influence of UPI on payment experience of respondents. Where 2.8% respondents have very minimal influence on their payment experience, 5.6% respondents have less influence on

payment by adopting UPI, 38.9% respondents' payments are moderately influenced. 36.1% and 16.7% respondents have high influence and very high influence respectively.

#### ➤ Influence of Specific UPI System

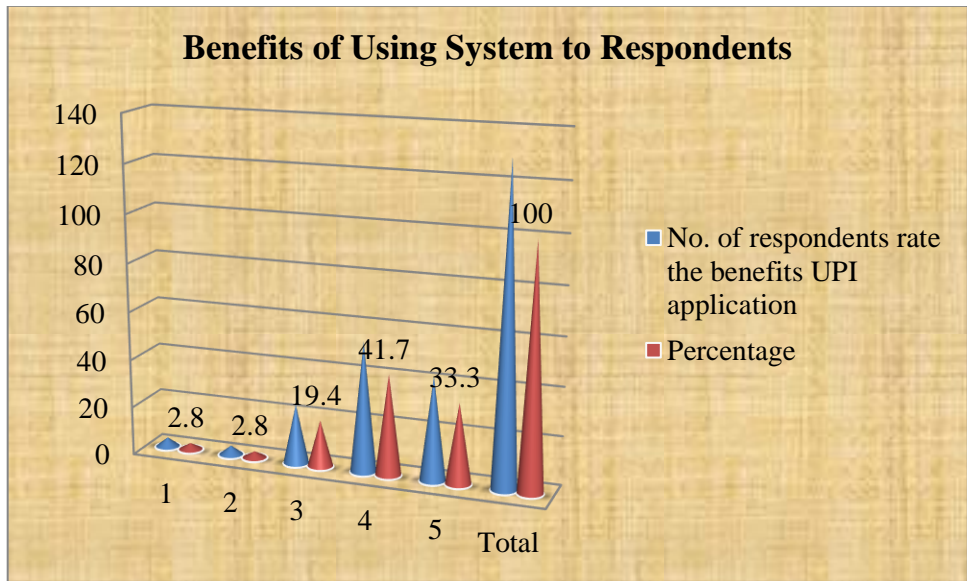


**Fig.-2**

Above figure shows the influence of specific UPI application in their daily life. As we can see that respondents who rated 3, 4 and 5 are moderately influenced, highly influenced and very high influenced by

specific UPI application which is used by them in their daily life. 1 and 2 ratings shows UPI system has very less influence on some respondents.

➤ **Benefits of Using UPI System to Respondents**

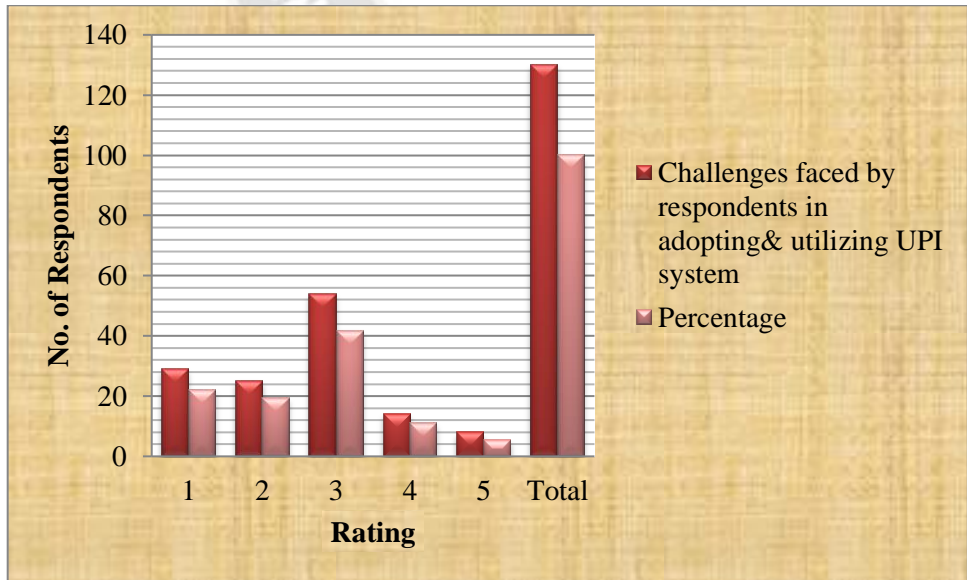


**Fig.-3**

There are number of benefits of UPI applications like anytime anywhere payments can be made, easy to use, no need to go bank for money transfer, cashless currency, more secure and trustworthy. Figure-3 shows that 41.7% and 33.3% respondents rated 4 and 5 to benefits of UPI

which means UPI applications are beneficial for their daily payment experience whereas 2.8%, 2.8% and 19.4% respondents also have benefit but in less than other respondents.

➤ **Rating Of Challenges Faced By Respondents In Adopting And Utilizing UPI System**



**Fig.-4**



There are number of challenges are faced by the users of UPI like security issues, cyber crimes, limited number of transactions, availability of internet connections etc...Figure- 4 shows that data is collected from 130 respondents which is shown on OY-axis and raring given by them is shown on OX-axis. According to 22.2%, 19.4% and

41.7% respondents , UPI system is very less challenging, less challenging moderately challenging which means maximum respondents feel easy to use UPI respectively and 11.1% and 5.6% respondents feel adopting and utilizing UPI system is highly challenging and very highly challenging respectively.

#### ➤ Respondents' Trust and Security in UPI Payment System

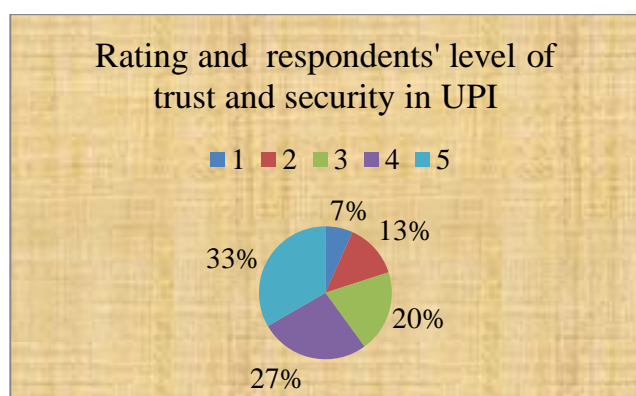


Fig. - 5

UPI payment system is more trustworthy and provides security to the account as compare to other payment modes. Figure-5 represents that 20%, 27% and 33% rated 3, 4 and 5 respectively represent the high and moderate level of trust and security on UPI system by respondents. Still there are some respondents who have doubt on security of accounts on UPI system that's why 7 % and 13% rated 1 and 2 respectively.

#### 5. CONCLUSION

In above study we tried to study the satisfaction level of customers from UPI, to know the growth of UPI in Indian digital payment system. After studying the behaviour of customers towards UPI, we come on the conclusion that UPI is a revolutionary step which was taken by Reserve bank of India in association with National Payment Corporation of India. In Indian payment system, no doubt there are many digital payment platforms already exist in Indian economy but UPI is launched with more effective features like speedy money transfer, any type of merchant payment. Recently, another initiative was taken by RBI in UPI during its

Monetary Policy Meet that is users can now make small payments without entering PIN which is known as UPI Lite. UPI Lite was launched in September 2022. With the help of this study we are come on the conclusion that UPI is more secure, provide privacy to bank accounts of users of UPI, makes payment system more easy, small payments can be initiated without PIN, people feel UPI is more trustworthy than other mode of payments. In one line we can say that Unified payment interface is a revolutionary initiative in Indian payment system.

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