

# Role of UPI and Mobile Wallets in Promoting Cashless Economies

\*Christina Gorumuchu., Manishka Kamble., Mahi Singh

BBA Student, Bhavan's Vivekananda College of Science, Humanities & Commerce Sainikpuri,  
Secunderabad – 500094

\*Corresponding Author

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## ABSTRACT

The rapid adoption of digital payment technologies has become a defining feature of economic transformation in emerging economies, playing a crucial role in advancing cashless financial ecosystems. Among these innovations, Unified Payments Interface (UPI) and mobile wallets have emerged as scalable, interoperable, and user-centric solutions that facilitate real-time, secure, and cost-effective transactions. These platforms enhance transaction efficiency while embedding human-centric values such as accessibility, convenience, and trust, enabling broader participation in formal financial systems. Emerging economies, including India, face challenges related to financial exclusion, limited banking infrastructure, and gaps in digital literacy, particularly among rural populations, small businesses, and informal sector workers. UPI and mobile wallets help address these barriers by providing affordable, easy-to-use, and inclusive financial solutions that empower underserved populations to participate in the digital economy. This study adopts a descriptive and analytical research design, gathering primary data collected from a sample size of 100 respondents, through structured questionnaires from diverse users across different age groups, income levels, and occupational backgrounds. The survey explores user awareness, usage patterns, perceived convenience and security, and the impact of digital payments on reducing cash transactions. Statistical analysis, including percentage analysis and charts, is used to interpret the findings. Overall, the study highlights how UPI and mobile wallets foster financial inclusion, enhance transaction efficiency, modernise economic practices, and support sustainable and transformative change, demonstrating the convergence of technology, human-centric design, and sustainability in driving the growth of cashless economies in emerging markets.

**Keywords:** UPI ( Unified Payments Interface), Mobile wallets, Cashless economy, Financial inclusion, Digital payments

## INTRODUCTION

The rapid expansion of digital payment systems has emerged as a cornerstone of economic transformation in emerging economies, reshaping how financial transactions are conducted and accelerating the shift toward cashless financial ecosystems. Advances in financial technology, combined with proactive government initiatives, regulatory support, and widespread smartphone adoption, have created a conducive environment for the growth of digital payments. These developments have reduced dependence on cash-based transactions and encouraged the integration of technology into everyday economic activities. As digital infrastructure becomes more robust and affordable, digital payment platforms are increasingly viewed as essential tools for enhancing efficiency, transparency, and accountability within financial systems. This transformation has not only modernized payment practices but has also strengthened the overall digital financial architecture of emerging markets.

Among the various fintech innovations, Unified Payments Interface (UPI) platforms and mobile wallets have gained prominence due to their scalability, interoperability, and user-centric design. These platforms enable

instant peer-to-peer and peer-to-merchant transactions, allowing individuals and businesses to transfer funds seamlessly across banks and service providers. Their ability to operate in real time has significantly improved transaction speed and reliability, while reducing costs associated with traditional payment mechanisms. By simplifying payment processes and eliminating intermediaries, UPI and mobile wallets have transformed payment behaviour across households, enterprises, and public institutions, contributing to a more dynamic and responsive financial ecosystem. Their integration with e-commerce platforms, utility services, and government payment systems further strengthens their role in daily economic life.

UPI and mobile wallets play a crucial role in advancing cashless economies by offering secure, low-cost, and convenient alternatives to physical cash. Their interoperable architecture ensures flexibility and widespread usability, allowing users to transact across multiple platforms with minimal friction. These systems are designed with a strong emphasis on accessibility, ease of use, and inclusivity, enabling users with varying levels of digital literacy to participate in digital finance. Features such as simplified interfaces, multilingual support, and biometric authentication foster trust and confidence, making digital payments more acceptable across diverse demographic groups. As a result, digital payment systems encourage habitual usage and long-term behavioural change in payment preferences.

From a sustainability perspective, the adoption of digital payment systems contributes to economic and environmental efficiency. Reduced reliance on physical cash lowers costs associated with printing, transporting, storing, and managing currency, while also decreasing the environmental footprint linked to these activities. Furthermore, digital transactions enhance transparency and traceability, supporting better financial governance and reducing the scope for informal or unrecorded economic activities. The resulting efficiency gains strengthen institutional capacity and promote responsible economic practices, aligning digital payments with broader sustainability and development goals. In this way, digital finance supports both economic growth and sustainable resource utilization.

Within the broader framework of fintech innovation and financial inclusion, UPI and mobile wallets serve as powerful enablers of access to formal financial services in emerging economies. By lowering entry barriers for unbanked and underbanked populations such as small entrepreneurs, rural households, women-led enterprises, and informal sector participants, these platforms foster greater economic participation and resilience. Digital payment adoption allows these groups to establish transaction histories and financial identities, which are critical for accessing credit, savings products, insurance, and other value-added financial services. As a result, digital payments act as gateways to deeper financial integration and long-term economic empowerment, supporting inclusive economic development.

In this context, the integration of human-centric design, digital innovation, and sustainability objectives positions UPI and mobile wallets as catalysts for transformative business innovation. By aligning technological advancement with social and environmental priorities, these platforms contribute to inclusive growth, enhanced financial stability, and resilient financial systems. This paper examines the role of UPI and mobile wallets in promoting cashless economies, highlighting their capacity to support equitable development, strengthen financial ecosystems, and drive sustainable economic transformation in emerging markets.

## **REVIEW OF LITERATURE**

The review of literature provides a comprehensive overview of existing research on digital payment systems and their role in promoting cashless economies, with particular emphasis on Unified Payments Interface (UPI) platforms and mobile wallets. Previous studies have extensively examined the impact of demonetization, technological advancement, and supportive government policies on the adoption of digital payment mechanisms in India and other emerging economies. Scholars have explored multiple dimensions of cashless transactions, including financial inclusion, user acceptance, convenience, security, sustainability, and economic growth. The literature also highlights the behavioural, demographic, and infrastructural factors influencing the adoption and continued use of digital payment systems. By synthesising findings from empirical, theoretical, and analytical studies, this review identifies key drivers, benefits, and challenges

associated with UPI and mobile wallets, while establishing the research gap that underscores the need for further examination of their role in fostering inclusive, sustainable, and resilient cashless financial ecosystems.

**Ahmad and Arshad (2017)** examined India's transition toward a cashless economy following demonetization and its contribution to sustainable development. Their study emphasizes that digital payment systems support financial inclusion, encourage entrepreneurship, stimulate economic growth, and help reduce environmental impacts associated with cash usage.

**Kakade and Veshne (2017)** discussed the significance of the Unified Payments Interface (UPI) in strengthening India's cashless economy after demonetization. The study highlights UPI's features such as instant fund transfers, high security, and round-the-clock availability, which simplify transactions and promote the widespread adoption of digital payments.

**Dixit, Singh, and Chaturvedi (2017)** analyzed the adoption of mobile wallets in the post-demonetization period. Their findings reveal that cash shortages and government-led digital initiatives significantly boosted mobile wallet usage, with adoption patterns differing across age and educational groups, thereby reinforcing the role of mobile wallets in building a sustainable cashless economy.

**Sarika and Vasantha (2018)** investigated the influence of mobile wallets on the adoption of cashless transactions. The study concludes that enhanced convenience, faster transaction speed, and improved accessibility motivate users to shift from cash to digital payment methods, supporting the expansion of a cashless economy.

**Kamal Kant (2018)** explored the contribution of e-wallets to the development of India's digital economy. The research highlights that technological progress, supportive government policies, and demonetization accelerated mobile wallet adoption, facilitating cashless transactions and positively impacting economic growth.

**Rahul Gupta, Cheshtha Kapoor, and Jayesh Yadav (2020)** examined factors affecting user acceptance of digital payment systems and the evolution of the cashless payment ecosystem. Their study identifies ease of use, security, trust, and technological infrastructure as key determinants influencing adoption and strengthening India's digital financial environment.

**Nayak, Kumar, and Sai (2020)** analyzed the role of mobile wallets, particularly Google Pay, in promoting a cashless economy using survey data from 386 users. Through factor and regression analysis, the study found that customer friendliness, accessibility, cost benefits, rewards, transaction speed, and convenience significantly influence user preference for digital payments over cash.

**S. Sangeeta Kumari, K. M. Singh, and Nasim Ahmad (2022)** studied the impact of digital innovation on the growth of a cashless economy in India. Their research indicates that post-demonetization digitalization increased cashless transactions, generated employment opportunities, and reduced cash-related fraud, while also highlighting the need for stronger cybersecurity, digital literacy, and rural infrastructure.

**Neha Dalal and Dr Sapna Bansal (2022)** examined the role of UPI in promoting a cashless economy in emerging and developing nations. The study emphasizes UPI's simplicity, security, and interoperability in enhancing financial inclusion, transparency, and transaction efficiency, while also addressing challenges such as limited digital literacy and cybersecurity concerns.

**Ong and Chong (2022)** analyzed actual transaction data to study the impact of cashless payments on internet and mobile banking usage. Their findings reveal that digital payment tools such as e-wallets, credit transfers, and cards are increasingly used through online banking due to their efficiency and cost-effectiveness, though cashless payments tend to complement rather than fully replace physical cash.

**Dr Kaushiki Singh and Dr Shaiphali Jain (2023)** explored the role of digital payment systems in fostering economic growth in developing economies. The study highlights how digital payments improve financial

inclusion, formalize informal sectors, support small and medium enterprises, and enhance transparency, while also stressing the importance of addressing cybersecurity and infrastructure challenges.

**Ruchika Vermani and Neha Arora (2023)** conducted a theoretical study on UPI and its role in promoting digital inclusion. Their research explains how UPI reduces barriers to financial participation by offering easy access to digital financial services, thereby supporting inclusive economic growth.

**Kumar and Madhav (2023)** reviewed existing literature and empirical evidence on mobile wallet services and their contribution to a cashless economy. The study notes significant growth in transaction volumes and financial accessibility since demonetization, identifying factors such as cost, ease of use, security, usefulness, and customer support as crucial for user satisfaction and continued adoption.

**Jais (2025)** highlighted the role of digital payment systems, including UPI and mobile wallets, in accelerating India's move toward a cashless economy. The study emphasizes convenience, speed, affordability, government initiatives, and smartphone penetration as key drivers, while also noting persistent challenges related to digital literacy, infrastructure, and security.

**Verma, Sharma, and Gupta (2025)** demonstrated that the rapid adoption of digital payment systems, especially UPI, mobile wallets, and banking applications, has simplified financial transactions and contributed to economic formalisation by enhancing transparency, reducing cash dependence, and improving tax compliance and financial inclusion, although challenges remain in achieving universal adoption.

## Research Gap

While numerous studies have highlighted the growth of digital payments in India and the adoption of Unified Payments Interface (UPI) and mobile wallets, most existing research focuses on descriptive aspects such as usage patterns, technological features, or financial inclusion. There is limited empirical evidence on the combined impact of UPI and mobile wallets on accelerating cashless transactions, particularly in terms of economic growth, behavioural adoption across different demographic groups, and alignment with sustainable development goals.

Moreover, prior studies often emphasise urban and semi-urban populations, leaving rural adoption, infrastructural challenges, and digital literacy barriers underexplored. There is also a lack of research that quantitatively measures the effectiveness of UPI and mobile wallets in reducing cash dependency or assesses the long-term socio-economic implications of a cashless economy. Addressing these gaps would provide deeper insights into the role of digital payment systems in shaping an inclusive and sustainable cashless economy in India. This study seeks to bridge these gaps by providing an integrated, empirical analysis based on primary data to examine how UPI and mobile wallets collectively promote cashless economies, enhance financial inclusion, influence user behaviour, and support sustainable economic transformation in emerging markets.

## Objectives of the Study

The objectives of the study are formulated to examine the role and impact of Unified Payments Interface (UPI) and mobile wallets in promoting a cashless economy.

1. To examine the role of Unified Payments Interface (UPI) and mobile wallets in promoting a cashless economy.
2. To assess the level of awareness and usage of UPI and mobile wallet services among users.
3. To analyze the key factors influencing the adoption of digital payment systems.
4. To study the impact of UPI and mobile wallets on financial inclusion and economic efficiency.
5. To identify the major challenges faced in the adoption of digital payment systems.

### Hypothesis

Hypothesis (Variables)	Area	Null Hypothesis (H <sub>0</sub> )	Alternative Hypothesis (H <sub>1</sub> )	Tools Used for Analysis
Usage of UPI & Reduction in Cash Transactions		There is no significant relationship between the usage of UPI and the reduction in cash transactions.	There is a significant relationship between the usage of UPI and the reduction in cash transactions.	Percentage Analysis, Chi-Square Test
Mobile Wallet Usage & Adoption of Cashless Payments		Mobile wallet usage does not significantly influence the adoption of cashless payments.	Mobile wallet usage significantly influences the adoption of cashless payments.	Percentage Analysis, Chi-Square Test
Convenience & Frequency of Digital Payment Usage		Perceived convenience has no significant impact on the frequency of using UPI and mobile wallets.	Perceived convenience has a significant impact on the frequency of using UPI and mobile wallets.	Mean Score, Correlation Analysis
Security Perception & Trust in Digital Payments		Perceived security has no significant relationship with trust in digital payment systems.	Perceived security has a significant relationship with trust in digital payment systems.	Mean Score, Correlation Analysis
Demographic Factors & Digital Payment Adoption		Demographic factors have no significant effect on adoption of UPI / mobile wallets.	Demographic factors significantly affect the adoption of UPI and mobile wallets.	Cross Tabulation, Chi-Square Test

## RESEARCH METHODOLOGY

The present study adopts a descriptive and analytical research methodology to examine the role of Unified Payments Interface (UPI) and mobile wallets in promoting a cashless economy. The study is based primarily on primary data, collected through a structured questionnaire administered to users of digital payment systems. A total of 100 respondents were selected using a convenience sampling technique from different demographic backgrounds, including variations in age, income, education, and occupation.

The questionnaire consists of closed-ended questions and statements measured on a five-point Likert scale, designed to capture respondents' awareness, usage patterns, frequency of digital payments, perceived convenience, security perception, trust, and preference between cash and digital modes of payment. The collected data were analysed using statistical tools such as percentage analysis, mean score analysis, correlation analysis, cross-tabulation, and chi-square tests to interpret user behaviour and test the hypotheses. Secondary data were also collected from journals, research articles, reports, and official publications to support the study.

### Research Design

The research design adopted for this study is descriptive in nature, as it seeks to describe and analyse the current status of UPI and mobile wallet usage among users. An analytical approach is also incorporated to examine relationships between variables such as convenience, security, trust, demographic factors, and digital payment adoption. This design is appropriate for understanding patterns, perceptions, and behavioural trends related to cashless transactions without manipulating any variables.

### Nature of the Study

The nature of the study is empirical, as it is based on firsthand data collected directly from respondents through a survey method. It focuses on understanding real-world usage behaviour, perceptions, and experiences of users with respect to UPI and mobile wallets. The study is both quantitative and exploratory, aiming to measure user responses statistically while also exploring emerging trends in cashless payment adoption.

## Scope of the Study

The scope of the study is limited to examining the role of UPI and mobile wallets in promoting a cashless economy from the perspective of users. It covers aspects such as awareness, frequency of usage, convenience, security, trust, and preference for digital payments over cash. The study also analyses the influence of demographic factors such as age, education, and occupation on digital payment adoption. The findings provide insights into how digital payment systems contribute to reducing cash dependency and enhancing financial inclusion.

## Period of the Study

The study was conducted over a period of two months, during which the questionnaire was designed, data were collected from respondents, and statistical analysis was carried out. The study reflects user perceptions and behaviour during this specific period and does not account for changes occurring outside the study timeframe.

## Limitations of the Study

1. The study is limited to a sample size of **100 respondents**, which may not fully represent the entire population of digital payment users.
2. **Convenience sampling** has been used, which may result in sample bias and limit the generalisability of the findings.
3. The study is based on **primary data collected through a questionnaire**, and responses may be influenced by personal bias or inaccurate reporting by respondents.
4. The research focuses mainly on **UPI and mobile wallets**, excluding other digital payment methods such as credit cards and net banking.
5. The findings are confined to a **specific period of time** and may vary with changes in technology, government policies, and user behaviour.

## Tools for Analysis

The data collected through the structured questionnaire will be systematically analyzed using appropriate statistical tools to interpret the responses effectively and to test the stated hypotheses. The following analytical techniques are employed:

### Percentage Analysis

Percentage analysis is used as a preliminary tool to summarize and present the collected data in a simple and understandable manner. It helps in analyzing the demographic profile of respondents, such as age, gender, income level, education, and occupation. In addition, this method is applied to assess respondents' level of awareness, adoption, and usage patterns of UPI and mobile wallets, frequency of digital payment usage, and preference between cash and digital modes of payment. Percentage analysis provides a clear overview of response distribution and emerging trends, thereby forming a base for further statistical analysis.

### Mean Score Analysis

Mean score analysis is applied to responses measured on a Likert scale to evaluate respondents' perceptions regarding digital payment systems. This technique is particularly used to measure perceived convenience, ease of use, time-saving nature, security perception, and level of trust in UPI and mobile wallets. By calculating mean values, the study is able to rank various factors influencing the adoption and continued usage of digital payment systems. Higher mean scores indicate stronger agreement and greater influence of a particular factor on user behaviour.

### Chi-Square Test

The Chi-square test is employed to examine the association between selected categorical variables. It is used to test whether there is a significant relationship between variables such as usage of UPI and reduction in cash

transactions, mobile wallet usage and adoption of cashless payments, and demographic factors (age, income, education) and digital payment adoption. This test helps in statistically validating the hypotheses by determining whether observed differences or associations are due to chance or represent a meaningful relationship, thereby aiding in the acceptance or rejection of the null hypothesis.

### Correlation Analysis

Correlation analysis is used to study the degree and direction of relationship between two continuous or ordinal variables. In this study, it is applied to examine the relationship between perceived convenience and frequency of digital payment usage, as well as between security perception and trust in digital payment systems. The correlation coefficient indicates whether the relationship is positive or negative and whether it is weak, moderate, or strong. This analysis helps in understanding how one variable influences or moves in relation to another.

### Cross Tabulation

Cross-tabulation is used to analyze two variables simultaneously and to identify patterns or relationships between them. It is mainly applied to compare demographic variables such as age, income, and education with the usage of UPI and mobile wallets. Additionally, it is used to compare the type of digital payment method used with the frequency of transactions. Cross-tabulation enhances interpretability by presenting data in a comparative format and also supports hypothesis testing when used along with the Chi-square test.

### Data Analysis

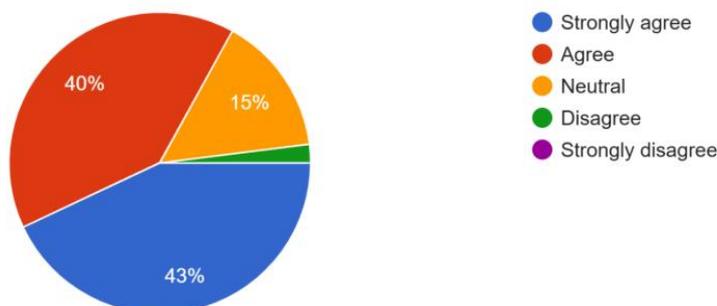
#### Percentage Analysis

**Percentage analysis** is a simple and widely used statistical tool that helps in presenting data in a clear and understandable manner. It converts raw data into percentages, making it easier to compare responses and interpret trends related to awareness, usage, and perception of UPI and mobile wallets in promoting a cashless economy.

Table 1- Percentage analysis of UPI and mobile wallets has reduced my dependency on cash

Attributes	No. of Responders	Weight
Strongly agree	43	43%
Agree	40	40%
Neutral	15	15%
Disagree	2	2%
Strongly disagree	0	0%
<b>Total</b>	<b>100</b>	

UPI and mobile wallets have reduced my dependency on cash  
100 responses



The pie chart illustrates respondents' opinions on whether UPI and mobile wallets have reduced their dependency on cash. A clear majority of respondents expressed a positive view, with **43% strongly agreeing** and **40% agreeing** that digital payment platforms have significantly lowered their reliance on cash. This indicates a strong acceptance and regular use of UPI and mobile wallets in daily transactions. About **15% of respondents were neutral**, showing that they use digital payments only sometimes or depending on the situation. Only **2% disagreed**, and none strongly disagreed, reflecting minimal resistance toward cashless payment methods. Overall, the findings highlight the effectiveness of UPI and mobile wallets in promoting cashless behaviour and reducing dependence on physical cash among users.

### Mean Score Analysis

**Mean score analysis** is a statistical technique used to measure the average opinion of respondents by assigning numerical weights to Likert scale responses. It helps in understanding the overall level of agreement and evaluating factors such as convenience and frequency of usage of UPI and mobile wallets in promoting a cashless economy.

Table 2- UPI and mobile wallets are easy to use and understand

Attributes	No. of Responders	Weight	Weighted Score
Strongly agree	56	5	280
Agree	36	4	144
Neutral	7	3	21
Disagree	1	2	2
Strongly disagree	0	1	0
<b>Total</b>	<b>100</b>		<b>447</b>

<b>MEAN</b>	<b>4.47</b>
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Table 3- Digital payment systems save time compared to cash transactions

Attributes	No. of Responders	Weight	Weighted Score
Strongly agree	54	5	270
Agree	35	4	140
Neutral	11	3	33
Disagree	0	2	0
Strongly disagree	0	1	0
<b>Total</b>	<b>100</b>		<b>443</b>

<b>MEAN</b>	<b>4.43</b>
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<b>Mean &gt; 3.5 →</b>	<b>Frequent usage</b>
<b>Mean &lt; 3 →</b>	<b>Low usage</b>

The mean score analysis shows strong agreement among respondents regarding the convenience of UPI and mobile wallets. The high mean score of 4.47 for ease of use indicates that users find digital payment systems simple and user-friendly, while the mean score of 4.43 for time-saving highlights that digital payments are perceived as faster than cash transactions. Since both mean scores are well above the benchmark value of 3.5,

it is evident that convenience plays a crucial role in encouraging frequent usage of UPI and mobile wallets, thereby supporting the growth of a cashless economy.

Table 4- Aware of UPI and Mobile wallet services

Attributes	No. of Responders	Weight	Weighted Score
Yes	95	2	190
No	5	1	5
<b>Total</b>	<b>100</b>		<b>195</b>

<b>MEAN</b>	1.95
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Table 5 - Regularly use UPI/ mobile wallets for daily transactions

Attributes	No. of Responders	Weight	Weighted Score
Yes	94	2	188
No	6	1	6
<b>Total</b>	<b>100</b>		<b>194</b>

<b>MEAN</b>	1.94
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Mean > 1.75 – 2.00	Very High usage
Mean < 1.50 – 1.74	Moderate usage
Below 1.50	Low usage

The mean score analysis indicates a very high level of awareness regarding UPI and mobile wallet services among respondents, with a mean score of 1.95, which falls within the range of very high usage (1.75–2.00). This shows that the majority of respondents are well informed about digital payment systems. Similarly, the mean score of 1.94 for regular usage of UPI and mobile wallets for daily transactions also reflects very high usage levels. These findings suggest that high awareness has led to the regular adoption of digital payment methods, thereby contributing significantly to the promotion of a cashless economy.

### Correlation Analysis

**Correlation analysis** is used to measure the relationship between variables related to UPI and mobile wallet usage. It helps identify how factors such as perceived security and trust in authentication methods are associated with each other, indicating the extent to which one influences the adoption of digital payment systems in promoting a cashless economy.

Table 1 – Correlation analysis of Security Perception and Trust in Digital Payments

Likert Score	Security Perception	Trust in Digital Payments
5	30	41
4	45	49
3	23	10
2	2	0
1	0	0

<b>Security Perception vs Trust in Digital Payments</b>
0.933486631

The correlation analysis indicates a **very strong positive relationship** between security perception and trust in digital payment systems, with a correlation coefficient of  $r = 0.933$ . This value is very close to +1, signifying that higher levels of perceived security are strongly associated with higher levels of trust among users. The findings suggest that respondents who believe UPI and mobile wallets are secure tend to have greater confidence in using digital payment platforms. Therefore, security perception plays a **crucial role in building trust** in digital payments. Enhancing security measures such as data protection, authentication mechanisms, and fraud prevention can significantly improve users' trust and promote wider adoption of digital payment systems.

### Cross Tabulation

**Cross tabulation** is a statistical technique used to analyse the relationship between two or more variables by presenting data in a table format. It helps compare categories such as age, income, or occupation with usage behaviour. In the topic of UPI and mobile wallets, cross-tabulation is used to examine how different demographic groups adopt and use digital payment systems. This helps in understanding their role in promoting a cashless economy and identifying patterns of usage.

Table 1- Age group and Regular Usage of UPI / Mobile Wallets

Age Group	Regular Users	Non- Regular Users	Total
18-25	72	3	75
26-35	15	1	16
36-45	5	1	6
46-55	2	1	3
Above 55	10	0	1
<b>Total</b>	<b>95</b>	<b>6</b>	<b>100</b>

The table shows that respondents in the **18–25 age group** constitute the largest proportion of regular users of UPI and mobile wallets, accounting for **72 out of 75 respondents** in that category. This indicates a very high level of digital payment adoption among younger users. As age increases, the number of regular users gradually declines, suggesting comparatively lower adoption among older age groups. This trend highlights that younger respondents are more technologically adaptable and comfortable with digital platforms, thereby playing a significant role in promoting cashless transactions.

Table 2- Educational Qualification and Awareness of Digital Payments

Educational Qualification	Aware	Not Aware	Total
Secondary	12	2	14
Graduate	72	2	74
Post Graduate	10	0	10
Others	1	1	2
<b>Total</b>	<b>95</b>	<b>5</b>	<b>100</b>

The table reveals a strong relationship between educational qualification and awareness of digital payment systems. **Graduates and postgraduates** show exceptionally high awareness of UPI and mobile wallets, accounting for the majority of aware respondents. In contrast, respondents with only secondary education and those under the “others” category exhibit relatively lower awareness levels. This indicates that higher educational attainment contributes positively to awareness and understanding of digital payment systems, thereby facilitating greater adoption and effective usage.

Table 3- Occupation and Preference for Digital Payments

Occupation	Prefer Digital Payment	Prefer Cash	Total
Students	55	5	60
Salaried	23	2	25
Self-employed	6	1	7
Others	6	2	8
<b>Total</b>	<b>90</b>	<b>10</b>	<b>100</b>

The table indicates that a substantial majority of respondents across all occupational categories prefer digital payments over cash. **Students** show the highest preference for digital payments, followed by **salaried employees**, reflecting frequent usage and familiarity with digital platforms. Although self-employed and other categories also prefer digital payments, a small proportion still relies on cash. Overall, the findings suggest that occupation influences payment preference, with digitally exposed groups contributing more actively to the shift toward a cashless economy.

The cross-tabulation results show that younger age groups adopt UPI and mobile wallets more actively, higher education increases awareness and confidence in digital payments, and students and salaried employees drive the cashless economy. The findings clearly indicate that demographic variables have a significant effect on digital payment adoption.

### Chi-Square Test

The chi-square test is a non-parametric statistical technique used to determine whether a significant association exists between two categorical variables. In the present study, this test is employed to examine the relationship between demographic factors such as age, educational qualification, and occupation, and various aspects of digital payment adoption. The test helps in understanding whether observed differences among groups are statistically meaningful or occur by chance.

Table 1- Observed Frequencies Table & Expected Frequencies Table

Observed			
Age group	Regular Users	Non-Regular Users	Total
18-25	72	3	75
26-35	15	1	16
36-45	5	1	6
46-55	2	1	3
Above 55	10	0	1
<b>Total</b>	<b>95</b>	<b>6</b>	<b>100</b>

Expected		
Age group	Regular Users	Non-Regular Users
18-25	71.25	4.5
26-35	15.2	0.96
36-45	5.7	0.36
46-55	2.85	0.18
Above 55	0.95	0.06

Table 2- Chi-Square analysis of Age group and Regular Usage of UPI / Mobile Wallets

<b>Calculated <math>\chi^2</math></b>	5.84
<b>df</b>	4
<b>Critical <math>\chi^2</math></b>	9.488

The chi-square test shows that the **obtained value ( $\chi^2 = 5.84$ )** is smaller than the required **critical value ( $\chi^2 = 9.488$ )** at the **5% significance level** with **four degrees of freedom**. Hence, the **null hypothesis is accepted**, indicating that there is **no statistically significant association** between age group and regular usage of UPI and mobile wallets. However, descriptive analysis reveals higher adoption among younger age groups, particularly 18–25 years. As some expected frequencies are below 5, the results should be interpreted with caution.

Table 3 - Observed Frequencies Table & Expected Frequencies Table

Observed			
Education	Aware	Not Aware	Total
Secondary	12	2	14
Graduate	72	2	74
Post-Graduate	10	0	10
Others	1	1	2
<b>Total</b>	<b>95</b>	<b>5</b>	<b>100</b>

Expected		
Education	Aware (E)	Not Aware (E)
Secondary	13.3	0.7
Graduate	70.3	3.7
Post-Graduate	9.5	0.5
Others	1.9	0.1

Table 4- Chi-Square analysis of Educational Qualification and Awareness of Digital Payments

<b>Calculated <math>\chi^2</math></b>	6.68
<b>df</b>	3
<b>Critical <math>\chi^2</math></b>	7.815

The chi-square test reveals that the **computed value ( $\chi^2 = 6.68$ ) is lower than the critical value ( $\chi^2 = 7.815$ ) at the 5% significance level with 3 degrees of freedom.** Therefore, the **null hypothesis is accepted**, indicating **no statistically significant relationship** between educational qualification and awareness of digital payment systems. Nevertheless, graduates and postgraduates exhibit comparatively higher awareness levels. Since certain expected cell frequencies are less than 5, the findings should be interpreted cautiously.

Table 5 - Observed Frequencies Table & Expected Frequencies Table

Observed			
Occupation	Digital	Cash	Total
Students	55	5	60
Salaried	23	2	25
Self-employed	6	1	7
Others	6	2	8
<b>Total</b>	<b>90</b>	<b>10</b>	<b>100</b>

Expected		
Occupation	Digital (E)	Cash (E)
Students	54	6
Salaried	22.5	2.5
Self-employed	6.3	0.7
Others	7.2	0.8

Table 6- Chi-Square analysis of Occupation and Preference for Digital Payments

<b>Calculated <math>\chi^2</math></b>	2.33
<b>df</b>	3
<b>Critical <math>\chi^2</math></b>	7.815

The chi-square test result indicates that the **calculated value ( $\chi^2 = 2.33$ ) is less than the critical value ( $\chi^2 = 7.815$ ) at the 5% significance level with 3 degrees of freedom.** Hence, the **null hypothesis is accepted**, suggesting that there is **no statistically significant association** between occupation and preference for digital payments. However, descriptive results show that students and salaried employees have a stronger preference for digital payment methods compared to other occupational groups. Due to low expected frequencies in some cells, the results should be interpreted with caution. Although Pearson's chi-square tests do not show statistically significant associations at the 5% level, descriptive analysis indicates clear trends suggesting that demographic variables influence digital payment adoption. The results should be interpreted with caution due to low expected frequencies in certain cells

## FINDINGS AND DISCUSSIONS

This section presents the key findings derived from the statistical analysis of primary data collected from respondents. Various analytical tools, such as **percentage analysis, mean score analysis, correlation analysis, cross-tabulation, and chi-square tests**, were employed to interpret user behaviour, perceptions, and adoption patterns related to **UPI and mobile wallets**. The findings are discussed to understand their role in promoting a **cashless economy** and to examine the influence of convenience, security, and demographic factors on digital payment usage.

The **percentage analysis** highlights a strong shift toward **cashless transactions** among respondents. A substantial majority agreed that the use of **UPI and mobile wallets** has significantly reduced their **dependence on cash**. Very few respondents expressed disagreement, indicating **minimal resistance** to digital payment systems. This clearly reflects **widespread acceptance** and confirms that UPI and mobile wallets are effective tools in promoting **cashless payment behaviour** in daily transactions.

The **mean score analysis** reveals that respondents perceive **UPI and mobile wallets** as highly **convenient** and **user-friendly**. High mean values for **ease of use** and **time-saving factors** indicate strong agreement that digital payments **simplify transactions** and improve **efficiency**. Additionally, the high mean scores for **awareness** and **regular usage** demonstrate that respondents are well-informed and frequently rely on these platforms for routine payments. **Convenience**, therefore, emerges as a major factor driving consistent usage of digital payment systems.

The **correlation analysis** shows a very strong **positive relationship** between **perceived security** and **trust in digital payment systems**. As users' confidence in **security features** increases, their trust in **UPI and mobile wallets** also rises significantly. This finding highlights that **security perception** is a critical determinant of **digital payment adoption**, and strengthening **fraud prevention** and **data protection mechanisms** can further encourage user participation in a **cashless economy**.

The **cross-tabulation analysis** indicates noticeable differences in **digital payment adoption** across **demographic groups**. Younger respondents, particularly those in the **18–25 age group**, show higher levels of **regular usage**. **Graduates and postgraduates** display greater **awareness** of digital payment services, while **students and salaried employees** exhibit a strong **preference for cashless transactions**. These patterns suggest that **age, education, and occupation** influence awareness and usage levels of UPI and mobile wallets.

The **chi-square analysis** results indicate that there is **no statistically significant association** between **demographic variables** and **digital payment adoption** at the **5% significance level**. However, **descriptive trends** observed in the data suggest practical differences among demographic groups. The lack of statistical significance may be due to the **small sample size** and **low expected frequencies** in certain categories. Therefore, while the **null hypotheses** are statistically accepted, observable patterns still indicate the influence of **demographic factors** on digital payment behaviour.

### Implications

The findings of the study highlight important implications for policymakers, digital payment service providers, businesses, and researchers. The study confirms that UPI and mobile wallets play a significant role in reducing cash dependency and promoting cashless transactions, supporting the government's vision of a digital economy.

From a policy perspective, the results suggest the need for continued investment in digital infrastructure, internet connectivity, and digital literacy programs, especially in rural and semi-urban areas, to ensure inclusive adoption of digital payment systems.

For banks and digital payment service providers, the strong relationship between perceived security and trust indicates that enhancing cybersecurity measures, fraud prevention mechanisms, and transparent communication is essential to encourage wider usage and sustained trust in digital platforms.

The study also has implications for businesses and merchants, as increased adoption of UPI and mobile wallets can reduce cash handling costs, improve transaction efficiency, and enhance customer convenience, particularly for small and retail businesses.

Academically, the study contributes empirical evidence on digital payment adoption in an emerging economy context and provides a base for future research using larger samples and advanced analytical methods. Overall, the findings indicate that UPI and mobile wallets are key enablers of a secure, inclusive, and sustainable cashless economy.

## CONCLUSION

The present study clearly establishes that Unified Payments Interface (UPI) and mobile wallets have played a significant role in accelerating the transition toward a cashless economy. The findings indicate a substantial reduction in cash dependency among users, supported by high levels of awareness, regular usage, and favourable perceptions regarding convenience, speed, and efficiency. Digital payment systems are widely regarded as easy to use, time-saving, and reliable, which has encouraged their seamless integration into everyday financial transactions across various demographic groups.

The study further highlights the critical importance of security and trust in driving digital payment adoption. The strong positive relationship between perceived security and trust indicates that users are more inclined to adopt and continue using UPI and mobile wallets when they feel confident about transaction safety, data protection, and fraud prevention mechanisms. This highlights the importance of ongoing improvement in cybersecurity measures and transparent communication to enhance user confidence. Additionally, demographic analysis reveals that younger individuals, graduates, students, and salaried employees exhibit higher adoption and preference for digital payments, reflecting greater digital awareness and adaptability, even though statistical tests did not indicate significant associations at the 5% level.

Overall, the study finds that UPI and mobile wallets not only help reduce reliance on cash but also enhance financial inclusion, transparency, and economic efficiency. These digital payment platforms have enabled broader participation in formal financial activities, particularly by lowering transaction costs and simplifying access to financial services. To further strengthen the cashless ecosystem, policymakers and service providers should focus on improving digital infrastructure, expanding internet connectivity, enhancing cybersecurity frameworks, and promoting digital literacy, especially in rural areas and among less digitally aware populations. With sustained technological advancements, inclusive policy support, and increased user education, UPI and mobile wallets can play a pivotal role in building a sustainable, inclusive, and digitally empowered economy.

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