14 Digital Transformation through UPI: An Analytical Study

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Abstract

The Unified Payments Interface (UPI) has emerged as one of the most transformative innovations in India's financial system, revolutionizing digital payments and accelerating the transition toward a cashless economy. This study examines the growth, adoption, and competitiveness of UPI applications during the period 2023–2025. The present paper focuses on leading platforms such as PhonePe, Google Pay, Paytm, BHIM, and Amazon Pay. The research seeks to analyze the year-wise growth trends in UPI transaction volume and value. An attempt is made to evaluate the comparative market share of these applications and determine whether significant differences exist in transaction patterns across platforms. Using secondary data from the National Payments Corporation of India (NPCI) and industry reports, the study employs descriptive statistics and growth rate analysis to measure expansion over time, while inferential tools such as correlation and regression analysis are applied to test hypotheses concerning transaction growth, app dominance, and the relationship between transaction volume and transaction value. The findings reveal a substantial increase in UPI adoption during the study period, with PhonePe and Google Pay consistently dominating the market, while Paytm and smaller applications such as BHIM and Amazon Pay show modest yet steady participation. A strong positive correlation between transaction volume and value highlights the scalability of digital payment platforms and the growing trust of users in UPI systems.

Keywords: Unified Payments Interface (UPI), Digital Transformation, Market Share, Digital Payment Platforms.

Introduction

Digital transformation in India has made impressive progress over the last ten years. Oneofthe key achievements in this journey is the creation of the Unified Payments Interface (UPI). Introduced in 2016 by the National Payments Corporation

of India (NPCI),UPI has changed the way people handle their money. It allows quick, secure, and real-time digital transactions through mobile phones. Compared to earlier digital banking methods that needed a lot of information like IFSC codes, account numbers, or debit card details, UPI makes payments simpler by just requiring a virtual ID. This innovation has made digital payments not only easy to access butalso convenient, helping India move faster towards a cashless and transparent economy.

By reducing the use of physical cash, UPI has helped create a cashless environment and brought millions into the formal banking system. It helps with financial inclusion by allowing people in rural and semi-urban areas to make digital transactions easily, even without credit or debit cards. UPI works with different banks and apps, creating a shared system unlike digital wallets that work alone. This has made payments more convenient and built trust in digital transactions.Also, since UPI transactions are either free or have low fees, it is a cost-effective option for people and businesses. Government efforts like the Digital India campaign, demonetization in 2016, and incentives for digital use have greatly helped UPI gain popularity.

For businesses and startups, UPI has been a big boost for growth and innovation. Small and medium enterprises (MSMEs) that used to struggle with the costs of card machines or payment systems can now accept payments via UPI without expensive setups. E-commerce giants like Flipkart, Amazon, and Zomato have smoothly integrated UPI, making checkout simplefortheir customers. Fintech startups such as Google Pay, PhonePe, Paytm, and BHIM have grown quickly because of UPI's strong payment platform. Beyond India, UPI is expanding globally with partnerships in places like Singapore, France, and the UAE, helping India become a leader in digital payments.

For consumers, UPI has changed how people live and pay. The ability to transfer money quickly anytime, without worrying about bank hours, has made UPI a favorite payment method. The two-factor authentication system ensures secure transactions, which builds trust among users. Whether buying groceries from local shops or making big online purchases, UPI is now part of everyday financial life. Its easy access and user-friendly design have not only made digital payments common but have also changed people's attitudes from relying on cash to using digital options first.

Looking ahead, the future of UPI shows even more integration into India's financial system.UPI is moving towards supporting credit lines and credit cards, offering more value to both users and businesses. Partnerships for international payments are opening up possibilities for global use, making UPI a possible standard for digital payments worldwide. The use of artificial intelligenceand data analysis is expected to improve fraud detection and offer better insights forcustomers, thus strengthening UPI's reliability.

In conclusion, UPI has become a key part of India's digital transformation by making payments more accessible and empowering individuals, businesses, and the government. It has turned digital payments from a luxury into a habit for many. By helping to close gaps in financial access, UPI has improved financial inclusion, made transactions transparent, and reduced reliance on cash. Its ease of use, compatibility across platforms, and security have built widespread trust, making it a daily part of life. With more users, global reach, and links to new technologies, UPI is more than just a financial tool—it's a symbol of India's successful digital revolution. It shows how technology, designed to be inclusive and scalable, can change an entire economy and set an example for the world.

Literature Review

Sharma, A., (2016), outlines the concept, evolution, features, and structure of UPI with the aim of promoting a less-cash economy. Adopting a descriptive approach using secondary data, the study compares UPI with existing payment systems, explains its value propositions, and evaluates its security framework and concludes that UPI has the potential to transform mobile banking by offering secure, instant, and interoperable transactions, reducing dependence on cash and e-wallets.

Gochhwal, R., (2017), investigates UPI's growth, technical framework, and security mechanisms. By blending empirical and theoretical perspectives, it contrasts UPI with earlier payment systems, emphasizing its affordability, mobile-first model, interoperability, and role in financial inclusion, while stressing the need for more merchant-oriented solutions to encourage usage.

Kaur, M., (2018), studies UPI's contribution to India's digital payments ecosystem. Drawing on secondary data from NPCI and RBI, the paper tracks transaction growth in terms of volume and value. It attributes rapid adoption to UPI's ease of use, interoperability, and government-backed digital push, while also acknowledging issues of cybersecurity and low awareness among the population.

Devi, A., (2018), highlights SBI's pioneering role in mobile banking based on secondary sources such as reports and existing literature. The review looks into SBI's apps, UPI integration, and outreach measures, noting improved convenience, rural reach and expanded services, while also pointing out challenges in regulation, security, and customer education.

Pawadi, A. B., (2018), discusses the ongoing digital transformation of banking with a focus on customer-centric and omni-channel approaches. A descriptive overview highlights benefits like better customer experience, cost efficiency, and wider access, while also flagging risks such as cybersecurity issues and potential job losses. The paper further explores trends in open banking, blockchain, cloud, and mobile-first strategies.

Banerjee, A., (2019), evaluates India's digital payment progress between 2014–2019 with emphasis on government policies, fintech adoption, and financial inclusion. Based on RBI, NPCI, and official reports, the review shows rapid growth in UPI adoption and broader access, but also finds that cash remains dominant and security concerns continue.

Shifa Fathima, J., (2020), reviews the evolution and effects of digitalization in Indian banking using secondary data. It assesses innovations such as UPI, ATMs, mobile banking, and state-led initiatives, highlighting benefits in terms of efficiency, convenience, and cost savings, but pointing out gaps in cybersecurity and user adoption.

Vidya, M., & Shailashri, V. T., (2021), study the adoption of digital payments over five years through the ABCD framework and secondary data. They analyze systems like NEFT, RTGS, IMPS, UPI, and card payments, concluding that advantages outweigh the drawbacks, though security risks and digital literacy barriers persist.

Niranjan, H. N., & Ambrose, A. C., (2022), investigate India's path to a cashless economy by examining UPI, IMPS, NEFT, and card systems through secondary data. The findings show rapid growth and operational efficiency, with predictions that 80–90% of transactions may be digital by 2025, though infrastructure and security issues remain pressing.

Sahu, A. K., Sahu, D., & Patra, D., (2023), makes use of empirical transaction data to study UPI adoption trends and its contribution to financial inclusion. They conclude that UPI effectively reduces dependence on cash, enhances transparency, and drives India's digital economy forward.

Mahato, J. R., & Singh, S., (2024), assess UPI's uptake and influence using secondary NPCI data. Their analysis of transaction volumes, values, and features shows that UPI has promoted inclusion, decreased reliance on cash, and accelerated the transition toward a cashless economy.

Bharathi Ravi, N., Madhumithaa, M., Manikandan, M., & Murugan, M. (2024), examines how banks adapt to technological advancements through industry analyses and case-based evaluations. The study reveals that adopting strategic innovations strengthens competitiveness, even as traditional models face limitations.

Joshi, A., Saxena, S., & Vidani, J., (2024), studies the progress of digital banking in India, centering on SBI, by utilizing secondary data from authoritative sources. They underline the swift adoption of YONO, improved cost efficiency, and broader inclusion, while identifying cybersecurity and literacy as ongoing concerns.

Pooja Panchani, (2025), explores how FinTech has reshaped Indian banking through innovations like wallets, mobile banking, and blockchain. The review

highlights gain in efficiency and inclusion, alongside regulatory and cybersecurity hurdles.

Rokade, N. S., (2025), studies the acceleration of digital banking in India spurred by internet access and government programs. Using secondary data on UPI, wallets, mobile, and online banking, the paper identifies significant growth in transactions and inclusion, tempered by issues of security and financial literacy.

Most existing studies on UPI focus on its evolution, architecture, transaction growth and role in building a less-cash economy. However, they remain largely descriptive and system-level, relying on secondary data. Very few works examine UPI at the application level, even though apps like PhonePe, Google Pay, and Paytm are the main drivers of adoption, shaping user trust, experience, and inclusion.

This lack of extensive, app-wise analysis creates a clear research gap. Studying how different apps influence transaction volumes, user preferences and competition is essential to understand UPI's true impact. Hence, this study aims to provide a more comprehensive, app- focused, data-driven analysis, offering insights valuable to policymakers, banks and fintech in strengthening India's digital payment ecosystem.

Research Methodology

The study is primarily based on secondary data collected from official websites, reports, and journals, with a focus on five major UPI applications in India - PhonePe, Google Pay, Paytm, BHIM, and Amazon Pay. The data sources include NPCI monthly UPI reports, RBI publications, and other official financial documents, ensuring authenticity, accuracy, and up-to-date information. The study examines both transaction volume and value across these applications over the period 2023–2025.

To provide a comprehensive understanding, a combination of quantitative analytical tools is employed. Descriptive statistics summarize the central tendencies, dispersion, and growth patterns of transactions, while trend analysis captures the temporal evolution of UPI adoption. Comparative analysis highlights app-wise performance and market share, identifying leaders and emerging players, whereas regression and correlation analysis explore the relationships between transaction volume and value. Furthermore, ANOVA is utilized to determine the statistical significance of differences among applications, validating observed patterns.

The study adopts a descriptive research design with an analytical approach, ensuring systematic examination of data while maintaining reliability and consistency. By integrating multiple analytical techniques, the research offers a holistic view of adoption trends, market competitiveness, and transactional behavior in the UPI ecosystem, thereby providing valuable insights for stakeholders, policymakers, and researchers interested in India's digital payment landscape.

Hypotheses

Hypothesis	Null Hypothesis (H0)	Alternative Hypothesis(H1)	Tools Used for Analysis
Growth Hypothesis	There is no significant increase in UPI transaction volume and value from 2023 to 2025.	There is a significant increase in UPI transaction volume and value from 2023 to 2025.	**Descriptive Statistics & Comparative Analysis** (year-wise growth trends), **Trend Analysis** (patterns and projections)
App Dominance Hypothesis	PhonePe and Google Pay do not have a significantly higher market share compared to Paytm, BHIM, and Amazon Pay.	PhonePe and Google Pay have a significantly higher market share compared to Paytm, BHIM, and Amazon Pay.	**ANOVA** (comparison of mean transaction volumes/values across apps) **Descriptive Statistics** (market share comparisons)
Relationship Hypothesis	There is no positive correlation between UPI transaction volume and transaction value across years.	There is a positive correlation between UPI transaction volume and transaction value across years.	**Correlation Analysis** (strength & direction of relationship), **Regression Analysis** (to test significance and predictability)
Inclusion Hypothesis	The adoption of UPI apps has not significantly contributed to reducing reliance on cash or advancing financial inclusion in India.	The adoption of UPI apps has significantly contributed to reducing reliance on cash and advancing financial inclusion in India.	**Trend Analysis** (cash vs. digital transaction trends), **Descriptive Statistics** (changes in adoption rates and penetration)

Tools for Analysis

Descriptive statistics and comparative analysis are used to examine the year-wise growth trends in the volume and value of UPI transactions during the period 2023 to 2025. By applying these tools, the study systematically evaluates the performance of major UPI applications such as- PhonePe, Google Pay, Paytm, BHIM and Amazon Pay. This enables a comparative understanding of transaction growth

across platforms while also highlighting the leading UPI applications that drive competitiveness and market dominance within the UPI ecosystem.

Trend analysis is applied to observe patterns in the volume and value of UPI transactions over time and to project the potential future direction. Through the use of graphs and linear trend lines, this method illustrates the adoption patterns of UPI platforms, assesses the consistency of their growth rates, and evaluates their scalability over time.

The study **applies regression analysis** to evaluate the extent to which variations in transaction volume (independent variable) can predict corresponding changes in transaction value (dependent variable).the analysis assesses when there an increase in transaction volume leads to a proportional increase in transaction value. This provides valuable insights into the direction of association between key performance indicators, which contributes to a deeper understanding of user behavior and platform efficiency within the UPI ecosystem.

To test this relationship, the following hypotheses are formulated:

H_0 **(Null Hypothesis):** There is no significant relationship between UPI transaction volume and transaction value.

H_1 **(Alternative Hypothesis):** There is a significant positive relationship between UPI transaction volume and transaction value.

ANOVA is applied to compare the mean transaction volumes and values across different UPI applications to test whether there are any statistically significant differences in adoption or usage patterns. The analysis focuses on leading UPI platforms such as PhonePe, Google Pay, Paytm, BHIM and Amazon Pay to identify whether certain applications demonstrate consistently higher or lower levels of user engagement and transaction activity compared to others.

To validate this analysis, the following hypotheses are formulated:

H_0 **(Null Hypothesis):** There is no significant difference in transaction patterns among the selected UPI applications.

H_1 **(Alternative Hypothesis):** There is a significant difference in transaction patterns among the selected UPI applications.

Correlation analysis is used to assess the strength and the direction of the relationship between transaction volume and transaction value across different UPI applications. This method helps in determining whether higher levels of adoption are associated with higher transaction values, which can indicate user confidence and the ability of the platform to scale. The findings of correlation analysis provide a basic insight into how key performance metrics and support further statistical tests such as regression analysis.

Results and Discussions

- **Descriptive Analysis**

Table 1: Descriptive Statistics of UPI Applications (2023–2025)

| Tools	PhonePe		GooglePay		Paytm		BHIM		AmazonPay	
	Volume (Mn)	Value (Cr)	Volume (Mn)	Value (Cr)	Volume (Mn)	Value (Cr)	Volume (Mn)	Value (Cr)	Volume (Mn)	Value (Cr)
MEAN	6,465.99	975,957.92	4,954.14	682,785.58	1,259.09	144,087.32	37.40	8,993.37	69.31	7,544.64
MEDIAN	6,716.09	1,009,064.99	5,103.99	707,241.27	1,230.04	136,528.25	25.74	8,363.28	65.35	7,377.30
SD(σ)	1697.04	199705.89	1355.22	149811.49	146.54	24159.52	22.31	1844.32	19.89	1894.52
VARIANCE	2879949.93	39882443600	1836623.11	22443482008	21475.21	583682199.3	497.87	3401506.04	395.48	3589192.62
COV	0.26	0.20	0.27	0.22	0.12	0.17	0.60	0.21	0.29	0.25
CAGR	0.41	0.29	0.44	0.32	0.06	0.01	0.65	0.26	0.25	0.28

The descriptive statistics show that PhonePe and Google Pay lead the UPI ecosystem with the highest mean transaction volumes and values, while Paytm, BHIM, and Amazon Pay operate at smaller scales. Standard deviation and variance indicate that PhonePe and Google Pay experience greater transaction fluctuations, whereas BHIM and Amazon Pay are more stable. Positive covariance values across all apps confirm a direct relationship between transactionvolume and value. BHIM, despite its smaller base, shows the highest volume covariance (0.60), indicating proportionally strong changes. CAGR trends reveal that BHIM grows fastest in volume, while PhonePe and Google Pay maintain strong growth in both volume and value. Paytm shows relatively flat growth. The closeness of mean and median values suggests fairly symmetrical distributions with minimal skewness. Overall, the data highlights dominance of PhonePe and Google Pay, rapid growth of BHIM, and stable but limited performance of Amazon Pay.

- **Trend Analysis**

Transaction Volume (Mn) 2023-2025
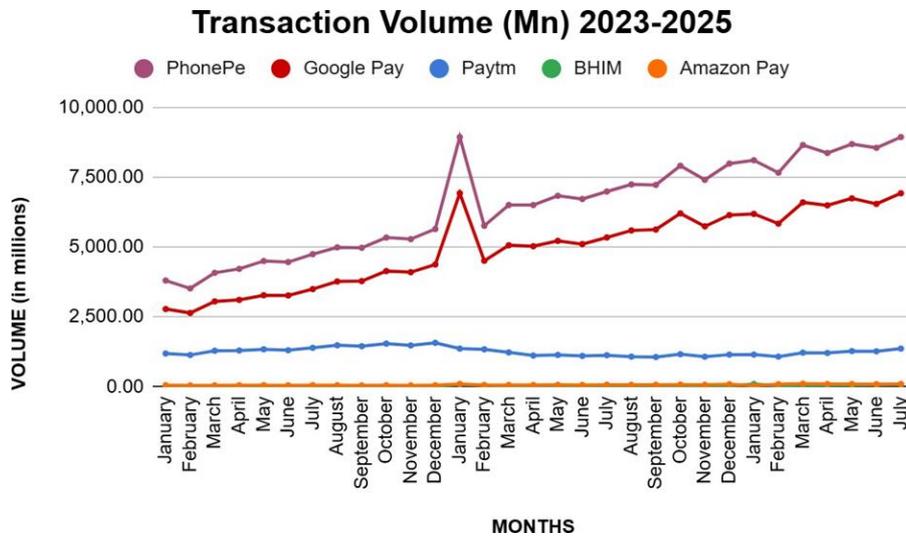
Figure 1: Monthly Transaction Volume of UPI Applications (2023–2025)

The transaction volume for all five major UPI applications shows a steady upward trend from 2023 to mid-2025. PhonePe and Google Pay lead with the highest volumes, displaying consistent growth and seasonal spikes in January and October, likely due to festivals and salary cycles. Paytm grows moderately with smaller fluctuations, while BHIM, from a smaller base, experiences rapid volume growth from 2024 onwards, reflecting increasing adoption. Amazon Pay remains relatively stable, indicating niche usage.

Transaction Value (Cr) 2023-2025
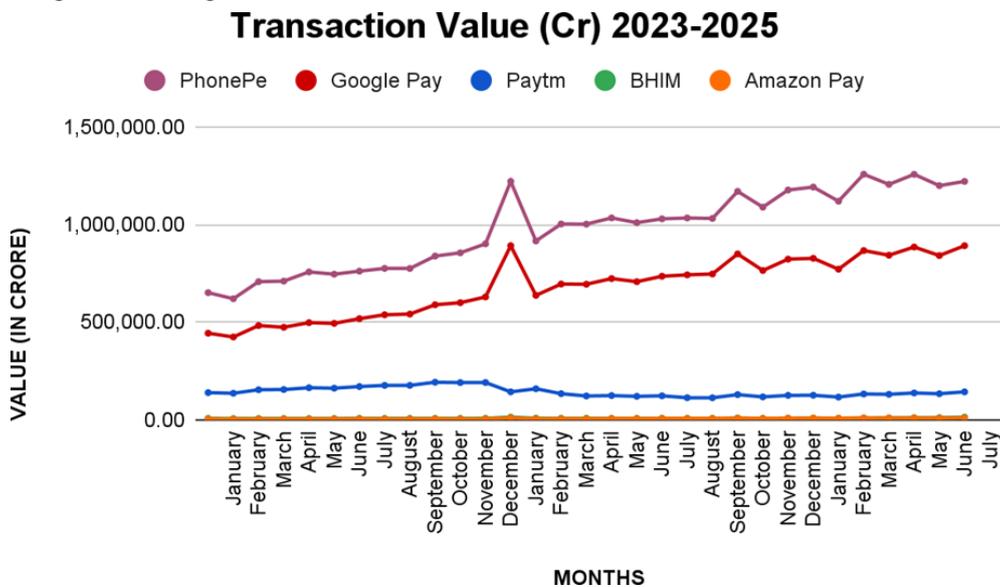
Figure 2: Monthly Transaction Value of UPI Applications (2023–2025)

The transaction value trends align closely with volumes, confirming the positive correlation observed in the descriptive statistics. PhonePe and Google Pay maintain the highest transaction values, followed by Paytm, BHIM, and Amazon Pay. Peaks in value coincide with high-volume months, reflecting spending patterns tied to festivals and promotional activities. Overall, the analysis highlights the dominance of PhonePe and Google Pay, rapid growth of BHIM, and stable but limited performance of Amazon Pay in the evolving UPI ecosystem.

- **Regression Analysis**

Table 2: Regression Analysis of Transaction Volume on Transaction Value Across UPI Applications

App	Coefficient (β1)	Std. Error	t-value	p-value	R^2
PhonePe	174.84	12.13	14.41	0	0.877
Google Pay	139.44	9.78	14.26	0	0.875
Paytm	-6.22	2.76	-2.25	0	0.149
BHIM	1.39	0.38	3.69	0	0.319
Amazon Pay	1.59	0.28	5.73	0	0.531

The regression analysis highlights the relationship between transaction volume and value across five major UPI applications. PhonePe shows the strongest effect, with each 1million increase in volume corresponding to an increase of ₹174.84 crore in value (R^2 = 0.877, p < 0.01). Google Pay also demonstrates a strong positive relationship, with a coefficient of 139.44 (R^2 = 0.875, p<0.01). BHIM and Amazon Pay show moderate positive effects (coefficients1.39 and1.59; R^2= 0.319 and 0.531), indicating that volume increases moderately drive value growth. In contrast, Paytm exhibits a weak and negative relationship (coefficient -6.22, R^2 = 0.149), suggesting limited predictive power. Overall, the findings confirm that PhonePe and Google Pay dominate in translating transaction volume into value, while smaller apps show moderate to weak effects.

- **Correlation Analysis**

Table 3: Correlation Matrix of Transaction Volumes UPI Applications (2023-2025)

	PhonePe	GooglePay	Paytm	BHIM	AmazonPay
PhonePe	1				
GooglePay	0.9988716704	1			
Paytm	-0.3379422821	-0.3293530552	1		
BHIM	0.659618866	0.6529588561	0.02552625891	1	
AmazonPay	0.7951387266	0.7884756451	-0.2577842182	0.4197158949	1

The correlation analysis shows that Phone Pe and Google Pay are very strongly correlated (r= 0.999), indicating nearly identical volume trends. BHIM has moderate positive correlations with PhonePe (r = 0.660) and Google Pay (r = 0.653), while Amazon Pay shows stronger correlations with PhonePe (r = 0.795) and Google

Pay (r = 0.788). Paytm has negative correlations with PhonePe (-0.338), Google Pay (-0.329), and Amazon Pay (-0.258), suggesting its volume trends move independently.

Table 4: Correlation Matrix of Transaction Values Across UPI Applications (2023–2025)

	PhonePe	GooglePay	Paytm	BHIM	AmazonPay
PhonePe	1				
GooglePay	0.9956817088	1			
Paytm	-0.5586632103	-0.5525381382	1		
BHIM	0.7165649145	0.7451469187	-0.1996541489	1	
AmazonPay	0.9503315868	0.9491702311	-0.5382610197	0.8169244902	1

The correlation analysis shows that PhonePe and Google Pay have a very strong positive correlation (r = 0.996), indicating highly similar volume trends. BHIM has moderate to strong correlations with Phone Pe (r = 0.717) and Google Pay (r = 0.745), while Amazon Pay shows very strong correlations with Phone Pe (r = 0.950) and Google Pay (r = 0.949). Paytm has negative correlations with PhonePe (-0.559), Google Pay (-0.553), and Amazon Pay (-0.538), indicating its volume trends move largely independently. Overall, the results reinforce the dominance of PhonePe and Google Pay and the independent behavior of Paytm.

ANOVA

Table 5: ANOVA Results for Monthly Transaction Values Across UPI Applications

Source of Variation	SS	Df	MS	F	p-value	F crit
Between Groups	24,104,619,920,699	4	6,026,154,980,175	478.9	0	2.432
Within Groups	1,887,497,955,181	150	12,583,319,701			
Total	25,992,117,875,880	154				

The ANOVA results indicate a highly significant difference in mean monthly transaction values among the five UPI applications (F = 478.90, p < 0.01, F crit = 2.432). This confirms that at least one app's average transaction value differs significantly from the others. Observing the group means, PhonePe (₹975,958 Cr) and GooglePay (₹682,786Cr) have substantially higher average transaction values than smaller apps like Paytm, BHIM, and Amazon Pay, reflecting their market dominance. Post-hoc analysis can further identify specific pairwise differences.

The study applied a combination of descriptive and statistical tools to examine the adoption, growth, and competitiveness of five major UPI applications—PhonePe, Google Pay, Paytm, BHIM, and Amazon Pay—over 2023–2025.

Descriptive Statistics & Comparative Analysis: PhonePe and Google Pay consistently led the ecosystem with the highest transaction volumes and values. BHIM showed rapid volume growth despite a smaller base, while Paytm displayed moderate

growth, and Amazon Pay remained relatively stable. The analysis of standard deviation and variance indicated that the top apps experience greater fluctuations, whereas smaller apps are more stable. Mean and median closeness suggested fairly symmetrical transaction distributions.

Volume and value trends revealed steady upward trajectories for all apps, with seasonal peaks in January, October, and December reflecting festivals, salary cycles, and promotional activity. BHIM's rapid growth in volume from 2024 onwards highlights its increasing adoption potential.

Regression Analysis Testing the relationship between transaction volume and value confirmed significant positive relationships for PhonePe ($\beta = 174.84$, $R^2 = 0.877$) and Google Pay ($\beta = 139.44$, $R^2 = 0.875$), supporting H_1. BHIMand AmazonPay exhibited moderate positive effects, while Paytm showed a weak negative relationship, indicating limited predictive power.

ANOVA-A highly significant difference in mean monthly transaction values was observed across apps ($F = 478.90$, $p < 0.01$), confirming that market dominance varies significantly, with PhonePe and Google Pay far ahead of others.

Correlation Analysis showed PhonePe and Google Pay near-perfect positive correlations ($r \approx 0.996$–0.999), indicating highly similar volume trends. BHIM and Amazon Pay correlated moderately to strongly with the leaders, while Paytm moved largely independently, reinforcing its distinct adoption pattern.

The findings confirm the dominance of PhonePe and Google Pay, the emergence of BHIM as a rapidly growing platform, and the stable but limited performance of Paytm and Amazon Pay. Transaction volume is strongly associated with transaction value for leading apps, highlighting effective scalability, while market concentration remains high, with over 80% of transactions captured by the top two platforms. The study validates both the relational (regression, correlation) and comparative (descriptive, ANOVA) hypotheses, offering a clear picture of India's evolving UPI landscape.

While the study provides meaningful insights into the adoption and competitiveness of UPI applications, certain limitations must be acknowledged. First, the analysis is based solely on secondary data from NPCI and other official reports, which, although reliable, may not fully capture real-time discrepancies or app-specific reporting variations. Second, the study focuses on a limited time frame of 2023–2025, restricting the ability to assess long-term structural changes in the UPI ecosystem. Third, only five major applications—PhonePe, Google Pay, Paytm, BHIM, and Amazon Pay—are considered, excluding smaller or emerging platforms that might influence future dynamics. Finally, the study emphasizes transaction volume and value, without incorporating user-level behavioral insights such as frequency,

demographic patterns, or satisfaction. These constraints suggest scope for more comprehensive, mixed-method research in the future.

Future research on UPI adoption and competitiveness can expand in several directions. First, extending the study period beyond 2025 would provide a clearer picture of long-term adoption trends and structural shifts in India's digital payment ecosystem. Second, including smaller and emerging UPI applications could highlight competition at the margins and capture niche user segments. Third, combining transaction data with primary surveys or user-level insights may reveal behavioral drivers such as trust, convenience, and demographic influences on app choice. Finally, advanced methods like time-series forecasting, panel regression, or machine learning models could improve predictive accuracy, offering richer insights for policymakers, fintechs, and researchers.

Conclusion

The study of UPI adoption from 2023 to mid-2025 demonstrates that PhonePe and GooglePay continue to dominate India's digital payment ecosystem, consistently leading in both transaction volumes and values. These platforms not only capture the largest market share but also efficiently translate increased transaction volumes into higher transaction values, as confirmed by regression and correlation analyses. BHIM emerges as a fast- growing platform, particularly in transaction volume, reflecting growing user adoption of government-backed or simpler payment solutions. In contrast, Paytm and Amazon Pay maintain stable but comparatively limited adoption, indicating niche user segments and slower growth. Seasonal spikes during January, October, and December highlight the influence of festivals, salary cycles, and promotional campaigns on transaction patterns. ANOVA results further confirm significant differences in mean transaction values across the apps, underscoring market concentration and the dominant position of PhonePe and Google Pay. Overall, the findings reveal a highly concentrated yet dynamic UPI ecosystem, where leading apps shape market trends while emerging platforms like BHIM demonstrate potential for growth. These insights are valuable for fintech players, policymakers, and regulators aiming to optimize strategies, encourage wider adoption, and maintain competitiveness in India's rapidly evolving digital payments landscape.

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