# **Exploring Digital Wallet Usage in the Indian Market**

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#### Abstract

India is taking huge leaps towards digitalisation. The banking industry is at the forefront of this race. Many products like Unified Payments Interface (UPI) have been introduced to give impetus to digital payments. The aim of the study is to explore the actual usage of UPI payments in the Indian market, based on differences in personal traits of the consumers. The data was collected using a web-based questionnaire, from 253 respondents. Personal traits like age, gender, current place of residence, and occupation have been used as the input variables to study the actual usage of UPI payments. The results show that as the age of the respondents increased, there was a decrease in the actual usage of UPI. UPI payments are popular among students, but are less used by government employees, retired people, and housewives. UPI downtime and transaction security negatively impact usage of UPI payments.

**Keywords:** UPI Payment, UPI Application, Personal Traits, Actual Usage, Wallet, Transaction Security, Server Downtime

# Introduction

India is next to China in terms of cash withdrawal from ATMs (Automated Teller Machine) (BIS Red Book). According to the RBI report, 'Assessment of the progress of digitisation from cash to electronic' (2020), cash withdrawal from ATMs has a Compounded Annual Growth Rate (CAGR) of 9% in terms of volume in the last five years. During the same period, digital payments have a CAGR of 61%. This shows that the Indian population is slowly but steadily moving towards digital modes of payments. The major digital modes of payments available in the Indian market are internet banking, mobile banking, debit cards, credit cards, Unified Payments Interface (UPI) payments, Aadhar-Enabled Payment Systems, mobile wallets, and PoS terminals. The digital modes of payments made inroads into the Indian market postdemonetisation of 2016. It was the same year when UPI was launched by the National Payments Corporation in India (NPCI). UPI is a system that enables multiple bank accounts in a single mobile app (for any participating bank), which includes several banking features, seamless cash transfer, and merchant payment in one place (NPCI, 2016). UPI payments have reported a CAGR of 414% since the time it was launched till FY2020, as per data available on the NPCI website. The contact-less payment feature helped increase the usage of UPI payments during the COVID-19 pandemic. This paper tries to explore the usage of UPI payments in the Indian market based on differences in personal traits of the consumers.

## **Literature Review**

Internet and mobile are two digital banking service channels which provide convenience and anytime and anyplace services. Hence, they have become important for banks to survive (Sundarraj & Wu, 2005; Daniel, 1999; Mols, 2001). To provide anytime and anyplace

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services, banks had to engage in mobile banking services (Koennaite et al., 2019; Zhou et al., 2010). This has made banks shut branches and use digital channels to the fullest (Groenfeldt, 2014). Another reason for banks to do so is the expected increase in profits, and depreciation and amortisation of more than 40% (Adeyanju, 2014). Cash and debit/credit cards were the only means of payments; however, today, many options are there: cash, debit cards, credit cards, mobile wallet, e-wallet, and direct debits (Harasim & Klimontowicz, 2013). Widespread acceptance of mobile technologies like smartphone payments by consumers, along with benefits like cash-back has resulted in better quality and terms of such payments (Amin et al., 2008; Moutinho & Median, 1989). Consumers from both advanced as well as developing nations are moving from cash to cashless modes of payments (Flood et al., 2013; Demirgücô-Kunt et al., 2018). One such type of payment option, which is UPI was introduced in India in 2016 by the NPCI.

UPI: UPI is one the mobile payment platforms introduced in April 2016 by the National Payment Corporation of India. The interface is managed through the Reserve Bank of India and operates through instant cash transfers between a financial institution's credit facilities on a mobile site. This visual interface works in such a way that it allows the bank account holder to receive and send money to their smartphone or computer with a single ID, which can be a mobile number, VPA (virtual payment address), or a QR code, without entering the bank account details (NPCI, 2016). UPI payment volumes have seen an average month-on-month growth rate of 8.05% (NPCI, 2021). As of April 2021, there are 220 banks in India which support UPI payments, and UPI uptime was 99.9444% (NPCI, 2021). UPI payment volumes and payment amounts as of March 2021 are 2641.06 million and 493663.68 crores respectively (NPCI, 2021).

# Methodology

There are various theories which have studied technology acceptance based on different constructs. However, in this study, we are looking at the impact of personal traits on the actual usage of UPI payments. Age had a moderating impact on mobile banking usage in the UK and the Lebanese market, whereas gender had a moderating impact on mobile banking usage only in the Lebanese market (Mohamad et al., 2020). Personal traits are being considered in most of the theories as an independent variable or a moderating variable. For this study, we would be considering the impact of age, gender, current place of residence, bank, and occupation on the actual usage of UPI.

*Age:* It has been found that age becomes a crucial factor in accepting a new technology. UPI has been in the market for the last five years. We want to know if age impacts the actual usage of UPI after its presence in the market for so many years.

*Gender:* Gender is another personal trait which had an impact on the actual usage in a few of the studies. However, a few studies did not find any impact of gender on the actual usage. This study will try to find out the impact of gender on the actual usage of UPI payments.

*Current Place of Residence:* India has a diverse population, with people staying in different towns and villages. This study tries to study the impact of residence of the user on the actual usage of UPI. Current place of residence will be categorised into three values based on the population of that town – tier 1, tier 2, and tier 3. Tier 3 value will also include villages.

*Occupation:* People in India are engaged in various occupations. For this study, we want to see the impact of these occupations on the actual usage of UPI. Government service, private service, retired, housewives (homemakers), student, or self-employed are the major employment types in India. This study will understand the impact of these various occupations on the actual usage of UPI.

*Bank*: India has public sector banks and private sector banks. Most of the private sector banks are technologically progressive compared to the public sector banks. By including this variable, we want to understand if UPI usage varies based on the bank where the user has an account.

Actual Usage of UPI: Self-reported usage (Igbaria et al., 1996) is being used in many studies to determine the actual usage, as actual usage data cannot be obtained from banks. Table 1 provides the items which have been used to measure actual usage.

 Table 1: Items Used to Measure Actual Usage

Sr: No.	Item	Reference
1	How long have you been using Google Pay/PhonePe/PayTM/BHIM/Amazon Pay	Moon and Kim (2001)
2	Weekly, how many times do you use Google Pay/PhonePe/PayTM/BHIM/ Amazon Pay?	Moon and Kim (2001)
3	I trust Google Pay/PhonePe/PayTM/ BHIM/Amazon Pay does not share per- sonal information	Mukherjee and Nath (2003)
4	I trust technology of Google Pay/Phone- Pe/PayTM/BHIM/Amazon Pay	McKnight and Chervany (2002)

Google Pay, PhonePe, PayTM, BHIM, and Amazon Pay are a few of the major UPI applications known to people. These applications are mentioned in the above items as most people know about these applications more than UPI.

*Research Setting:* People started exploring other modes of payments after demonetisation in 2016. From 1 April 2017, the Government of India put a restriction on cash payment of Rs. 2 lakhs or more. In 2019, the entire world was struck with the COVID-19 pandemic. To control the spread of COVID due to contact with other people, modes of payment other than cash and card were explored. UPI is one of the options widely used in these times.

*Measures:* It was ensured that a seven-point Likert scale was applied for measuring the actual usage of UPI payments. All the other independent variables were related to personal traits of the respondents. The data collected was then categorised into the appropriate groups so that comparison could be made among the groups on the actual usage of UPI.

#### **Data Collection**

This study collected primary data from users of UPI. A web-based questionnaire was created. A pilot test of the questionnaire was carried out with five respondents. Their feedback was considered to fine-tune the questions, and to remove any sort of ambiguity. After the pilot test, the questionnaire had 45 questions in total. The updated questionnaire was shared via email and WhatsApp with several people across India, who were 18 years or above. Around 253 responses were received.

#### Analysis

Below are the descriptive statistics from the survey:

*Gender:* Out of the 253 respondents, 87 were female and 166 were male, that is, 34.4% of the total respondents were female, while 65.6% were male.

 Table 2:
 Gender

			Per	Valid Per	Cumulative
		Frequency	cent	cent	Per cent
Valid	Female	87	34.4	34.4	34.4
	Male	166	65.6	65.6	100.0
	Total	253	100.0	100.0	

Source: Survey done for this study.

*Age:* One of the questions in the questionnaire was regarding the age of the respondents. Once the responses were received, the respondents were categorised into different age groups. Four groups were formed – the first group was 18 to 25 years; the second was 26 to 35 years; the third 36 to 45 years; and the last, greater than 45 years. Responses were received from all age groups, with most of the responses coming from the 18-25 years age group.

Table 3: Age

		Frequency	Per cent	Valid Per cent	Cumulative Per cent
Valid	18-25	148	58.5	58.5	58.5
	26-35	72	28.5	28.5	87.0
	36-45	16	6.3	6.3	93.3
	45 and above	17	6.7	6.7	100.0
	Total	253	100.0	100.0	

Source: Survey done for this study.

Around 148 respondents, which is 58.5% of 253 respondents, were in the 18-25 age group; 28.5% were in the 26-35 age group; 6.3% and 6.7% were in the 36-45 and 45 years and above age group, respectively.

*Current Place of Residence:* To understand the usage of UPI payments across India, it was necessary to understand the respondents' place of residence. Respondents provided their current place of residence, which were then categorised as Tier 1, Tier 2, and Tier 3 and villages.



Source: Survey done for this study.

#### Fig. 1: Current Place of Residence

Around 50.6% of the respondents were in Tier 1 cities, 26.1% in Tier 2 cities, and 23.3% in Tier 3 towns or villages. Responses suggest that we had a good representation from all types of towns in India.

*Occupation:* People from varied occupations responded to the survey. Students, housewives, retired people, the self-employed, and employees of private companies or the government responded to the survey.



Source: Survey done for this study.

#### Fig. 2: Occupation

Around 61.7% of the total respondents were students; 2% were housewives; 10.7% were government employees; private company employees formed 16.6% of the total respondents; and retired and self-employed respondents made up 1.6% and 7.5% of the total respondents,

respectively. Most of the respondents were students; however, all types of occupation were represented.

*Bank Account:* The most important criteria needed to use UPI payments is a bank account. One needs to have a bank account to use UPI.



Source: Survey done for this study.

#### Fig. 3: Bank Account

Around 250 respondents had a bank account, whereas just three did not. This shows that most of the respondents have a bank account, while only a few do not.

*Bank:* Apart from a bank account, we wanted to know in which bank a particular respondent had their account. It came to our notice that 135 out of the total participants had an account in a public sector bank, while 63 had an account in a private sector bank. Around 55 respondents had an account in both public as well as private sector banks.





#### Fig. 4: Bank

*Usage of UPI Since:* UPI was introduced in 2016. However, the usage has picked up only since the last two years based on data published by NPCI.



Source: Survey done for this study.

#### Fig. 5: Usage of UPI Since

The respondents showed a similar pattern, wherein only 10.7% started using UPI since 2016, and the remaining started using the application post 2016. Almost 50% of the respondents have started using UPI in the last two years.

*Usage in a Week:* Another important factor which we wanted to understand is the adoption of UPI payments in daily life. More the usage of UPI, means less usage of cash payments or any other modes of payments.



Source: Survey done for this study.

#### Fig. 6: Usage in a Week

The data collected shows that though people are using UPI, the daily usage is quite minimal. Only 8.7% of the respondents use UPI more than ten times a week; 58.9% use UPI less than five times a week; and 32.4% use UPI five to ten times a week.

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*UPI Application Preference:* One of the non-mandatory questions asked was regarding UPI application preference.

Almost 50% of the respondents answered this query; Fig. 7 shows their responses.



Source: Survey done for this study.

#### Fig. 7: UPI Application Preference

Google Pay is the most preferred option, followed by PhonePe. PayTM is third, with 14.5% of the respondents opting for it.

### Limitations

## Results

The usage of UPI decreased as the age of the respondent increased, and the usage of UPI was less among the government employees, retired people, and housewives. The data also showed that UPI usage per week was more among students. Almost 50% of the population started using UPI in the last two years. Google Pay is the most favourite UPI application, due to its user interface and cash-back offers, followed by PhonePe, which has additional features like self-account transfer. Most of the respondents who liked to use UPI payments said that they use it because it is easy to use. A few people are apprehensive about using these applications due to concerns over sharing of personal information and transaction security. Delays in transaction processing due to beneficiary bank server issues, conductor bank server issues, poor mobile network, or downtime of UPI are impacting UPI usage.

The scope of the current study is limited to UPI payments in India. Other researchers can study other digital modes of payments and how they are slowly making inroads into the Indian payment system. Personal traits were given primary importance in this study. One can look at the moderating impact of personal traits on various factors while comparing the actual usage of these payment systems.

# Conclusion

It may be safely concluded that the usage of UPI payments decreases with age, which coincides with existing literature. To increase the usage of UPI among the elderly population, the government may consider advertisements focusing on safety and speed of UPI payments. Another reason for not using UPI was the downtime while making the payments; this induced a negative image of UPI among the users. The Reserve Bank of India should ensure that banks upgrade their core banking system from their existing legacy systems. The uptime of UPI is close

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