

Digital Transformation Through UPI: A New Era of Payments in India

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ABSTRACT

Since more than 20 years, Indian banks have been committed to providing a wide range of services by using several electronic networks, including mobile banking, automated teller machines, and digital payments. The Unified Payments Interface (UPI), which was first introduced in 2016 as a real-time instantaneous payment and settlement system, currently makes up a whopping 47% of India's retail clearing and settlement systems. This has inspired the researchers to conduct a study on various UPI transactional parameters, such as user awareness, satisfaction, problems users encounter, and how long it takes to resolve those problems. In order to achieve this, a descriptive research design has been used, and 119 samples have been gathered using a structured questionnaire. To collect the samples, convenience sampling was used. Among the 119 respondents, 86% were aware of UPI as a form of electronic payment. Among the various digital payment methods, the UPI was chosen as the top option by 31% of respondents. The chi-square analysis showed a significant correlation between respondents' ages and their level of satisfaction with using UPI. According to the One-way ANOVA results, there has been a significant shift in the respondents' age clusters regarding how frequently they use UPI. Researchers have suggested that in order to increase the adoption of UPI across the country, regulators must both ensure the cyber security of UPI and take the necessary steps.

Keywords: Financial Intermediation, Digital Payments, Unified Payments Interface, Electronic Payments

I. Introduction

All of the country's citizens, from rickshaw drivers to wealthy businessmen and government officials, have incorporated banking as a process or service and a place into their daily lives. The bank has evolved into a vehicle for distributing financial benefits to all parties involved, including subsidies, interest payments, incentives, etc. In India, banking has been a key tool for promoting financial inclusion. Banking has changed over the years, and the most recent iteration is referred to as modern banking. Every discipline must change to keep up with the expanding population, transaction volume, etc. This includes the banking sector. Making the banking sector, the RBI, and other important financial institutions digital is crucial to serving the larger community. Significant changes were made to it by organisations. Changes made since 1991 include NEFT, RTGS, IMPS, and core banking. Similar to that, the Unified Payment Interface (UPI) represents a significant turning point for the banking industry. It is a mobile banking tool that allows users to electronically send and receive money from and into their accounts using their smart phones. People were reluctant to use UPI at first, just like they would be with any new tool, but now it processes 10 billion transactions per month. This study aims to identify the user-friendliness, consciousness usage, and other issues that UPI users may encounter. The study made use of both recent and old data. This was covered in great detail in the research methodology section.

II. Review of literature

Fahad (2022) Fahad et al. analyzed the UPI, India's advanced mobile payment system, highlighting its value for customers and banks due to its availability, efficiency, ease of use, and transparency. Despite the rapid growth of internet and smartphone users, UPI adoption has lagged. This study shifts focus from operations to factors influencing UPI adoption, usage, and recommendation, using the Diffusion of Innovation (DOI) theory. Results indicate that relative advantage, complexity, and observability positively affect users' intention to adopt UPI. Additionally, higher usage intention and satisfaction correlate with greater likelihood of recommending UPI. The model offers insights into factors driving UPI adoption and recommendations.

Mohammad Imdadul Haque et al. (2022) examined the Unified Payments Interface (UPI), a transformative digital payment system in India, highlighting its potential to bridge the digital divide and drive economic growth through financial inclusion. Using logistic regression on primary data from rural Aligarh, the study identified key predictors of UPI adoption: younger age, male gender, higher education, specific occupations, and higher income, while caste, religion, JDY accounts, and marital status were insignificant. The findings emphasize the need for financial literacy programs, gender-specific initiatives, youth engagement, and incentives for low-income groups to enhance UPI adoption in rural areas.

Rudresha C.E (2019) Digital a nation is a financial structure in which there is a nearby small or very low-slung cash movement in a society and where purchases of goods and services as well as funding of funds are made electronically. Dealings in the "Digital Nation" are carried out via debit cards, credit cards, e-wallets, checks, or direct transfers from one version to another via e-banking. The government of India claims that digital transactions will take advantage of opportunities for service in thriftiness and avoid cash-related theft, thereby lowering the risk of keeping somatic cash. Digital transactions will also reduce cash-related fraud and attract more foreign investment. The study focuses on how digital transactions are perceived and conducted in India. The researcher also examines the benefits and limitations of the digital nation to the common civic.

Rajat Rajesh e t al (2020) Transparent and irrevocable, digital transactions and payments. This gives customers a way to develop trust in the digital payments system. India is the second-most populous nation in the world, so it's important to consider the setup of digital payment systems that are currently in place as well as how users have responded in terms of the volume of transactions that have been settled. This essay discusses the evolution of digital transactions and the various types of digital payment systems in India. The impact of the demonetization of 500- and 1,000-rupee notes on the growth of digital payments in India is depicted in the paper. The amount of recent transactions made using digital methods is examined in the paper. The challenges and effects of COVID-19 on digital payment systems are discussed in the paper's conclusion.

III. Research Methodology

The study used both a descriptive and analytic research design. For the research project, both recent and published data were used. Primary data were gathered using convenience sampling. Secondary information was gathered from a number of websites. Based on the standard table, a sample size of 383 was chosen. Based on the respondents' response rate, only 119 of the 383 surveys were useful. The purpose of the structured questionnaire was to gather first-hand information. For this, Google forms were utilised. The study employed simple percentage analysis, chi square, ANOVA, and multivariate methods. The data were collected over the course of a year.

Objectives of the study:

- To Ascertain Respondents' Knowledge Of UPI
- To Investigate UPI's Motivation
- To Determine The Volume Of Transactions And Usage Frequency
- To comprehend the issues respondents had using UPI and how long it took to fix those issues
- To make suggestions for ways to enhance the UPI

Hypotheses of the study:

Ho: The level of awareness of UPI does not significantly differ between age groups that are different from one another.

Ho: There is no discernible difference in the maximum number of UPI transactions carried out among different yearly income levels.

Ho: There is little difference in the level of UPI awareness across a range of educational backgrounds.

Ho: When it comes to the frequency of UPI usage, there are no appreciable differences between age groups.

IV. Results and Discussion

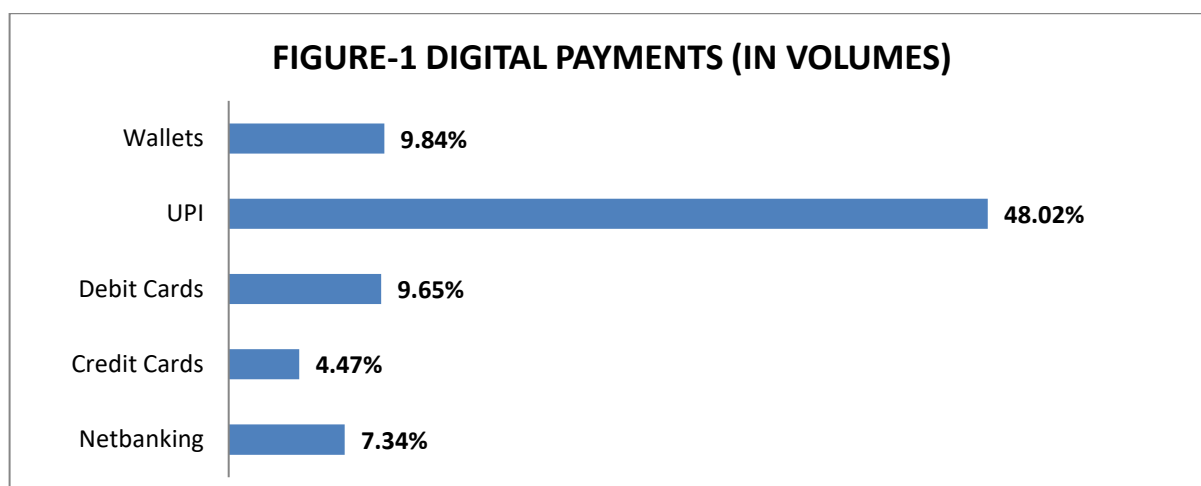


Figure 1. shows that among the various digital payment tools, UPI has been the most popular with 48 percent, followed by debit cards with 9.65 percent of the total volume of digital payments in 2022–23. During the years 2022–2023, credit cards made up 4.47 percent of the total amount of digital payments.

Table 1. Demographic Profile of the Respondents

Variables	Options	Percentage of the Frequency
Gender of the Respondents	1.Male	74
	2. Female	26
Age of the Respondents	1.Less than 20 years	7.6
	2.21-30	32.9
	3.31-40	16.6
	4.41-50	36.1
	5.Above 50 Years	6.7
Education of the Respondents	1.School Education	1.7
	2.UG	18.3
	3.PG	62.3
	4.Professional Education	15.1
	5.Others	2.5
Annual income of the respondents	1.Below 1 Lac	16.8
	2.1 lac – 3 lac	23.7
	3.3 lac – 5 lac	23.5
	4.5 lac – 10 lacs	25.1
	5.Above 10 lacs	10.9

Source: Data collected through questionnaire

Table 1 shows that out of 119 respondents, men made up the majority (74%) of the group. The age group of users between the ages of 41 and 50 made up 36%. Further observation revealed that the majority of respondents' (62.3%) educational background was PG. Between Rs. 5 lac and Rs. 10 lac was the annual income range for more than 25% of the respondents.

Table 2. Ranking of Different Digital Payment Mode

Digital Payment Mode	Order of Choices(in%)				
	First Choice	Second Choice	Third Choice	Fourth Choice	Fifth Choice
Debit Card	29.09	35.96	35.00	17.11	14.29
Net Banking	27.43	29.82	23.00	26.32	22.86
UPI	31.97	21.93	14.00	6.58	11.43
Wallets	1.77	4.39	6.00	18.74	29.57
Credit Card	9.73	7.89	22.00	31.26	21.86
Total	100	100	100	100	100

Source: Data Collected from questionnaire

Table 2 shows that among the various digital payment methods, the UPI was selected as the top option by 32% of respondents. It was also discovered that among the various digital payment methods, debit cards were chosen by more than 35% of respondents as their second and third preferences. Credit cards are the fourth digital payment method that 31% of respondents prefer to use. Additionally, among the various digital payment methods, 29 percent of respondents chose wallets as their fifth preference.

Table 3. Test of Association between variables

Sl No	Variables	Chi-square p value	Level of association
1	Frequency of usage Vs Level of Satisfaction	0.465	No Significant association
2	Frequency of usage Vs Safety Level	0.378	No Significant association
3	Age of the respondents Vs Level of Awareness towards UPI	0.08	No Significant Association
4	Age of the respondents Vs Level of satisfaction towards UPI	0.01**	Significant Association
5	Education of the respondents Vs Frequency of Usage	0.631	No Significant Association

Source: Data collected from structure questionnaire Note : ** @5% level of significance

The null hypothesis has been accepted at the 5% level of significance because **Table 3** indicates that there was no significant correlation between the frequency of use of various digital payment methods and level of satisfaction with using UPI. The chi-square analysis revealed that there was no significant correlation between the frequency of UPI usage and UPI safety level, so the null hypothesis was accepted at the 5% level of significance.

The null hypothesis has been accepted at the 5% level of significance because **Table 3** shows that there was no significant relationship between respondents' ages and their level of awareness of using UPI. The null hypothesis has been rejected at the 5% level of significance because it was further determined from the chi-square analysis that there was a significant correlation between the respondents' ages and their satisfaction levels with the use of UPI. **Table 3** showed that there was no significant correlation between users' educational background and their frequency of UPI usage, so the null hypothesis was accepted at a 5% level of significance.

Table 4. Test of Relationship between variables

Sl No	Variables	Pearson Correlation Value	P Value	Level of Relationship
1	Annual Income Vs Duration of Usage of UPI	0.278	.002**	Significant Relationship
2	Annual Income Vs Maximum Amount of transaction done in UPI	0.191	.039*	Significant Relationship
3	Education level of Respondents Vs Safety level of UPI	.039	.672	No Significant Relationship

Source : Data collected from structure questionnaire Note : * denotes @5% level of significance & ** denotes @ 1% level of Significance

The null hypothesis was rejected at the 5% level of significance because **Table 4** shows a significant relationship between annual income and UPI usage duration ($r = 0.278$, $p = 0.002$). The null hypothesis was rejected at the 5% level of significance due to the significant relationship between annual income and the maximum number of UPI transactions ($r = 0.191$, $p = 0.039$). The correlation analysis showed that there was no correlation between respondents' education levels and the safety level of UPI ($r = .039$, $p = .672$), so the null hypothesis was accepted at the 5% level of significance.

Table 5. One Way ANOVA- between Selected Variables

Variables		Sum of Squares	df	Mean Square	F	Sig.
Age*Awareness Level towards UPI	Between Groups	1.952	4	.488	.785	.537
	Within Groups	68.344	110	.621		
	Total	70.296	114			
Annual Income * Maximum Amount of Transactions through UPI	Between Groups	5.095	4	1.274	3.617	.008**
	Within Groups	39.435	110	.352		
	Total	44.530	114			
Educational qualification*Awareness	Between Groups	1.528	4	.382	.611	.656
	Between Groups	1.952	4	.488	.785	.537
	Within Groups	68.344	110	.621		
Age*Awareness Level towards UPI Level to wards UPI	Within Groups	68.768	110	.625		
	Total	70.296	114			
Age*frequency of usage of UPI	Between Groups	9.761	4	2.440	2.737	.032*
	Within Groups	101.634	110	.892		
	Total	111.395	114			

Source: Data collected from structure questionnaire

Note:*denotes@5%level of significance&**denotes@1% level of Significance

According to the results of a one-way ANOVA ($F = 0.785$, $p = 0.537$), it can be seen from **Table 5** that there was no statistically significant difference between the respondents' age categories in terms of their awareness of the UPI. According to the results of the one-way ANOVA ($F=3.617$, $p = .008$), there was a significant difference between the respondents' various annual income levels in terms of the maximum number of transactions made using UPI. Table -6 further revealed that there was no statistically significant difference in the respondents' awareness of UPI across different categories of educational attainment ($F= 0.611$, $p = .656$). Regarding the respondents' age categories and the frequency of UPI usage, there was a significant difference.

V. Findings and Suggestions

Based on a frequency analysis of the responses, it was found that 87 percent of respondents were aware of UPI. 26 percent of the 119 respondents have been using UPI regularly for more than two to three years, while 23.5 percent have been doing so for three years or longer. The frequency analysis also showed that 76 percent of respondents selected Google Pay as their preferred Virtual Payment Address. Twenty percent of respondents have a daily UPI usage habit, followed by fifty percent who use it weekly. 56 percent of respondents have used UPI to the fullest extent possible, transferring between rupees.5000 and 10000 rupees. 35 percent of respondents use UPI regularly in all of the venues listed in the survey, including supermarkets, pharmacies, e-commerce sites, hotels, and textile showrooms.67 percent of respondents said that the UPI has the highest level of safety features when asked about its level of safety. 27 percent of respondents reported having connectivity problems while using the UPI, while 45% reported having problems with payments. According to 45% of respondents, any problems they had with the UPI were resolved within a day. The performance of UPI has been rated favourably by 72% of the respondents. Cash back was cited by 69 percent of respondents as the main advantage of using UPI.

The analysis suggests that the regulators must ensure the UPI's cyber security and take the necessary steps to increase the adoption of

VI. Conclusions

Indian banks have made it a priority to provide a wide range of services by utilising numerous electronic networks, including mobile banking, automated teller machines, and digital payments, for more than 20 years. The Unified Payments Interface (UPI), which was introduced in 2016 as an instant real-time payment and settlement system, currently makes up a whopping 47% of India's retail clearing and settlement systems. This has inspired the researchers to conduct a study on a variety of UPI transactional parameters, including user awareness, satisfaction, problems experienced by users, and time taken to resolve issues. A descriptive research design has been used for this purpose, and 119 samples have been collected using a structured questionnaire. The samples were collected using the convenience sampling method. Among the 119 respondents, 86% were aware of UPI as a form of electronic payment. Among the various digital payment methods, the UPI was chosen as the top option by 31% of respondents. The results of the chi-square analysis showed a significant correlation between respondents' ages and their satisfaction with using UPI. The results of the one-way ANOVA test showed that there was a significant difference in the respondents' age groups' frequency of UPI usage.

Researchers have suggested that in order to increase the adoption of UPI across the country, regulators must both ensure the cyber security of UPI and take the necessary steps.

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