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"GROWTH OF DIGITAL PAYMENTS IN INDIA: AN ANALYSIS OF TRENDS AND PERFORMANCE"

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ABSTRACT:

Digital payments have revolutionized the payment system in India, especially with mobile payments gaining significant traction over the past few years. This study aims to examine the growth, trends, and performance of digital payments in India for the period 2017–18 to 2021–22. The nature of this study is descriptive and analytical, and secondary data have been used for the analysis. The data used for the analysis are primarily collected from the Reserve Bank of India and National Payments Corporation of India. For the analysis, the number of transactions, transaction value, and growth rate of transactions for the study period have been considered. It is found that there has been a significant rise in digital payment transactions for the study period. UPI recorded the highest growth and emerged as one of the key retail payment systems in India, growing at a much faster rate than other modes of payment such as IMPS, NEFT, and card payments. The study concludes that India has witnessed a shift toward instant payments and mobile-based payment systems. However, India needs to ensure digital infrastructure, cybersecurity, customer awareness, and accessibility to realize the potential of digital payments for financial inclusion.

KEYWORDS: *Digital Payments, Unified Payments Interface (UPI), Digital Banking, National Electronic Funds Transfer (NEFT), Immediate Payment Service (IMPS).*

1. INTRODUCTION:

Payment systems in India have witnessed a paradigm shift with the proliferation of technological advancements in the banking and financial services sector. With the rise of internet services and smartphones and the consequent digitization of society, there has been a noticeable shift away from cash-based transactions to electronic modes of payment. The Reserve Bank of India has simultaneously worked towards enabling safe, secure, efficient, and accessible payment systems that promote a cashless economy [1].Electronic modes of payment include National Electronic Funds Transfer (NEFT), Real-Time Gross Settlement (RTGS), Immediate Payment Service (IMPS), Unified Payments Interface (UPI), debit and credit cards, prepaid payment instruments, and Aadhaar Enabled Payment System (AePS). These payment systems have helped in increasing the ease, speed, and accessibility of financial transactions in India [2].

The financial year 2017-18 to 2021-22 saw a significant rise in the usage of digital payments, primarily led by mobile-based digital payments. Unified Payments Interface (UPI) emerged as the most popular retail payment system in India and saw a substantial rise in the number of transactions and value of payments [3]. Other modes of digital payments such as NEFT, IMPS, and card payments also witnessed significant growth and played an essential role in India's digital payment ecosystem. Hence, it becomes necessary to look at the trends and growth of digital payments in India for the chosen period of analysis.The COVID-19 period highlighted the significance of contactless and remote payment methods as consumers and businesses increasingly engaged in digital channels for financial transactions. By the 2021-22, UPI accounted for a significant portion of India's retail digital payments [4]. Nevertheless, some issues such as cyber security, digital literacy, technology access and customer awareness remained important.

In this context, the present study examines the growth and performance of digital payments in India from 2017-18 to 2021-22 using secondary data. The study mainly analyses trends in transaction volume and value across major digital payment modes.

2. REVIEW OF LITERATURE :

Sivathanu (2019) examined the adoption of digital payment systems in India in the context of demonetization using data from 766 respondents. The study found that behavioural intention and innovation resistance significantly influenced the actual use of digital payments. It also observed that consumers' preference for cash affected digital payment adoption, indicating that both technological acceptance and traditional payment habits influence the use of digital payment systems in India [5].

Chakrabarty, Jha and Ray (2020) assessed the impact of demonetization on the growth of digital payments in India using time series analysis. The results established that the impact of demonetization on the majority of digital payment modes was short-term. The study recommended that India needs to provide infrastructure and technology-led support and promote sustained adoption of digital payments for long-term growth [6].

Dhal, Kumar and Ansari (2021) investigated the role of digital payments and consumer experience in India using an empirical survey. The results revealed that policy and technological interventions supported the growth of digital payments in India. The study emphasized the need to focus on ease and convenience, consumer protection, and efficient grievance redressal mechanisms to boost adoption of digital payments [7].

Jain and Chowdhary (2021) analysed the impact of COVID-19 pandemic on Indian consumers' intention to adopt digital payment systems. The study unveiled that technology acceptance factors had a significant influence on the intention of Indian consumers to embrace digital payments. The results further established that COVID-19 pandemic increased the relevance and adoption of contactless digital payment modes in India [8].

Singh and Rana (2021) assessed the challenges associated with the adoption of cashless payment modes in India using a pool of 900 respondents. The results demonstrated that institutional and technology-related factors influenced the adoption of cashless payments in India. Although most consumers regarded cashless payments as convenient and useful, inadequate technological literacy presented a major hindrance to adoption among the unbanked [9]. Mani and Iyer (2022) studied the diffusion of digital payments in India between 2011-12 and 2020-21 by analyzing the transaction volume and value. The article revealed an increase in both volumes of digital transactions and identified several factors that influence their diffusion, including technological, institutional, and economic ones [10].

Concluding that the previous research has identified multiple factors influencing the growth of digital payments in India, including technology, demonetization, consumer behavior, government actions, and the COVID-19 pandemic. However, most of the articles analyzed consumer behavior and adoption of digital payment methods and focused on specific factors affecting the growth of payments [5]–[10].

3. RESEARCH GAP :

The previous articles have analyzed the adoption of digital payment methods from the perspective of their users, investigated their behavioral patterns, and emphasized the impact of certain factors, such as demonetization, government regulations, and the pandemic, on the growth of digital payments. Nonetheless, there has not been much research analyzing how exactly the transaction volumes and values of major modes of digital payments have evolved from 2017-18 to 2021-22. Therefore, this study aims to explore the growth of digital payments in India in terms of volumes and values of transactions.

4. OBJECTIVES OF THE STUDY :

The study has the following objectives:

i. Study the growth of digital payments in India during 2017-18 to 2021-22.
ii. Analyse trend in transaction volume and value of the major digital payment modes.
iii. Examine the growth and performance of Unified Payments Interface (UPI).
iv. Identify major developments and challenges pertaining to digital payments in India.

5. RESEARCH METHODOLOGY :

The present study is descriptive and analytical in nature and is fully based on secondary data covering the period from 2017-18 to 2021-22. Data has been collected primarily from the Reserve Bank of India (RBI), National Payments Corporation of India (NPCI), RBI Annual Reports, Payment System Indicators and other official publications [1], [3], [4]. Transaction volume, transaction value and annual growth rate are used to analyse the growth and performance of the digital payments. Particular attention is paid to UPI, along with other major payment modes wherever comparable data is available. Percentage analysis, annual growth rate and trend analysis are used for interpretation of the data.

Annual Growth Rate (%) = [(Current Year Value − Previous Year Value) / Previous Year Value] × 100

Scope of the Study : The study has been confined to the growth and development of digital payment systems in India during 2017-18 to 2021-22. The study mainly focuses on changes in transaction volume and value and does not include any consumer-level primary survey, etc.

6. DATA ANALYSIS AND INTERPRETATION :

6.1 Overall Growth of Digital Payments in India :

The growth of digital payments can be understood on the basis of changes in the volume and value of transactions. Table 1 below provides an insight into the overall growth trends in various modes of digital payments in India during the study period.

Table 1: Growth of Digital Payments in India

Financial Year	Volume (Lakh Transactions)	Annual Growth in Volume (%)	Value (Rs. Crore)	Annual Growth in Value (%)
2017–18	1,45,902	—	13,69,86,734	—
2018–19	2,34,339	60.61	16,38,52,285	19.61
2019–20	3,43,455	46.56	16,23,05,934	-0.94
2020–21	4,37,445	27.37	14,14,59,089	-12.84
2021–22	7,19,768	64.54	17,44,01,233	23.29

Source: *Reserve Bank of India, Annual Reports and Payment System Indicators* [4].
Annual growth rates calculated by the author.

Interpretation: Table 1 above indicates that there has been a significant rise in the volume of digital payment transactions in India during the study period. It increased from 1,45,902 lakh transactions in 2017-18 to 7,19,768 lakh transactions in 2021-22. In other words, the volume of digital payment transactions has risen almost five times during the five-year period. This suggests a marked shift towards electronic/digital modes of payments in India.

The year-on-year growth of digital payment transactions was particularly spectacular during the study period. It grew at an amazing rate of 60.61 percent in 2018-19, followed by another healthy growth of 46.56 percent in 2019-20. The growth slowed down to 27.37 percent in 2020-21 but picked up once again at a healthy rate of about 64.54 percent in 2021-22.

On the other hand, the value trends portray a different story. The value of digital payments rose from Rs.13,69,86,734 crore in 2017-18 to Rs.17,44,01,233 crore in 2021-22. In other words, the value of digital payments transactions rose at a healthy growth rate of about 23.29 percent during the study period. However, the value of digital payments transactions declined slightly during 2019-20 and once again during 2020-21 before registering a healthy growth of about 23.29 percent during 2021-22. One significant observation that can be made on the basis of the data given in Table 1 above is that the volume growth has been much higher than the value growth. This suggests that digital payment systems in India are being increasingly used for a larger number of small-value transactions. The phenomenal rise in usage of the UPI systems accounts for the steep rise in the volume of digital payments transactions in India.

6.2 Growth and Performance of Unified Payments Interface (UPI) : One of the fastest-growing digital payment instruments in India in the study period was Unified Payments Interface (UPI). Table 2 below shows the growth of UPI in terms of transaction volume and value [3].

Table 2: Growth of UPI Transactions in India

Financial Year	Volume (Million)	Annual Growth in Volume (%)	Value (Rs. Crore)	Annual Growth in Value (%)
2017–18	915.2	—	1,09,832	—
2018–19	5,353.40	484.93	8,76,971	698.47
2019–20	12,518.60	133.84	21,31,730	143.08
2020–21	22,330.80	78.38	41,03,658	92.5
2021–22	45,957.40	105.8	84,17,572	105.03

Source: National Payments Corporation of India, UPI Product Statistics [3]. The financial year aggregates are calculated from the monthly statistics while the annual growth rates have been computed by the author.

Interpretation: As can be seen from the table above, the number of transactions processed through UPI in India grew significantly between 2017-18 and 2021-22. For instance, the number of transactions increased from 915.2 million to 45,957.4 million. Similarly, the value of transactions rose from ▪ 1,09,832 crore to ▪ 84,17,572 crore. In 2018-19, the volume and value of transactions grew the most at 484.93% and 698.47%. Although the growth rate slowed down in 2019-20 and 2020-21, UPI still registered more than 100% growth in transaction volume and value in 2021-22. Overall, the table demonstrates that UPI is a popular digital payment instrument in India.

6.3 Comparative Performance of Major Digital Payment Modes : The adoption of digital payments was not uniform across the major modes of digital payments. These payment modes recorded different levels of transaction volumes and growth rates during 2020-21 and 2021-22. Table 3 provides a comparative analysis of the performance of these digital payment modes in terms of volume and growth.

Table 3: Comparative Performance of Major Digital Payment Modes

Payment Mode	2020–21 Volume (Lakh)	2021–22 Volume (Lakh)	Growth (%)
UPI	2,23,307	4,59,561	**105.8**
IMPS	32,783	46,625	**42.22**
NEFT	30,928	40,407	**30.65**
Credit Cards	17,641	22,399	**26.97**
Debit Cards	40,146	39,384	**–1.90**

Source: Reserve Bank of India, Payment System Indicators [11]. Growth Calculated by the author

Interpretation: As evident from the table, there is a significant variance in the growth rates of different digital payment modes during 2021-22. UPI recorded the highest growth of 105.80%, followed by IMPS (42.22%), NEFT (30.65%) and Credit Cards (26.97%). Surprisingly, Debit-Card transactions declined slightly during the year by 1.90%. Thus, it can be concluded that UPI is gaining significantly higher acceptance as a preferred mode of digital payment in India.

7. MAJOR FINDINGS OF THE STUDY :

Based on the analysis for 2017–18 to 2021–22, the following major findings have been obtained:
i. There has been a significant increase in digital payments: The number of digital payment transactions increased significantly, indicating a growing trend of adopting electronic payment methods in India [4].
ii. The fastest-growing digital payment mode is UPI: UPI is the fastest-growing digital payment mode, with its transaction volume soaring from 915.2 million in 2017–18 to 45,957.4 million in 2021–22 and its transaction value jumping from ▪ 1,09,832 crore to ▪ 84,17,572 crore [3].
iii. UPI has overtaken other payment modes: UPI has overtaken other payment modes in terms of transaction volume during 2021–22, registering a phenomenal jump of 105.80% against 42.22% and 30.65% growth in IMPS and NEFT, respectively [11].
iv. Card payments have recorded mixed trends: Credit-card payments recorded an increase of 26.97% in 2021–22, while debit-card payments declined slightly by 1.90% [11].
v. There is a shift towards instant and mobile payments: The rapid rise of UPI points to a growing preference for convenient, instant and mobile payments.
vi. Offline digital payments and UPI123Pay have improved accessibility: Initiatives such as offline digital payments and UPI123Pay have helped provide digital payment facilities to people with limited internet connectivity and access to feature phones [4]. Overall, the findings indicate a significant boom in digital payments in India during the study period, with UPI being the biggest contributor to retail digital payments.

8. CHALLENGES TO THE GROWTH OF DIGITAL PAYMENTS IN INDIA:

Although the use of digital payments in India witnessed unprecedented growth figures during the research period, there are still a number of challenges that hinder its expansion on the national level:

1. Digital Infrastructure and Connectivity: The availability of internet coverage and cellular networks is one of the primary conditions for widespread adoption of digital payments, which may be unavailable in some rural areas [1];

2. Cyber Security and Digital Frauds: The occurrence of cyber security issues and frauds undermine customer confidence in the safety of digital transactions, which requires special attention to maintaining a high level of protection [12];

3. Digital and Financial Literacy: The absence of knowledge and understanding of how digital payments work and what security measures should be taken when authorizing financial operations discourage would-be customers [1];
4. Point of Sale Infrastructure: The insufficient development of POS terminals and other payment tools hinder the ability of Indians to make purchases in a contactless manner [1];
5. Customer Protection and Grievance Redressal: In cases of unauthorized transactions, technical failures, and other issues, customers need to be provided by efficient mechanisms for dispute resolution [12].

For this reason, it is crucial to ensure the accessibility of digital infrastructure, maintain security and reliability of transactions, and educate people on the benefits and nuances of cashless payments to achieve financial inclusion in India.

9. SUGGESTIONS AND RECOMMENDATIONS :

Based on the findings and challenges of the study, the following suggestions are made:
i. Boosting the growth of the digital infrastructure such as internet connectivity and payment infrastructure should be prioritized in rural and semi-urban areas to increase the usage of digital payments [1].
ii. Awareness programs must be conducted regarding the safe usage of digital payments, fraud prevention and safety measures for the users who are new to digital payments or don't have much experience with them [1].
iii. Cyber security measures such as authentication, fraud monitoring and protection of customer information at the level of banks and payment service providers must be bolstered to ensure customer confidence in making digital payments [12].
iv. The accessibility to payment processing facilities such QR-based payments should be promoted amongst small-scale merchants as well in areas where payment infrastructure is weak [1].
v. Encouraging the development of more customer-friendly and inclusive modes of payment settlement and improving grievance redressal can go a long way in ensuring increased adoption of digital payments. Expanding the reach of offline payments and promoting UPI123Pay can help in this regard [4], [12].

Overall, the future of digital payments in India must focus on building a secure, trustworthy, accessible and customer-friendly ecosystem rather than simply focusing on increasing the transaction value.

CONCLUSION :

The study shows that payments in India witnessed remarkable growth in terms of transaction volumes during 2017-18 to 2021-22. The Union Pay Interface or UPI emerged as the major driver of this growth, witnessing a substantial rise in terms of both volume and value [3]. Its growth rate was substantially higher than Immediate Payments Service (IMPS), National Electronic Funds Transfer (NEFT) and card based payments during 2021-22, indicating the changing dynamics in favor of real time as well as mobile based payments.

However, there is also a counter trend, which is visible in terms of transactions through debit card as witnessed by their fall in 2021-22 [11]. Although India saw remarkable progress, there are still challenges relating to digital infrastructure, cyber security, digital awareness and customer protection, which will need to be addressed. The study concludes that India has seen a major shift towards digital payments during the selected time horizon and improving the security, accessibility and related infrastructure will be vital to their inclusive and sustainable growth.

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