



## Adoption and use of mobile payments: An empirical analysis of university students

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### Abstract

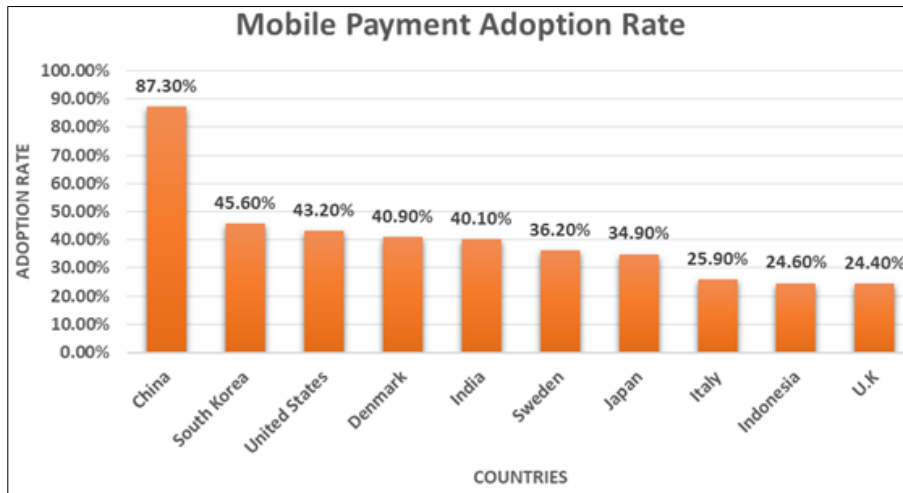
The digital transformation is taking the whole world by storm and no sector has been left untouched by such revolution. The consumer has a myriad of digital payment options to choose from. The choice depends on the attributes that are favourable to the user. The widespread adoption of smartphones, improvement in the network infrastructure and various digital initiatives by the government gave momentum to digital payments. COVID-19 and Demonetization have compelled people to use digital payment options. However, these two major phases have put limitations on people's lives but have transformed the way people do financial transactions. India has set the stepping stone for conducting digital transactions by setting up of National Payment Corporation of India in 2008 which acts as an umbrella organization for various payment and settlement systems. As per Standard & Poor Global Market Intelligence India's mobile payment transactions grew 163 per cent to 287 billion in 2019 when the pandemic gave its first presence in India. The various mobile payment apps like Google Pay, Phone Pay, Paytm, Amazon Pay etc. have been in access to Indian consumers and help in making payments conveniently, easily, quickly and securely. 98.1 per cent of students are aware of digital payment methods and their source of awareness is their friends as highlighted by the RBI Pilot survey on "Retail Payment Habits in India". Thus, an attempt is made to study the demographic profile, preferred Mobile Payment applications, Usage, and barriers faced while using mobile payment applications of University students.

**Keywords:** Digital payments, mobile payment applications, mobile payment penetration rate, mobile payment adoption rate, barriers

### Introduction

India has experienced robust digital transformation and empowerment through initiatives like Digital India (2015) which focused on faceless, paperless and cashless digital transactions. Adding to this transformation, Demonetization (2016) and Covid-19 have compelled people to opt for digital payment methods. Although both these two major phases have put limitations on people's lives but have transformed the way people do financial transactions. India has set the stepping stone for conducting digital transactions by setting up of National Payment Corporation of India in 2008 which acts as an umbrella organization for various payment and settlement systems and by launching a plethora of digital payment products like IMPS (2010), AEPS (2011), UPI (2016), BHIM (2016) and UPI 2.0 (2018) etc. These products reach a wider customer base than the financial products delivered by the traditional brick-and-mortar model. India has an internet penetration of 45 per cent in 2021 (www.statista.com) and people accessing the internet through mobile phones is 96.77 per cent (Telecom Regulatory Authority of India (TRAI), 2021). As per the IAMAI-Kantar ICUBE Report (2020), the number of active internet users are expected to increase by 45 per cent in the next 5 years and will reach 900 million by 2025. The smartphone penetration in India is 54 per cent (www.statista.com). As per NPCI-PRICE Report (2020)<sup>[19]</sup>, 79 per cent of people use mobile payment applications in India and 80% of the users are from the bottom 40 per cent of the population. The Global scenario shows that a total of

900 million new mobile payment application users have been added in 2020. According to a survey by Global Mobile Payment Market, the mobile payment market will develop at a 33 per cent annual pace and will reach \$457 billion by 2026. The various mobile payment apps like Google Pay, Phone Pay, Paytm, Amazon Pay etc. have been in access to Indian consumers and help in making payments conveniently, easily, quickly and securely. As per the RBI Annual Report (2020-21), the UPI-based transactions have witnessed a surge of 78.3 per cent amounting to Rs 4103658 cr. The Committee on Deepening Digital Payments set up by the Reserve Bank of India under the chairmanship of Nandan Nilekani (2019) recommended the internationalization of RUPAY and BHIM UPI to ease remittances in India and to help Indian travellers to make payments abroad. Punjab has an internet subscribers penetration of 90.45 per cent internet (TRAI,2021). In India initiatives like Digi Shala (Free Door Darshan channel) and digital Jagriti (Common Service Centre) have been set up to promote awareness regarding digital payments. The Union Budget 2021 set aside Rs 15 billion for schemes that incentivize digital payments. The Ministry of Electronics and Information Technology has decided to celebrate Digital Payment Utsav from 5th Dec 2021 to 5th March 2022 to promote digital payments in India. Such initiatives by the government will pave the path for the common man to use and become part of the digital and cashless economy. The above facts highlight all the favourable parameters contributing to digital payments.

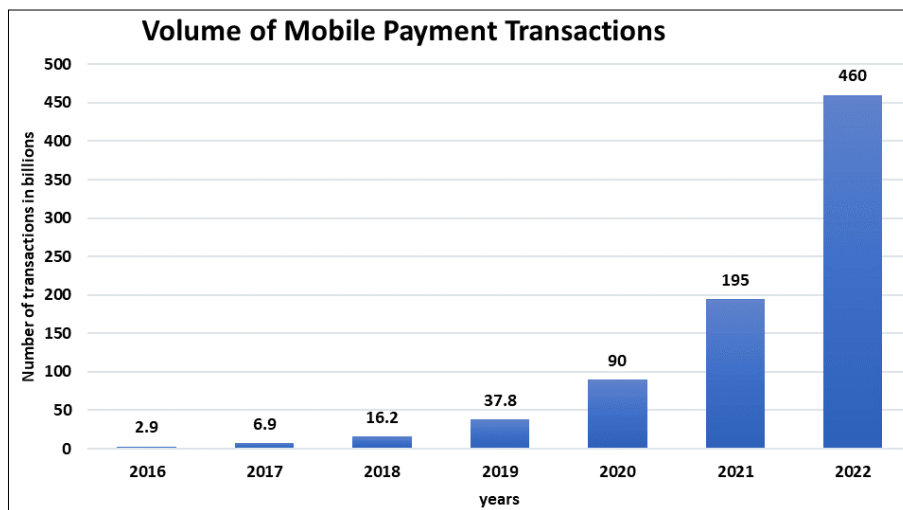


Source: e-Marketer, Y stats

Fig 1: Mobile phone payment adoption by country 2022

India has an adoption rate of 40.10 per cent which puts India on the 5<sup>th</sup> spot in the world. Digital India, Demonetization and the COVID-19 pandemic have given a major boost to contactless payments in India. The better penetration of smartphones and mobile internet has provided a major surge to mobile payment applications in India. The availability of smartphones, access to the internet and low-cost mobile data plans have accelerated the pace of adoption and deepened

the usage of various digital payments. The increased stress by the leading institutions for contactless payments has boosted M-payments. As per Redseer Consulting Report, 2022 Mobile payments in India will surge 5 times from the current 16 crores to 80 crores. India’s Mobile Payment Segment will drive 3.5 per cent of total digital payments of Rs 7092 lakh crore by the Financial year 2025 (Consumer News and Business Channel (CNBC), 2022).



Source: Statista 2022 [25, 28]

Fig 2: The volume of Mobile Payment Transactions Across India (Volume billion)

There has been a significant surge in digital payments in India. The analysis from the year 2016 to 2022 highlights that there has been a 159 times increase in the volume of mobile payment transactions. This period is very crucial as major initiatives like demonetization and pandemic like COVID-19 has occurred during this period. These both have acted as catalysts to boost M-payments.

The report titled “Digital Payments in India: A \$10 trillion opportunity” released by PhonePe Pulse and Boston Consulting Group (2021) highlighted that India’s digital payments will increase to \$10 trillion by 2026 from the current \$3 trillion. The report further highlighted that 2 out of 3 payments will be non-cash by 2026. Digital payments will capture 65 per cent share of total payments by 2026.

**Review of literature**

(Bezhovski, 2016) [3] examined the different online payment options and consumer acceptance of electronic and mobile payment systems. It was determined that utilizing cutting-edge technology, such as radio bar-codes that allow radio signals to be sent out to locate the objects, can safeguard the future of this payment method. The numerous reasons that have both good and negative effects on the adoption of this payment mechanism were also explored. The danger of security breaches, data theft, fraud, and other issues that must be addressed in order to grow the use of mobile payment methods were discovered to be the major cause of worry.

(Brid, Chandran, & Agrahari, 2017) [5] in their paper “Study of Mobile Banking Applications Usage in various sectors of

India” used convenience sampling to collect data from 500 respondents working in various sectors. The results of the percentage analysis highlighted that mostly private employees and students use these applications. Paytm application is used by the maximum number of respondents. (Vally & Divya, 2018)<sup>[36]</sup> conducted a study on the adoption of digital payments by consumers. The data was collected from 200 respondents from Hyderabad. Both the primary and secondary sources of data were used in the study. The results of the Percentage analysis Chi-Square analysis highlighted that age and education have a significant relation with the adoption of digital payments but income does not have a significant relation with the adoption of payments.

(Khan & Jain, 2018)<sup>[13]</sup> conducted an online survey in which 100 participants took part. This was done in order to learn more about what motivates customers to make online purchases, what categories of products and services they like to utilize, and which payment services they most frequently use. More security mechanisms, such as biometric verification using a fingerprint or retina scan, artificial intelligence, etc., were found to be necessary. This will boost the trust and confidence of more and more customers in this sector.

(Kumar, 2019) in his study titled “An Empirical Study on Adoption of Digital Payments Among Students of Delhi University” studied the trends and preferred mode of digital payment, initiatives by the government, usage and satisfaction among students pursuing graduation and post-graduation students. The data was collected from 119 students using the convenience sampling method. The results of the Chi-square test and ANOVA highlighted that e-wallet is the most preferred digital payment method. Male respondents are more comfortable with digital payments. Time-saving, convenience and rewards motivate the respondents to use the payments but the security and additional charges act as a barrier to digital payment usage.

(Sarika & Vasantha, 2019)<sup>[21]</sup> found that the demonetization contributed to an increase in the widespread use of digital payment methods. Further, security is a significant reason for fear expressed, therefore it is necessary to increase the security features in order to acquire clients' confidence and expand this business system.

(Singh, 2019)<sup>[30]</sup> examined the evolution of mobile e-wallets as a new digital payment technology that will lead to a cashless society. Digital wallets are the most convenient and straightforward approach to implement the changes in everyday payments and transactions. According to research, individuals are using e-wallets to recharge their phones and DTHs, as well as to purchase cinema tickets, bill payments, money transfers, and so on. E-wallets are the most efficient, secure, and easy solution of electronic payment. That is the primary reason for the adoption of these technologies and digital India.

(Vidya. S, 2019)<sup>[38]</sup> examined various digital wallets on the basis of cash-back rewards, and payment systems. It was determined that the BHIM app enables users to conduct transactions without an internet connection. Both Phone Pe and Paytm offer wallet functionality along with a variety of additional features. A safe app for making rapid local payments is Google Tez.

(Tripathi & Dixit, 2020)<sup>[34]</sup> in their study “A Study on Adoption of Digital Payment through Mobile Payment Application with Reference to Gujarat State” used a sample

of 100 respondents selected through convenience sampling. The main aim of the study was to find demographic factors, reasons, usage, preferred mode and barriers faced while using mobile payment applications. The results of the percentage analysis stated that convenience, cash-back rewards and time-saving as the exciting features of these applications. The prominent barrier faced in using these applications is transaction charges.

(Veeraraghavan, Mohanty, Dutta, & Paidisethi, 2021)<sup>[37]</sup> in their paper titled “Study on the Usage of Mobile Payment Applications in India” used the quota sampling technique to select 87 respondents. The results of the percentage analysis highlighted that there is a lack of awareness among people in rural areas. Google Pay and Phone Pay was the most preferred application. Convenience and Cash back rewards are the major reasons for using these applications and frauds prevent the respondents from using these applications.

(Shree, Pratap, Saroy, & Dhal, 2021)<sup>[27]</sup> conducted a study considering 640 people who were contacted through an online survey on social media platforms. The results of the regression analysis revealed that age, gender and income play an important role in the usage of digital payments. The perception of digital payments plays an important role in the adoption of payments.

(Agrawal, Malik, Mishra, & Paul, 2021)<sup>[2]</sup> The research investigated the numerous opportunities created in the payment space, which leads to technological progress. Descriptive statistics and the ANOVA approach were used to examine the data. The major goal is to transition from a cash-based economy to one that is cashless. There is no statistically significant difference depending on age, gender, profession, education, or income.

(Kohli & Kaur, 2022)<sup>[11]</sup> highlighted in their descriptive study based on secondary data. The study demonstrated that shopping through mobile phones has become popular in India. The better internet connections and smartphone penetration is the major driving force but the security issues need to be well addressed.

### Objectives of the study

1. To study the demographic profile of the respondents.
2. To study the purpose of usage of mobile phone payment applications among University students.
3. To find out the most preferred mobile payment application among University students.
4. To study the barriers faced while using mobile payment applications.

### Research methodology

#### Nature of study

The study is descriptive in nature and based on both primary and secondary sources of data. The study describes the demographic profile, usage of payment applications, most preferred payment applications and barriers faced while using these payment applications. The questions have been adapted from the (Tripathi & Dixit, 2020)<sup>[34]</sup> study on the adoption of digital payments in Gujarat state.

#### Sampling

The students pursuing Graduation, Post-Graduation and PhD in Commerce from Punjabi University, Patiala were considered as the sampling unit for the study. A total of 150 students were considered for the study. The students were selected using the purposive sampling technique.

**Data analysis and interpretation**

**Table 1:** Demographic profile of the respondents

Factors	Classification	Frequency	Percentage Analysis %
Gender	Male	36	24%
	Female	114	76%
Education	Graduation	72	48%
	Post- Graduation	66	44%
	Doctorate of Philosophy	12	8%
Marital Status	Married	20	13.3%
	Unmarried	130	86.7%
Residence	Rural Area	70	46.7%
	Urban Area	80	53.3%
Annual Family Income	50,000-100,000	58	38.7%
	100,000-150,000	36	24%
	150,000-200,000	30	20%
	Above 200,000	26	17.3%

Source: Based on primary data

Table 1 highlights the demographic profile of the respondents. The percentage analysis highlighted that 76 per cent are females and 24 per cent are males. 48 per cent of respondents are graduates, 44 per cent are postgraduates and 8 per cent of respondents are pursuing a doctorate. The majority of respondents are unmarried. The majority, 53.3 per cent of the respondents belong to rural areas. The majority 38.7 per cent of the respondents fall in the income bracket of 50,000- 100,000 and only 17.3 per cent of the respondents have family income above Rs 200,000.

**Table 2:** Source of Awareness for using mobile payment applications

Source of Awareness	Frequency	Percentage
Television	22	14.7%
Friend	120	80%
Newspaper	8	5.3%
Total	150	100%

Source: Based on primary data

Table 2 highlights that the majority 80 per cent of the University students’ source of awareness is their friends. 14.7 per cent of the respondents rely on television to enhance their knowledge about mobile payment applications and newspaper is the source of awareness for only 5.3 per cent of the University students. The students during their graduation and post-graduation levels are close to their friends, they spend a major part of the day with their friends. It indicates that the friend circle has a major impact on students. They try to grab information regarding new technologies like shopping websites, digital games, and new digital payment methods from their friends. The adoption of new payment applications also depends on whether their friends use that method or not. It also increases their trust factor for such payment methods. They also have comfort while using new payment applications with their friends as they are at the same stage of usage and can gain practical knowledge regarding the operation of such technologies in a better way. The RBI pilot survey Report titled “Retail Payments Habits in India- Evidence from Pilot Survey” highlighted that 98.1 per cent of students are aware of the digital payment methods across other professions and their major source of awareness is their friends (Bhuyan, Roy, & Priyadarshi, 2021) [4]. The young generation is impatient,

they try to grab information at a faster rate which is served to them through their personal interactions with their friends and social networking websites. This might be the probable reason for the low preference for newspapers.

**Table 3:** Motivation to start using the mobile payment applications

Motivation for usage	Frequency	Percentage
Demonetization	53	35.3%
Covid -19 Pandemic	97	64.7%
<b>Total</b>	<b>150</b>	<b>100%</b>

Source: Based on primary data

Table 3 highlights that the major source of motivation to start using mobile payment applications is Covid 19 as stated by 64.7 per cent of University students. Covid 19 has provided a major surge in digital payments. Demonetization has acted as a stepping stone for digital payments but Covid-19 has compelled people to start using these payment applications. During Covid-19 leading institutions like the World Health Organization and the Reserve Bank of India have stressed on contactless payments. As per S&P Global Market Intelligence India’s mobile payment transactions grew 163 per cent to 287 billion in 2019 when COVID-19 gave its first presence (How The Global Pandemic Fast Tracked Mobile Payments In India, 2020) [9] Amid Covid-19 major grocery purchases, amount transfers, doctor’s consultation fee, school and college fees were paid through digital payment mechanisms thus providing a major boost to online payment applications. People became more aware of digital payments during Covid-19 which gave a major boost to these payment applications.

**Table 4:** Frequency of usage of mobile payment applications to make digital payments

Frequency of usage	Frequency	Percentage
Daily once	22	14.7%
Daily several times	18	12%
Weekly once	14	9.3%
Weekly several times	17	11.3%
Monthly once	16	10.7%
Monthly several times	13	8.7%
Occasionally	50	33.3%
Total	150	100%

Source: Based on primary data

Table 4 highlights that only 12 per cent of University students use mobile payment applications for making payments daily several times. The majority 33.3 per cent of the respondents use mobile payment applications occasionally because the students are majorly dependent on their family income, they do not have a personal fixed source of income.

**Table 5:** Most preferred mobile payment application among University students

Mobile payment applications	Ranking
Google Pay	1
Paytm	2
Phone Pay	3
Bhim application	4
Amazon Pay	5
Pay Pal	6
WhatsApp Pay	7

Source: Based on primary data

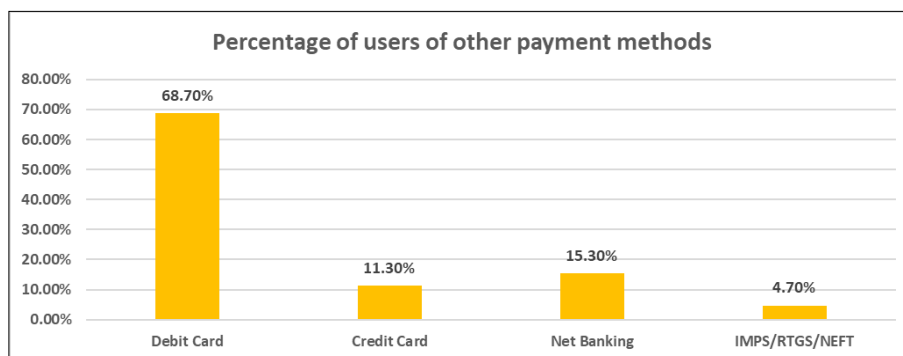
For finding out the most preferred payment application among University students, the ranking method was used in which a rating of 1 means the most preferred and a rating of 7 means the least preferred application. From Table 5 it is clear that Google Pay is the most preferred payment application followed by Paytm and Phone Pay. 59.23 per cent of the digital payments are done through Google Pay alone making it the most preferred payment system for P2P and P2M payments (Amae, 2021) [1]. The least preferred application is WhatsApp Pay. The probable reason for the high ranking of Google Pay is the trust factor attached to Google. The reasons for the low usage of WhatsApp Pay as stated by students is a lack of awareness and security threat.

**Table 6:** Usage of mobile payment applications for various transactions

Transactions	Frequency	Percentage
Recharges	85	56.7%
Shopping	31	20.7%
Payment for fuel	4	2.7%
Bills Payment	22	14.7%
Ordering for food	8	5.3%
Total	150	100%

Source: Based on primary data

Table 6 highlights that 56.7 per cent of the respondents use mobile payment applications for recharge purposes followed by shopping (20.7 per cent), and bill payment (14.3 per cent). The rest 8 per cent of the respondents use these applications for fuel payment and food ordering. Maximum students use mobile payment applications for recharge purposes. To assess the mobile payment applications internet is the basic requirement which can be assessed only when recharge is done. The Internet has become a necessity



Source: Based on Primary Data

**Fig 3:** Other Payment Methods Used by the Students

The Debit card is the most preferred mode of Payment after Mobile payment applications. Figure 3 highlights that 68.7 per cent of the students use a Debit Card, and 15.3 per cent of the respondents use Net Banking. 16 per cent use the Credit Card and RTGS/NEFT/IMPS. The Debit cards are easy to operate. More usage of credit cards can impose risk on students and can lead them into the debt trap. A study titled “Student’s Credit, Debit and Mobile Payment Statistics” highlighted that students’ second preference after mobile payments is the usage of Debit cards which is preferred by 85 per cent of college students (Porche, Mihocik, & Holmes, 2021) [20].

since the onset of the pandemic for assessing online learning through applications like Zoom, Google Meets etc. The recharge for assessing the internet is the main purpose behind using such payment applications.

**Table 7:** Reasons for using Mobile Payment Applications

Reason for usage	Frequency	Percentage
Convenience	64	42.7%
Time-Saving	62	41.3%
Cash Back Rewards	6	4%
Detailed record of transactions	10	6.7%
Viewing account balance	1	0.7%
Less risk of theft	7	4.7%
<b>Total</b>	<b>150</b>	<b>100%</b>

Source: Based on primary data

Table 7 highlights that convenience is the most prominent reason for using mobile payment applications as stated by 42.7 per cent of the respondents. Similar, results have been highlighted in a survey conducted on college students in the U.S. where 70 per cent of the students highlighted convenience as the primary reason for using mobile payment applications (Statista, 2022) [25, 28]. 41.3 per cent of University students use such applications to save time. Only 0.7 per cent of the students use payment applications for viewing account balances. Rest 15.4 per cent of students use these applications for viewing detailed records of transactions, due to less theft risk and for getting cash back rewards. The penetration of smartphones and the internet has made payment applications easily accessible. The installation of systems at the shops has granted convenience in usage as payment can easily be made by scanning code. It is very easy to make payments of loose money. Students are tech-savvy they find these applications easy to operate and they save their precious time for other productive tasks.

**Table 8:** Barriers faced while using the Mobile Payment Applications

Barriers	Frequency	Percentage
Chances of fraud	54	36%
Transaction Charges	13	8.7%
Refund issues	17	11.3%
Network issue	66	44%
Total	150	100%

Source: Based on Primary data

Table 8 highlights that the most prominent barrier faced while using such payment applications is network issues as stated by 44 per cent of the students. These results are similar to the (Tripathi & Dixit, 2020) [34] study conducted

on mobile payment adoption among youth in Gujarat state. Chances of fraud is a major barrier faced by 36 per cent of the respondents. Another 20 per cent of students highlighted the transaction charges and refund issues as barriers in using payment applications. The network issues are the most uncertain barrier which can occur at any time. The online payment mechanisms are prone to various online security threats which make students reluctant to use these payment applications.

### Conclusion

Mobile payments have added a new option for customers to make payments effortlessly and in less time. Various interactive features of these payment applications like cash-back rewards, instant transfers, and detailed records of transactions have attracted the youth to these payment applications. With the touch of a finger, one can make hassle-free transactions. The user-friendly interface of payment applications helps users to handle the payment easily. India has experienced a robust digital revolution in the last decade. In our study, it is highlighted that the proportion of females using digital payments is more than men. The various initiatives like Jan Dhan Yojana and Direct benefit transfer come as a welcoming step in empowering women. The urban graduates mostly use these applications. Covid-19 has accelerated mobile payments and the same is highlighted in our study. Google Pay is the most preferred application. Recharges are mostly done by the students by using these applications. Convenience in utilizing these applications excite the students but network issue and frauds deter the smooth usage.

### Implications of the study

Mobile payments have revolutionized the way business is conducted. The present study highlights the various aspects of digital payment adoption among university students. The current research will help policymakers and cyber experts to develop a proper framework to build the trust of the youth in digital payment applications. There is a dire need to create awareness among the youth through proper channels like advertisements and workshops targeted at the pros and cons of digital payment applications. Online courses targeted at imparting practical training to masses from all fields need to be launched to promote the usage by tackling their fear. Developing user-friendly interfaces with access in native languages can go a long way in facilitating secure mobile payments. It is highly imperative that proper security layers, cyber cells, laws and redressal mechanisms related to financial fraud need are addressed at the earliest.

### References

1. Amae M. Here is how Google Pay UPI becoming the preferred payment method in India. Retrieved from Collateralized Debt Obligation Business, 2021. <https://www.cdobiz.com/here-is-how-google-pay-upi-becoming-the-preferred-payment-method-in-india.html>
2. Agrawal K, Malik S, Mishra DK, Paul D. Moving from Cash to Caseless economy: Towards Digital India. *Journal of Asian Finance and Economics*, 2021, 43-54.
3. Bezhovski. The Future of Mobile Payment as Electronic Payment System. *European Journal of Business and Management*, 2016, 8(8).
4. Bhuyan P, Roy J, Priyadarshi RR. Retail Payment Habits in India- Evidence from a Pilot Survey. RBI

Bulletin, 2021, 183-192. Retrieved from [https://www.rbi.org.in/Scripts/BS\\_ViewBulletin.aspx?Id=20205](https://www.rbi.org.in/Scripts/BS_ViewBulletin.aspx?Id=20205)

5. Brid S, Chandran P, Agrahari K. Study of Mobile Banking Application usage in various sectors of society. *International Journal of Scientific and Engineering Research*, 2017;8(5):33-36.
6. Curry D. Mobile Payments App Revenue and Usage Statistics, 2022. Retrieved from [Businessofapps.com: https://www.businessofapps.com/data/mobile-payments-app-market/](https://www.businessofapps.com/data/mobile-payments-app-market/)
7. Economic Times. 88% of Indian consumers use mobile devices to make purchases or pay online: PayPal report. <https://brandequity.economictimes.indiatimes.com/news/digital/88-of-indian-consumers-use-mobile-devices-to-makepurchases-or-pay-online-paypalnreport/72182209> (accessed 18 April, 2020)
8. Faqih KMS, Jaradat MIRM. Assessing the moderating effect of gender differences and individualism-collectivism at individual-level on the adoption of mobile commerce technology: TAM3 perspective. *Journal of Retailing and Consumer Services*, 2015;22:37-52. <https://doi.org/10.1016/j.jretconser.2014.09.006>
9. Fishbein, M., & How The Global Pandemic Fast Tracked Mobile Payments In India. 2020. Retrieved from [PYMNTS.com: https://www.pymnts.com/news/international/2020/pandemic-accelerating-india-move-to-mobile-payments/](https://www.pymnts.com/news/international/2020/pandemic-accelerating-india-move-to-mobile-payments/)
10. Hindu Business Line. Mobile payments surpass credit cards in 2021 Retrieved from [The Hindu Business Line, 2021. https://www.thehindubusinessline.com/money-and-banking/mobile-payments-surpass-credit-cards-in-2021-report/article37209311.ece](https://www.thehindubusinessline.com/money-and-banking/mobile-payments-surpass-credit-cards-in-2021-report/article37209311.ece)
11. Kohli HK, Kaur R. Mobile Commerce: Digital Market, Digital Goods and Digital Security. *ANVESAK*, 2022;52(4):94-98.
12. Kristina N, Harris I. The Technology Acceptance Model of Mobile Payment Usage on Generation Z. *Binus Business Review*, 2020;11(3):149-156.
13. Khan, Jain. A Study on Usage of e-Payments for Sustainable Growth of Online Business. *IOSR Journal of Business and Management (IOSR-JBM)*, 2018, 74-81.
14. KPMG report. Fintech in India- powering mobile payments, 2019. <https://assets.kpmg/content/dam/kpmg/in/pdf/2019/08/Fintech-in-India- Powering-mobile-payments.pdf> (accessed 19 April, 2020)
15. Malhotra S. Mobile Payment users in India to surge 5 times by FY25, 2020. Retrieved from [www.cnbctv18.com: https://www.cnbctv18.com/finance/mobile-payments-users-in-india-to-surge-5-times-by-fy25-report-6720831.htm](https://www.cnbctv18.com/finance/mobile-payments-users-in-india-to-surge-5-times-by-fy25-report-6720831.htm)
16. Madan, Yadav. "Behavioral Intention to adopt mobile wallet: a Developing country perspective", *Journal of Indian Business Research*, 2016;8(3):227-244. © Emerald Group Publishing Limited 1755-4195, DOI 10.1108/JIBR10-2015-0112
17. Nair R. In focus: India's digital payment revolution, 2022. Retrieved from [time snow news website: https://www.time.com/time/news/6048441/](https://www.time.com/time/news/6048441/)

- <https://www.timesnownews.com/business-economy/industry/in-focus-indias-digital-payments-revolution-article-92028237>
18. NASSCOM. India Digital Payments: 2020 Country Adoption Report, 2022. Retrieved from <https://community.nasscom.in/communities/digital-transformation/india-digital-payments-2020-country-adoption-report>
  19. NPCI. Digital Payment Adoption In India-2020. NPCI-PRICE, 2020. Retrieved from <https://www.npci.org.in/PDF/npci/knowledge-center/Digital-Payment-Adoption-in-India-2020.pdf>
  20. Porche B, Mihocik C, Holmes TE. Credit cards.com, 2021. Retrieved from <https://www.creditcards.com/statistics/student-credit-debit-prepaid-statistics>.
  21. Sarika P, Vasantha S. Impact of Mobile Wallets on Cashless Transaction. *International Journal of Recent Technology and Engineering (IJRTE)*, 2019, 7(6S5).
  22. Pal A, Herath T, De' R, Raghav Rao H. Why do people use mobile payment technologies and why would they continue? An examination and implications from India. *Research Policy*, 2021;50(6):104228. <https://doi.org/10.1016/j.respol.2021.104228>
  23. Riquelme HE, Rios RE. The moderating effect of gender in the adoption of mobile banking. *International Journal of Bank Marketing*, 2010;28(5):328–341. <https://doi.org/10.1108/02652321011064872>
  24. Rongala SRD, Kohli M. The Future of Payments How current technologies will evolve in the coming years, 2019. <https://worldline.com/content/dam/worldline/documents/India/documents/wl-india-digital-payments-q2-report.pdf> (accessed 19 April, 2020) 2020-21. Reserve Bank of India Annual Report. RBI.
  25. Statista. Number of mobile payment transactions across India from 2016-2022(in billions), 2022. Retrieved from [Statista.com: https://www.statista.com/statistics/731502/mobile-payments-transaction-volume-india](https://www.statista.com/statistics/731502/mobile-payments-transaction-volume-india).
  26. Saraswat, Mehta. Cashless Transaction: Challenges faced by the Consumers” –*International Journal of Research Culture Society*, ISSN:2436-6683, 2017, 1(10).
  27. Shree S, Pratap B, Saroy R, Dhal S. Digital payments and consumer experience in India: a survey based empirical study. *Journal of Banking and Financial Technology*, 2021;(5):1-20. doi: <https://doi.org/10.1007/s42786-020-00024-z>
  28. Statista. Primary reasons for using mobile payments according to college students in the United States in 2015., 2022. Retrieved from [statista.com: https://www.statista.com/statistics/527231/mobile-payment-reasons-student/](https://www.statista.com/statistics/527231/mobile-payment-reasons-student/)
  29. Suneel K. An Empirical Study of Adoption of Digital Payments Among Students of Delhi University. *Journal of IMS Group*, 2019;16(01):71-84. Retrieved from <http://www.publishingindia.com>
  30. Singh G. A Review of Factors Affecting Digital Payments and Adoption Behaviour for Mobile e-Wallets. *International Journal of Research in Management & Business Studies*, 2019, 89-96.
  31. Tan GWH, Ooi KB, Chong SC, Hew TS. NFC mobile credit card: The next frontier of mobile payment? *Telematics and Informatics*, 2014;31(2):292–307. <https://doi.org/10.1016/j.tele.2013.06.002>
  32. Tak P, Panwar S. Using UTAUT 2 model to predict mobile app based shopping: evidences from India. *Journal of Indian Business Research*, 2017.
  33. Taylor D, Voelker T, Pentina I. Mobile application adoption by young adults: A social network perspective, 2011. [http://digitalcommons.sacredheart.edu/wcob\\_fac/1](http://digitalcommons.sacredheart.edu/wcob_fac/1) (accessed 17 April, 2020).
  34. Tripathi S, Dixit P. A study on the adoption of digital payment through mobile payment application with reference to Gujarat state. *International Journal of Trend in Scientific Research and Development*, 2020;4(3):1110-1115.
  35. Times of India. Explained: How is outpacing the world in digital payments, 2021. Available at [http://timesofindia.indiatimes.com/article/eshow/88580555.cms?utm\\_source=content&utm\\_medium=text&utm\\_campaign=cppst](http://timesofindia.indiatimes.com/article/eshow/88580555.cms?utm_source=content&utm_medium=text&utm_campaign=cppst) (accessed 10/05/22)
  36. Vally K, Divya K. A study on digital payments in India with perspective of customer's adoption. *International Journal of Pure and Applied Mathematics*, 2018;119(5):1259-1268.
  37. Veeraraghavan R, Mohanty S, Dutta S, Paidisethi V. Study on the usage of digital payment applications in India. *International Journal of Accounting and Financial Management Research*, 2021;11(2):33-38.
  38. Vidya S, Rajan Kumar, Md. ShafiqueZiya. Comparative Study and Analysis of E-Wallets. *International Journal of Scientific Research and Review*, 2019, 07(05).
  39. Worldline India. UPI most preferred digital payment mode among consumers, 2021. Retrieved from [Times of India.Indiatimes.com: https://timesofindia.indiatimes.com/business/india-business/upi-most-preferred-digital-payment-mode-among-consumers-worldline-india/articleshow](https://timesofindia.indiatimes.com/business/india-business/upi-most-preferred-digital-payment-mode-among-consumers-worldline-india/articleshow)
  40. Wong C, Tan GW, Ooi K, Lin B. Mobile shopping: the next frontier of the shopping industry? An emerging market perspective. *International Journal of Mobile Communications*, 2015;13(1):92–112.