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A Study on The Growth of UPI and Its Role in India's Cashless Economy and Digital Transformation

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Abstract:
This study examines the rapid growth of the Unified Payments Interface (UPI) in shaping India's cashless economy. It analyses how UPI has enhanced financial inclusion, transaction convenience, and digital literacy. The research also evaluates the challenges and opportunities of digital payment systems in fostering India's digital transformation.

Keywords:UPI, cashless economy, digital payments, financial inclusion, digital transformation, fintech.

INTRODUCTION

The Unified Payments Interface (UPI) has revolutionized the financial system of India by enabling seamless, instant, and secure digital transactions. Introduced by the National Payments Corporation of India (NPCI), UPI has made it possible for users to transfer money instantly using a smartphone without needing bank details or cash. This system has not only simplified day-to-day payments but has also played a crucial role in accelerating India's shift towards a cashless and digitally empowered economy.

In recent years, UPI has seen rapid growth with increasing user adoption across urban and rural regions. Its convenience, interoperability, and real-time processing have made it the preferred payment method for individuals and businesses. The government's digital initiatives and people's growing trust in technology have further strengthened the role of UPI in India's digital transformation journey.

OBJECTIVES

1.To study the demographic profile of UPI users.
2. To analyze the growth trend of UPI transactions in India over recent years.
3. To study the role of UPI in promoting a cashless economy.
4. To assess users' awareness and perception towards UPI-based digital payments.
5. To examine the challenges and security concerns faced by users in using UPI services.

STATEMENT OF THE PROBLEM

India is moving towards a cashless economy with the help of digital payment systems like the Unified Payments Interface (UPI). UPI has made money transfers faster, easier, and more secure. However, some problems still exist, such as low awareness, internet issues, and security concerns. Many people, especially in rural areas, still prefer cash. Therefore, it is important to study the growth of UPI and understand how it supports India's digital transformation while identifying the challenges that slow down its progress..

SCOPE OF THE STUDY

1. The study focuses on analyzing the growth and adoption of UPI in India.
2. It covers various UPI platforms such as Google Pay, PhonePe, Paytm, and BHIM.
3. The study aims to understand user perception, satisfaction, and challenges in UPI usage.
4. The findings will help to assess UPI's contribution to India's digital and cashless transformation.

RESEARCH METHODOLOGY

Research in common refers to a search for knowledge. Research methodology is a way to systematically solve the research problem. The research design indicates the steps that have been taken in the sequence they occurred.

RESEARCH DESIGN

Research design is the arrangement of conditions analyses of data in a systematic manner that aims to combine relevance to research purpose. The research study applied here is convenience sampling.

SAMPLING TECHNIQUE

The sampling technique used in this study is 'convenience sampling'. Respondents From Coimbatore were selected on the basis of convenience and comfort of the researcher to The information for this study.

SAMPLE SIZE

The sample size is certified to its nature of data collection. Data collection is based on the primary data. 50 respondents are selected from coimbatore district for the purpose of the Study. Direct questionnaires are used to survey the respondents.

SOURCES OF DATA

The data is collected in two ways;

Primary Data:Primary data are collected directly from UPI users through surveys and questionnaires. This data provides firsthand information about their demographic profile, frequency of UPI usage, satisfaction level, and challenges faced during digital transactions. Secondary Data:Secondary data are collected from existing sources such as research journals, government reports, NPCI publications, banking websites, and newspaper articles.

TOOLS AND TECHNIQUES

The tools used under for the study are

- Simple percentage method
- Chi square test

SIMPLE PERCENTAGE METHOD

A percentage analysis is used to interpret the data by the researcher for analysis and Interpretation. Through the use of percentages, the data are reduced in the standard form with Base equal to 100 which fact facilitates relative comparisons. In the percentage analysis, Percentage is calculated by multiplying the number of respondents into hundred and it is Divided by the same size.

Formula:

$$\text{Percentage} = \frac{\text{No. of .Respondents}}{\text{TOTAL RESPONDENTS}} * 100$$

CHI – SQUARE:

The chi-squared test is done to check if there is any difference between the observed value and expected value.

Formula:

Chi square formula $\chi^2 = \sum (O - E)^2/E$

LIMITATIONS OF THE STUDY

1. The study is limited to a specific geographic area and may not represent all regions of India.
2. Responses are based on the opinions of selected respondents, which may involve bias.
3. The study focuses mainly on individual users and not on businesses or financial institutions.
4. The data collected are time-bound and may change with future technological updates.

REVIEW OF LITERATURE

1. Sharma (2020) stated that the introduction of the Unified Payments Interface (UPI) has revolutionized India's payment system by promoting seamless and real-time money transfers.
2. Gupta and Mehta (2021) highlighted that UPI has become a major driver of India's cashless economy by enabling convenient, fast, and secure digital payments.
3. Nair (2022) found that the adoption of UPI has increased financial inclusion, particularly in rural areas, by simplifying digital transaction processes.
4. Karthik and Raj (2023) observed that UPI has contributed significantly to India's digital transformation by encouraging businesses and consumers to shift from cash-based to online payment modes.

OVERVIEW OF THE STUDY

The present study aims to analyze the growth and significance of the Unified Payments Interface (UPI) in promoting India's cashless economy and driving digital transformation. With the government's focus on a "Digital India," UPI has emerged as a key player in simplifying monetary transactions and fostering financial inclusion. This system has made payments easier, faster, and more transparent, thereby reducing dependency on cash. The study explores the increasing usage of UPI, the role it plays in boosting e-commerce and small business transactions, and its influence on India's economic modernization.

Furthermore, this study evaluates user awareness, satisfaction, and the security perceptions associated with UPI transactions. It examines how UPI has transformed the payment behavior of individuals and organizations, paving the way for a more technologically advanced financial ecosystem. The results of this research will provide insights into the challenges, opportunities, and future prospects of UPI in India's journey toward a cashless economy.

DATA AND INTERPRETATION

TABLE 1 : SHOWS THE AGE OF THE RESPONDENTS

S NO	PARTICULARS	N.OF RESPONDENTS	PERCENTAGE
1	BELOW 20 YEARS	15	30%
2	21-30 YEARS	26	52%
3	31-40	6	12%
4	ABOVE	3	6%
	TOTAL	50	100%

INTERPRETATION

From the above table, it is observed that the majority of respondents (52%) belong to the age group of 21–30 years, followed by 30% of respondents who are below 20 years. Around 12% of respondents fall in the 31–40 years category, and only 6% are above 40 years.

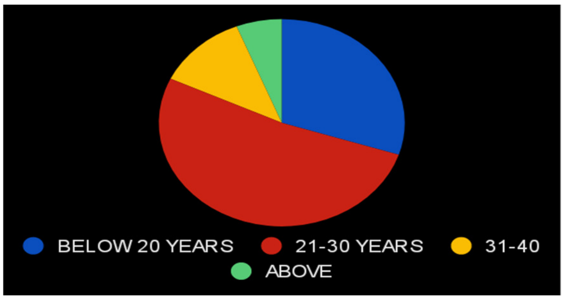

TABLE 2 : SHOWS THE USAGE OF UPI PAYMENT

S.No	PARTICULARS	NO.OF RESPONDENTS	PERCENTAGE
1	retail shop and supermarket	5	10%
2	online shopping	17	34%
3	utility bill and recharge	22	44%
4	peer to peer transaction	6	12%
	TOTAL	50	100

INTERPRETATION

From the above table, it is evident that the majority of respondents (44%) use UPI for utility bill payments and mobile recharges, followed by 34% who use it for online shopping. About 12% of respondents prefer UPI for peer-to-peer transactions, while only 10% use it in retail shops and supermarkets.

CHI-SQUARE TEST

Table 1 : Observed Frequencies for UPI Usage and Age

Age Group	Utility Bill & Recharge	Online Shopping	Peer to Peer Transaction	Retail Shop & Supermarket	Total

Below 20 years	5	8	4	2	19
21 - 30 years	13	10	3	0	26
31 - 40 years	3	0	0	2	5
41 above	1	0	0	1	2
Total	22	18	7	5	50

INTERPRETATION:
The table shows the distribution of UPI payment usage across different age groups. The majority of respondents (52%) fall into the 21 - 30 years age group. The most common use for UPI payments overall is Utility bill and recharge (44%).
H_0 (Null Hypothesis): There is no relationship between age and the primary use of UPI payments.
H_1 (Alternative Hypothesis): There is a relationship between age and the primary use of UPI payments.

O	E	(O-E)	(O-E)^2	(O-E)^2/E
5	8.36	-3.36	11.2896	1.3504
13	11.44	1.56	2.4336	0.2127
3	2.20	0.8	0.64	0.2909
1	0.88	0.12	0.0144	0.0164
8	6.84	1.16	1.3456	0.1967
10	9.36	0.64	0.4096	0.0438
0	1.80	-1.8	3.24	1.8
0	0.72	-0.72	0.5184	0.72
4	2.66	1.34	1.7956	0.675
3	3.64	-0.64	0.4096	0.1125
0	0.70	-0.7	0.49	0.7
0	0.28	-0.28	0.0784	0.28
2	1.90	0.1	0.01	0.0053
0	2.60	-2.6	6.76	2.6
2	0.50	1.5	2.25	4.5
1	0.20	0.8	0.64	3.2
	50			16.1537

RESULT:
Significance Level : 0.05
Degree of Freedom (df): 9
Chi-Square Table Value (significant level=0.05, df=9): {16.919}
The calculated Chi-Square value (16.1537) is lesser than the Chi-Square Table value (16.919).
Hence, we fail to reject the null hypothesis (H_0).
Conclusion: Based on the Chi-Square test, there is no statistically significant relationship between age group and the primary use of UPI payments at the 0.05 significance level.

FINDINGS
1. Majority of the respondents (52%) belong to the 21–30 years age group.
2. Majority of the respondents are female (60%).
3. Majority of the respondents are undergraduates (55%).
4. Majority of the respondents are private employees (40%).
5. Majority of the respondents earn Rs.10,001–Rs.25,000 per month (45%).
6. Majority of the respondents have been using UPI for 6 months to 3 years (50%).
7. Majority of the respondents use Google Pay (38%).
8. Majority of the respondents perform 3–10 transactions per week (62%).
9. Majority of the transactions fall between ₹501–₹5,000 (58%).

10. Majority of the respondents use UPI for utility bill payments and mobile recharges (44%).
11. Majority of the respondents prefer UPI for its ease and speed of payment (50%).
12. Majority of the respondents find QR code payments as the most useful feature (46%).
13. Majority of the respondents feel UPI is very convenient (42%).
14. Majority of the respondents agree that low transaction cost and fast transactions contribute most to the cashless economy (48%).
15. Majority of the respondents believe e-commerce platforms benefit the most from UPI growth (45%).
16. Majority of the respondents use UPI during evening hours (50%).
17. Majority of the respondents face delay in credit/debit or technical failure (40%).
18. Majority of the respondents always verify transaction details before confirming payment (52%).
19. Majority of the respondents are concerned about fraud and scam risks (47%).
20. Majority of the respondents suggested adding more rewards and cashback offers (44%).

SUGGESTIONS

1. The government and financial institutions should enhance awareness programs to promote UPI usage among rural and senior citizens.
2. Banks should strengthen cybersecurity measures to ensure safe and reliable UPI transactions.
3. Merchants and small businesses should be encouraged to adopt UPI as their primary payment mode to boost digital inclusion.
4. Continuous innovation and user-friendly features should be introduced to maintain public confidence in digital payments.

CONCLUSION

The study concludes that UPI has played a pivotal role in accelerating India's cashless and digital economy. Its convenience, reliability, and interoperability have made it a preferred payment mode across various sectors. The rise in UPI transactions reflects growing public trust in digital finance. However, to sustain this growth, continuous awareness, security enhancements, and digital literacy initiatives are essential.

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