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Analysis of Usage of UPI Payments in Banking Sector

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Abstract: *The genesis of India's unified payment solution prior to 2016; India used a number of different systems to transfer money between banks. The traditional forms included RTGS, IMPS and NEFT. With the plethora of systems, rules and growing paper burden, there was a need for a unified system that could automate and standardise India's payment platforms. In 2016, NPCI set out with a mandate to change the face of India's payment systems. It developed the Unified Payments Interface (UPI) as an architecture framework with a set of standard Application Programming Interface (API) specifications to facilitate online payments. The aim was to simplify and provide a single interface across all NPCI systems, thereby creating interoperability and a superior customer experience. The pilot program, with 21 member banks, was launched on 11th April, 2016, by Dr. Raghuram G. Rajan, Governor, RBI, in Mumbai. From 25th August, 2016, a growing number of banks started to upload their UPI enabled apps to the Google Play store. The Indian Banking system is considered as a strong backbone of India's economy through which millions of financial transactions get exchanged every single minute. To increase this number in the year 2016 India has taken initiatives to start the "Digital India" campaign by National Payment Corporation of India (NPCI) through which online digital payments got huge importance. In the year 2021, India became the global leader in real time digital payments. This study will be helpful to understand the changing scenario of the banking system in India and also cover the satisfaction of customers with their banking services. In India unified Payments Interface has become the game changer in the history of the banking system. It helps to smooth functioning of the payment system without any complications. This study will be useful to know the impact of UPI on banking. The objective of the study is to study awareness, preferences, level of satisfaction of customers while transferring funds.*

The Unified Payment Interface (UPI) is one of the great inventions of E-payments introduced by National Payment Corporation of India (NPCI). UPI is an advanced and significant payment system in terms of cost, ease of use for consumers, settlement times and security. It has facilitated a large number of populations to bring within the purview of the digital economy. It is a type of payment system through which any customer holding a bank account can send and receive money through a UPI-based app. The customer can easily exchange money by using UPI payment apps.

I. INTRODUCTION

A. Background

Real-time payments with the Unified Payments Interface (UPI) The Unified Payments Interface (UPI) is a revolutionary, user-friendly, real time payment solution that facilitates inter-bank transactions, and enables greater digital payments adoption in the country. Developed and launched by the National Payments Corporation of India in 2016, UPI is now one of the most preferred payment solutions in India, with over a billion transactions every month. UPI's core function is to support easy and secure money transfers between bank accounts. It does this by adding multiple bank accounts into a single mobile application, allowing for seamless fund transfers and merchant payments from one place. It also enables 'peer to peer' and 'peer to merchant' collection requests, which can be scheduled and paid as requested. Payments can be made using a UPI ID, UPI Number, Account number, and an Indian Financial System Code (IFSC). Payment security is as per applicable RBI guidelines using a 1-click 2-factor authentication where the second factor of authentication is the UPI PIN. UPI is also available through the Unstructured Supplementary Services Data (USSD) channel to enable UPI members to cater to users of feature phones.

B. Objectives of The Study

- 1) To understand the conceptual framework of UPI Payments.
- 2) To understand UPI user's satisfaction while using UPI payment app.
- 3) To examine problems, face by UPI users

C. Scope of Work

- 1) Study UPI working algorithm
- 2) Study of actual Receipt and Payment of Money.
- 3) Study of usefulness of UPI, its Advantages and disadvantages.

II. REVIEW OF LITERATURE

Digital India Citizen Survey – UPI (20 Oct 2023- 15 Dec 2023) by Government Portal mygov.in Over the years, we have seen a significant uptake of applications built around UPI. Through these applications, UPI has become an important part of the digital financial infrastructure. In the backdrop of this growth of UPI, we want to learn about your experience and challenges of using UPI-based applications through this survey. The survey is rather lengthy because Government wants to give the citizens a thorough opportunity to tell them about their experience with UPI-based applications. As a result, Govt. requests that citizens to bear with them and complete the survey as their feedback would be invaluable in assisting them in providing us with a better UPI experience

Dr. Prakasha M. N (2023) conducted a study on “A study on Unified Payment Interface (UPI) among University Students in Madikeri City” states that the people are more aware of digital payments they are more satisfied with the digital payment interface which leads to faster exchange of transactions.

Sunny Gupta and Dinesh Chand (2021) Conducted study on “Consumer Perception towards Unified Payments Interface.” They found that male users are more as compared to female users of UPI payment apps. They found that using digital apps is a rigid concept. Their overall study shows that UPI users are happy and satisfied by using digital payment apps.

Balsubhramaniam M and Amanullah K.M. (2019) conducted a study on “Mobile Banking and its Evolution in the UPI era” They studied the evolution of UPI payments in India and their impact on paperless transactions. In their study they found that most of the UPI users are using Google Pay and Phone Pe app for paperless transactions as compared to BHIM app which is owned by the government.

III. RESEARCH METHODOLOGY

The above study is based on Primary as well as secondary data. The researcher collected primary data through different surveys conducted by renowned authors. The secondary data will be collected through the internet, websites, articles, newspapers etc. The researcher used random and cluster sampling data to collect data from different sources of information.

A. Primary Data Collection

1) Interviews

Direct Interviews for collecting data from the End User and Merchants on UPI payments through direct conversation, telephone call and online data collection from the customers of IDBI bank & other nearby banks (Govt., Private, Foreign & Cooperative)

UPI Apps Related Questionnaire

Discover user insights and preferences with our UPI apps related questionnaire survey.

1. Do you use UPI apps for making payments?

- ☐ Yes
☐ No

2. Which UPI app do you use most often?

- ☐ Google Pay
☐ PhonePe
☐ Paytm
☐ BHIM
☐ Other

3. How satisfied are you with the user interface of UPI apps?

- ☐ Very satisfied
☐ Satisfied
☐ Neutral
☐ Dissatisfied
☐ Very dissatisfied

4. What features do you find most important in a UPI app?

- ☐ Fast transactions
☐ Security
☐ Cashback offers
☐ Bill payments
☐ UPI QR code payments

5. What improvements would you suggest for UPI apps?

2) Observations

Observations and recording of the behaviour, actions and events in the Markets, Super Stores, Local shops & Street Vendors without direct intervention.

B. Secondary Data Collection:

1) Published Sources

Referring to books, academic journals, magazines, newspapers, government reports, and other published materials that contain relevant data.

2) Online Databases

Online databases providing access to a wide range of secondary data, such as research articles, statistical information, economic data and social surveys.

3) Government and Institutional Records

Data collection from Government agencies, research institutions and organizations maintaining databases or records that can be used for research purposes.

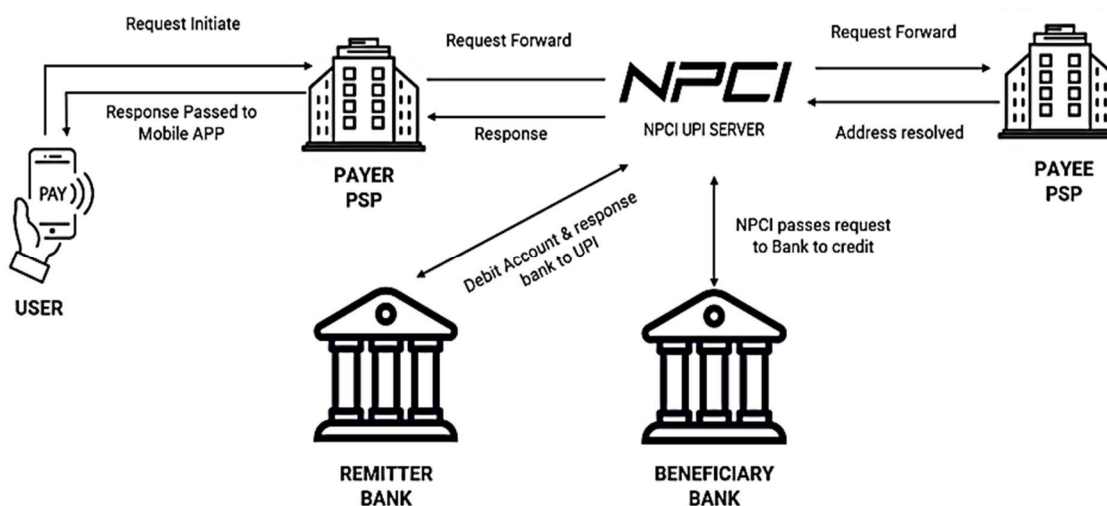
4) Publicly Available Data

Data shared by individuals, organizations, or communities on public platforms, websites, or social media can be accessed and utilized for research.

5) Past Research Studies

Collecting previous research studies and their findings which serve as valuable secondary data sources. Data is reviewed and analysed to gain insights or build upon existing knowledge

IV. TECHNICAL KNOW HOW AND PROCESS CHART



Key Role Players

- 1) User – who pays or receives money from / in bank account through payment apps
- 2) Payer PSP – Bank or TRAP
- 3) Payee PSP – Bank or TRAP
- 4) Remitter Bank
- 5) Receiver Bank

V. ELABORATION ON KEY ROLE PLAYERS

A. User

User is the Person who either initiates the payment/transaction through Smartphone or Receives money in his Bank Account.

B. Payee / Payer PSP

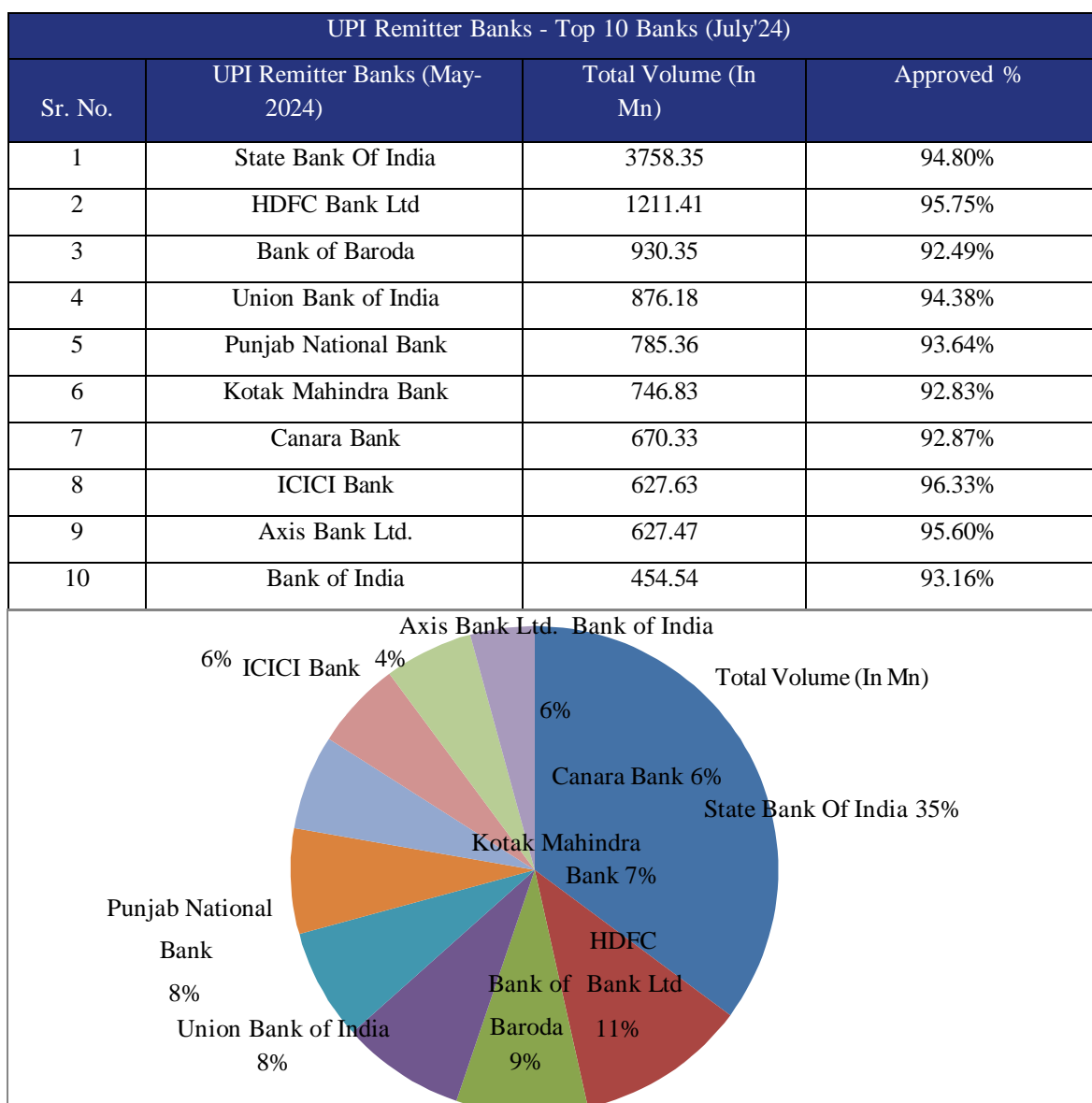
Payee PSP can be a bank itself who uses its own infrastructure to initiate payment through its own payment app such as Go Mobile for IDBI bank. Payee PSP can be TRAP also that means Third Party Application Provider who act as the same role but uses a partnered bank for transaction flow such as G-pay with ICICI, SBI etc.

C. Remitter / Receiver Bank

Remitter bank means from whom the amount of money is deducted- where the user has maintaining account and Receiver bank means the bank who receives money on behalf of the account maintained by its account holder.

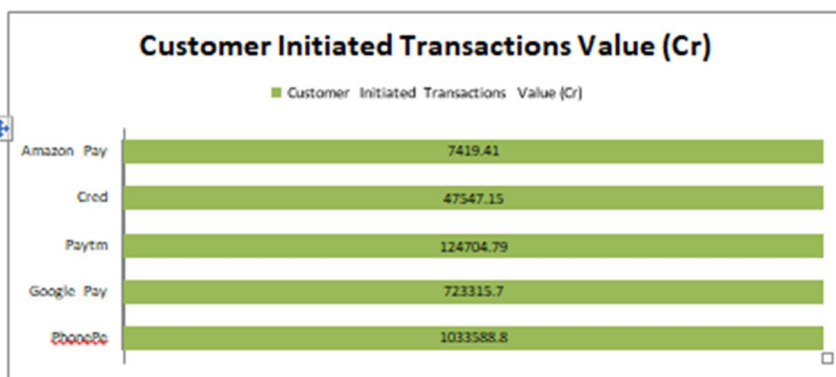
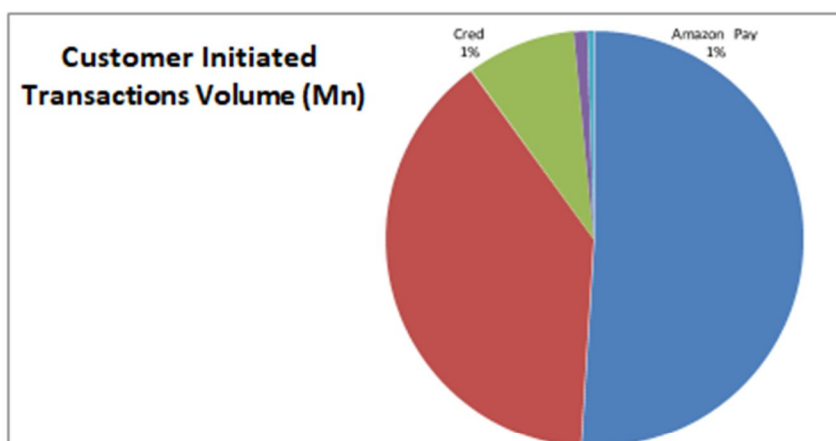
D. Major Key Role Players as PSP and TRAP

1) PSPs



2) TRAPs

UPI Apps (July'24)			
Sr.No.	Application Name	Customer Initiated Transactions	
		Volume (Mn)	Value (Cr)
1	PhonePe	6831.92	1033588.8
2	Google Pay	5219.56	723315.7
3	Paytm (OCL)	1140.01	124704.79
4	Cred	140.08	47547.15
5	Amazon Pay	68.34	7419.41



UPI Merchant Category-wise Classification - May'24	
Type	Description
High Transacting Categories	Groceries and supermarkets
	Fast food restaurants
	Eating places and restaurants
	Telecommunication services
	Service stations (with or without ancillary services)
	Digital Goods: Games
	Bakeries
	Drug stores and pharmacies
	Department stores
	Utilities electric, gas, water and sanitary
Medium Transacting Categories	Dairies
	Debt collection agencies
	Drinking places (alcoholic beverages)
	Candy, nut and confectionery shops
	Freezer and locker meat provisioners
	Electronics repair shops
	Telecommunication equipment and telephone sales
	Package shops beer, wine and liquor
	Cable and other pay television services
	Cigar shops and stands
All Other Categories	Online Marketplaces
	Electronics shops
	Men's, women's and children's uniforms/ commercial clothing
	Securities brokers and dealers
	Beauty and barber shops
	Government services not elsewhere classified
	Passenger railways
	Variety stores
	Financial institutions merchandise and services



3) UPI Lite

It can scan QR code without the need of an internet connection. In phase 1, UPI Lite will process the debit transaction offline while the credit will happen when the device goes online. But the final goal is to achieve both credit and debit transaction through offline mode. The upper limit of UPI Lite On-Device wallet is ₹2,000.

4) 123Pay

Voice-based payment service for feature phone users in low connectivity zones over UPI payment ecosystem under Interactive Voice Response (IVR) project

UPI 123PAY has four options for payment

- a) App-based functionality where a mobile phone manufacturer can install a UPI app through over-the-air programming that can be used for payment.
- b) Missed calls based: where a customer can use a dedicated merchant payment number by giving a missed call. The incoming authentication call will ask for PIN verification to complete the transaction.
- c) Interactive Voice Response (IVR) based where the payment transaction will be completed using pre-defined phone numbers.
- d) Payment in offline mode through sound-based proximity data communication.

5) UPI International

To save the cost borne by Indians living abroad when sending money back home, NPCI is planning to move 32 million expatriate populations from SWIFT to UPI.

From 30 April 2023, international mobile numbers from Malaysia, Singapore, Australia, Canada, Hong Kong, Oman, Qatar, USA, Saudi Arabia, UAE, and the UK will be able to access the UPI transaction facility. It will be available through non-resident external (NRE) and non-resident ordinary (NRO) accounts Customers of Axis Bank, DBS Bank, ICICI Bank, Indian Bank, Indian Overseas Bank, and State Bank of India can now utilize the remittance facility between Singapore and India via the BHIM, Paytm, and PhonePe applications, according to a 11 January 2024, announcement from NPCI

6) UPI One World

RBI announced extending UPI payment facility for inbound travellers from G20 countries. Transcorp International will enable UPI One World for nationals coming from G20 countries.

7) UPI Wallet

UPI Wallet facility has been introduced for foreign tourists in India, Once set up, users can add funds using their preferred debit or credit card and start scanning to pay at over 20 million stores in India with no commission fee. The wallet's wide acceptance means it is convenient for tourists to transact in any location, from roadside tea stalls to five-star resorts. There are apps for UPI wallet such as Cheq UPI.

List of countries that accept UPI*	
Sr.no	Country Name
1	Bhutan
2	France (E-commerce)
3	Mauritius
4	Nepal
5	Singapore
6	Sri Lanka
7	UAE

VI. GIST FROM DATA

A. *Impact of UPI Payments On The Banking Sector*

- 1) Enables easy transactions: The UPI payments simplify the banking works the individuals are processing their receipts and payment through UPI payments it helps easy tracing of all transactions. It helps the bank employees to focus on other banking work.
- 2) Safe and Secure: The UPI application is secure because it works under the RBI's guidelines and it reduces the risk of payments for the bankers.
- 3) No Bank details required while payment: Using UPI payments makes the banking work easier for making any payment customer do not require any bank details like account number, IFSC code etc. It leads to reduce burden of work from bankers.

B. *Factors Influencing Individuals To Use Upi Digital Payment*

The UPI payment system is a simplest and quickest form of payment system which is available for 24/7 for all kinds of payment it encourages more and more customers to use while making payments. There are many other factors which help in influencing people to use online payment system, they are as follows,

- 1) Quick money transfers: Due to usages of UPI payment application the money gets transferred within a few seconds it gives comfort and security for the users.
- 2) Cash back offers: Many individuals get attracted towards the UPI payments due to attractive cash back offers; the cash back offers provide additional benefits to the individual while making any payments through app.
- 3) Ease of usability: The UPI payments apps are very easy to use like other mobile apps. There is no need for any training and extra efforts for learning UPI payment apps. People from all generations can use this application without any hesitation.
- 4) Trusted Payment System: The Unified payment interface is a RBI approved digital payment system. The whole system is regulated by RBI guidelines it helps to build trust of users.
- 5) All transactions get traced: The individual finds UPI payment more effective than spending cash for expenses because it is time taking to keep a record of cash transaction. In UPI payment system all transactions get recorded in the history it helps individuals to trace their income and expenditure on daily basis.
- 6) 24/7 support: The UPI payment app is providing 24/7 support. It is useful for the individuals for receiving and paying money from any time anywhere without any time barriers.

C. *Benefits of UPI Payments To The Different Users*

The UPI payment system is benefiting the different users according to their requirements. It helps all kinds of users to receive and pay money.

1) *Benefits of UPI to Merchant*

The UPI payments play a huge role in the life of merchant and business owners. The UPI helps to transfer money instantly in the bank account. it becomes easy for the merchant to carry their transactions smoothly and effectively. The following are some benefits of UPI to the merchant,

- a) Instant money transfer: The bank provides QR scanners to the merchant for receiving money from the customers. It helps to instant transfer of money from one account to another account.
- b) Easy payments of Bills: It also gives facilities for instant payment of bills to the vendors. Earlier it was a very time-consuming process for the merchant to visit the bank to draw a cheque for RTGS for it was a very lengthy procedure and one was not reflected on the same day. Due to UPI payment app all this work become easy and instant.
- c) Efficient and low-cost method to receive payments: The UPI app made payments work easier and it is absolutely free for the users. With the help of the UPI payment app the merchant can receive multiple payments at the same day without any additional cost.
- d) Easier invoice generation: The UPI app helps to keep check on all the transactions it leads to easy invoice generation. Due to this the merchants can keep a record of all the transactions in a systematic form.

2) *Benefits to the Customer*

The UPI payment app is playing vital role in the daily life of the customers. Some of the benefits are as follows;

- a) 24/7 constant support: There is no time slot provided for the usages of UPI payment app. It helps in easy transfer and receives money anywhere at any time. This constant support gives freedom of spending and receiving to the customers.

- b) Can be used for online and offline purchase: The UPI payment application is useful for online as well as offline payments. It reduces the burden of carrying cash.
- c) Secured and safe: The UPI payment interface provides security to you by applying a security pin while opening the application and while doing any sort of payments. It gives your security while making payment and reduces chances of misuse.
- d) Easy record of transaction: It helps the customer to plan their budget and investments by keeping record of each and every transaction without any hidden charges. It helps the customer for projecting their future plans.
- e) All Services under one roof: The UPI payment application is providing all kinds of payments and receipts services under one roof. It is most convenient for people to pay all expenses and investment under one roof.

D. Problems Faced by Customers While using UPI Payment APPs

- 1) Server issue: Sometimes bank server is slow therefore the individuals unable to make payment. This server issue may cause delay in payment.
- 2) Rewards: The rewards which are offers on the payment are not so attractive. The payment from Google pay application give cash back of rs.3/- or rs.4/- on payment these are not much attractive offers on payments. Sometimes they give discount offers on different companies' product for enjoying reward they force customers to spend for additional purchase.
- 3) Lack of awareness: Due to lack of awareness many individuals have no knowledge regarding application usages there is not proper advertisement shown in any media regarding how the app can simplify payment method.
- 4) Problem of safety and Security: Many individuals have problem on safety and security of using payment application because many time money can get easily transfer by hacking of mobile or by receiving fraud calls.
- 5) Transaction Limit: In UPI payment application there is transaction limit for payment received and paid. There is a limit of Rs.1, 00,000/- per day therefore it is not much useful for the merchant.

VII. FINDINGS

From the above study bases following are the findings of the studies.

UPI application payment services are playing a vital role in the economy by circulating millions of transactions in a day.

UPI payment application helping Digital India scheme by creating a cashless economy.

From the above study it is clear that 97.60% of the respondents are using digital payment applications for the payment purpose.

Google pay is the highest used application for the payments.65% of the total respondent using Google pay application for receiving and paying money.

The study shows that 97% of the total respondents are satisfied with the UPI payment application.

The Usages of UPI payment application leads to excess spending as compared to cash spending. UPI is easy for small as well as for the big payment so individuals spending more without thinking.

VIII. SUGGESTIONS AND RECOMMENDATIONS

- 1) The main objective of UPI payment application is to support the Digital India Scheme of the government by creating a cashless economy. To achieve that objective awareness regarding digital payment application is necessary. The UPI application companies should advertise their app through various media.
- 2) To create effective working of the UPI payments the companies should give attractive rewards on the payments it leads to more and more payments through UPI applications.
- 3) There is a limit for the payment through UPI application. The limit should extend so all transactions will be done through payments.
- 4) The UPI payment companies should increase security for the safety of customers' interest.
- 5) The digital Payment system is used for the payment purpose only; it should be usable for other banking services.
- 6) The UPI payment application should provide small saving schemes for the individuals in which they can save a small amount of money for their future.
- 7) The UPI payment is an initiative for the spending it should be utilized for the investment and saving purpose.

From this study it is observed that the UPI payment is accepted by individual, merchant bankers and not by the school, colleges and government entities. It should be applicable to government offices to accept payment through UPI applications



IX. CONCLUSION

The UPI payment is very useful for the payment purpose the individuals do not have to pay any extra amount for the payment. It is very helpful for carting cashless economy system. The people of different age group, different income level uses UPI applications for the payment purpose. From this study it is observed that more than 95% of the respondent uses digital payment application for payment. People find it more useful than traditional method of banking. It also helpful for doing all transaction through UPI because it help to trace each and every transaction. The usages of payment app reduced the burden of bankers' form handling huge transaction on bank counter.

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