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CASH V/S DIGITAL PAYMENT TRANSACTION IN INDIA

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ABSTRACT
Payments are an inevitable part of our daily transactions, be it a consumer to a business or a business to a business. Payments raise a country's GDP; thus, it is mandatory that the payment systems should be "safe, secure, sound, efficient, accessible and authorized. India's digital payment volume has climbed at an average annual rate of about 50 percent over the past five years. India has multiple payment systems that spur the growth of payments. Even if India's digital payments environment has grown, there is still a need for currency, which the pandemic has made more apparent. It may seem odd that there is a rise in digital payments while the amount of cash in circulation is increasing, which calls for a study of the several reasons people maintain cash. This study, which employs descriptive analysis and empirical insights, concludes that, although the usage of cash as a payment medium is still declining, the precautionary and store-of-value reasons are responsible for the sustained growth in currency demand. This demonstrates how digital payments are increasingly replacing cash in transactional settings. Even while income is still the primary factor influencing currency demand in India, the positive income effect may be mitigated by the digital payments industry's explosive expansion and statistically significant inverse relationship with cash.
Keyword: Payments, Cash, Currency, Industry, Consumer

1. INTRODUCTION

The Reserve Bank of India (RBI) paper titled "Cash versus Digital Payment Transactions in India: Decoding the Currency Demand Paradox" discusses the simultaneous growth of cash and digital payments in India. The paper explains the "currency demand paradox" and attributes it to several factors, including:

1. Precautionary motives: Cash is seen as a safety cushion in uncertain times, such as the COVID-19 pandemic.
2. Store of value: Cash is still a preferred savings instrument.
3. Decline in opportunity costs: The interest rate on savings has declined.
4. Large informal economy: Cash is the only viable option for daily transactions in rural areas where access to formal financial institutions is limited.

5. Government direct benefit transfers: The government promotes both cash and digital modes.

Over the past 20 years, there has been a revolutionary change in India's payments environment. The circumstances brought on by the pandemic encouraged the use of digital payments even further (Das, 2021). The success of the government's and the Reserve Bank of India's (RBI) policy thrust is evident in the rapid growth of digital retail payments, spearheaded by the Unified Payments Interface (UPI), with compound annual growth rates (CAGRs) of 27% and 51% in volume and value terms, respectively, between 2016–17 and 2022–23. The amount of currency in circulation (CiC) is still increasing despite the boom in digital payments; the CiC-to-GDP ratio peaked in 2020–21 at 14.4%. Because cash and digital payments are seen as interchangeable, it appears illogical that both are growing at the same time. This creates a "currency demand" conundrum that calls for a thorough examination of the factors that influence the various payment methods.

Understanding this paradox may be helpful for policy in a number of ways. In order to establish the proper supply of banknotes, central banks—which are the only entities authorized to issue money—must first project currency demand while taking technical advancements in payments into account. Second, changes in the demand pattern for currency can have an impact on the way monetary policy is implemented and liquidity management procedures are carried out, as currency is a major factor in system-wide liquidity. Third, the degree to which cash and digital payment modes are substituted can help determine the best retail payment strategies as well as make it possible to evaluate how effective digital payment initiatives are.

In light of this, this research aims to clarify the contradiction by elucidating the causes of the atypically high cash demand observed during the COVID-19 pandemic and investigating the diverse incentives underlying cash usage in India. We provide a number of stylized facts to support our analytical viewpoints. We calculate currency demand as a function of its immediate drivers, such as income, interest rate, digital payments, and precautionary variables, such as credit-to-deposit ratio and uncertainty, using an autoregressive distributed lag model.

2. STATEMENT OF THE PROBLEM

In India, digital payment transactions have grown at an unparalleled rate during the past three years (2020–2023). India leads the world in digital payments between accounts, accounting for 40% of all such transactions in 2021. In terms of digital transactions from account to account, India surpasses China. The government has launched a number of programs to encourage the use of digital payments. The economy saw the COVID-19 epidemic in 2020 and the demonetisation of currency in 2016 during this period of supporting digitalization. Unpredictable shocks like demonetisation and COVID-19 may have an impact on India's trends in both individual and overall digital payments.

An evaluation of the digital payment system from the viewpoint of its users has been done in order to support the conclusions drawn from the data provided by the RBI and NPCI. We looked at the direct relationship between behavioral intention and perceived ease of use, hedonic incentive, usage patterns, social influence, self-efficacy, perceived trust, perceived security, and grievance redressal method in order to identify the elements influencing the adoption of digital payments. Additionally, the role that digital infrastructure plays as a mediator between behavioral intention and the uptake of digital payments and cash payment is investigated.

3. SIGNIFICANCE OF THE STUDY

The evaluation of India's current digital payment systems and cash system is included in the report. According to the RBI's definition, the study's scope is restricted to measuring the digital payment systems and cash payment system that are currently in use in India, including RTGS, NEFT, PPIs, UPI, IMPS, NACH, and credit card payments. The investigation included identifying the trends and patterns that individual digital payments in India were following. It also included projections for the

volume and value growth of all retail digital payments in the future. The report also includes the reasons driving the expansion of digital payment systems in India in order to better comprehend the growth outlook. The factors impacting users' adoption of digital payments are also included in the study.

4. OBJECTIVES OF THE STUDY

1. To examine pattern of the trend followed by Indian digital and cash payments
2. To forecast future growth of India's digital payments

5. RESEARCH METHODOLOGY

The approach used to examine the statistics on digital transactions in India from the fiscal years 2017–18 to 2022–23 is described in this section. It explains the data sources that were used as well as the data analysis techniques.

Sources of Data: Official publications and reports from regulatory bodies like the Ministry of Electronics and Information Technology (MeitY) and the Reserve Bank of India (RBI) serve as the main source of data for this study. For every fiscal year, these reports offer detailed data on digital transactions, including transaction values and volumes.

Techniques of Analysis: Using the following techniques, the trends and effects of digital transactions in India were examined:

1. Descriptive statistics: For each fiscal year, measures like the mean, median, and standard deviation of the total number of digital transactions and their total value were determined using descriptive statistics. An improved comprehension of the general patterns and variances is made possible by these statistics, which offer an overview of the data's central tendencies and dispersion.

2. Trend Analysis: Over the course of six fiscal years, trends in the total number of digital transactions and their total value were examined to determine the general direction and amount of changes. In order to find any notable rises, declines, or stability, the data points had to be plotted on a line graph, and the trend lines had to be examined.

3. Comparing Transaction Volume and Value: To look at the relationship between the total number of digital transactions and their total value, a comparison analysis was conducted. Plotting the two variables on the same graph allowed for the visual exploration of any patterns or possible linkages. The relationship between transaction volume and value may be measured using statistical methods like correlation analysis.

6. RESULTS AND ANALYSIS

Consumers and organizations have been moving more and more toward digital payments over the past ten years due to changes in legal and regulatory frameworks, user preferences, and technology advancements. The growth of mobile money, electronic wallets, and online banking has been aided by smartphones and increased internet access. Point-of-sale (POS) terminal availability has increased concurrently with a decline in the network of traditional cash access points, such as bank branches and automated teller machines (ATMs). Moreover, there is a growing need for quicker and real-time payments as people's interactions and shopping habits become more digital. Furthermore, with the increased competition from non-bank payment service providers, banks are no longer the exclusive source of payment services.

A gradual transition from cash, checks, and paper-based credit transfers to digital instruments including direct debits, online credit transfers, card payments, and e-money transfers has been facilitated by these general trends. For instance, across the countries included in the Red Book figures, the average yearly number of digital payments made by each individual rose from 179 in 2012 to 332 in 2021. Fast payment systems (FPS) have also proliferated globally. Fast payment systems have been introduced by more than 60 jurisdictions, and others are in the process of doing so. FPS allows for the

processing of small-value account-based transactions so that money are available to the payee right away. These services are available (almost) around-the-clock.

TABLE NO. 6.1 DIGITAL TRANSACTIONS IN INDIA

Financial Year	Total number of digital transactions in India (in crore) #	Financial Year	Total value of digital transactions in India (in lakh crore) #
2017-18	2,071	2017-18	1,962
2018-19	3,134	2018-19	2,482
2019-20	4,572	2019-20	2,953
2020-21	5,554	2020-21	3,000
2021-22	8,840	2021-22	3,021
2022-23	9,192*	2022-23	2,050*

Let's examine the patterns in the total number and total value of digital transactions over time in order to make sense of the provided data table on digital transactions in India:

1. Total Number of Digital Transactions in India:

This indicates a growing trend in the use of digital payment systems. The total number of digital transactions in India has grown steadily over time.

• As of December 31, 2022, the overall number of digital transactions has increased from 2,071 crore to 9,192 crore* between the fiscal years 2017–18 and 2022–23.

• The number of digital transactions has grown at a notable rate; the largest increase was seen between 2020–2021 and 2021–2022, when it climbed by almost 59%.

•The data points to a transition towards a more cashless economy in India by showing a consistent and significant increase in the use of digital payment methods.

2. Total Value of Digital Transactions in India:

• The total value of digital transactions has grown noticeably over time, much like the total quantity of digital transactions.

• As of December 31, 2022, the total value of digital transactions increased from 1,962 lakh crore to 2,050 lakh crore* over the fiscal years 2017–18 and 2022–2023 (as of this writing).

• Year-over-year variations in the overall value of digital transactions are evident in the data. In the fiscal year 2020–21, there was a notable growth, and in the years that followed, it stayed quite stable.

• The steadily rising total value of digital transactions is indicative of the growing financial influence of digital payment methods on the Indian economy.

3. Correlation between Total Number of Digital Transactions and Total Value of Digital Transactions:

The data clearly shows that the total number of digital transactions in India and their total value are positively correlated.The entire value of digital transactions tends to rise in tandem with the total number of transactions, suggesting that a greater volume of transactions has a greater financial impact

on the economy.

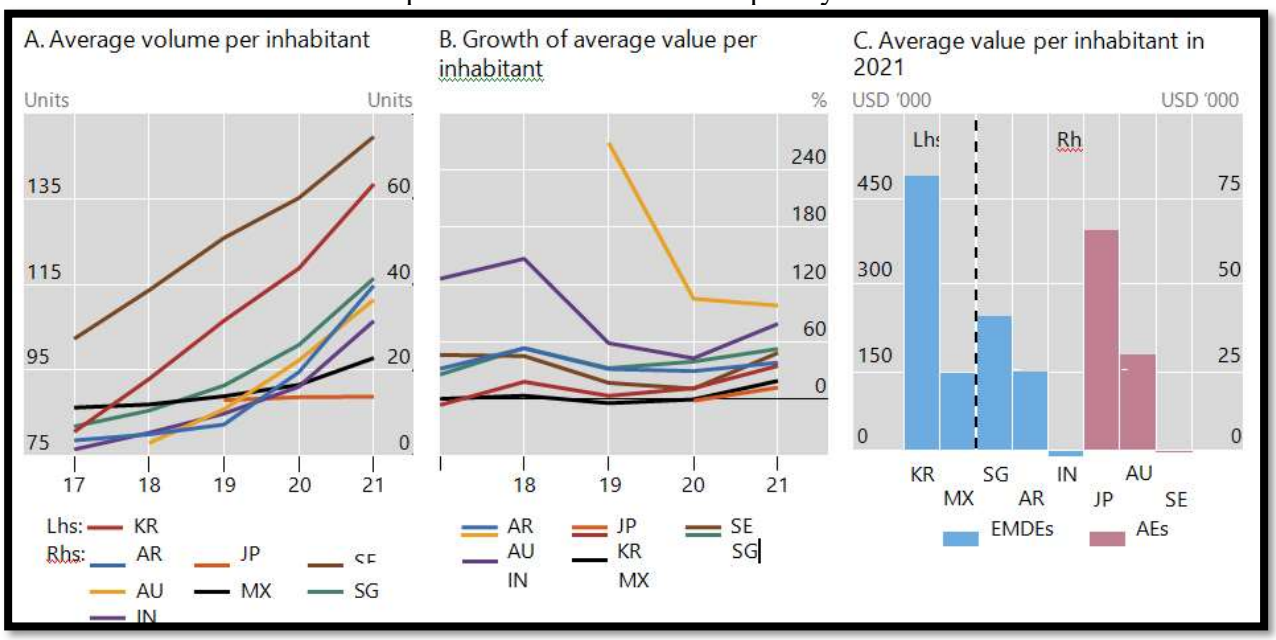
4. Notable Observations:

• The financial year 2021–2022 is notable for having experienced a notable increase in the overall quantity and total value of digital transactions. This increase is a sign of a significant increase in digital transactions that year.

• The exact numbers for the entire year are not yet known because the data for the fiscal year 2022–2023 is only accessible until December 31, 2022. Nonetheless, compared to the prior fiscal year, the data up to December 2022 already demonstrates a considerable increase in transaction volume and value.

Fast payments usage reached new heights

The number of quick payments per resident increased steadily and peaked in 2021. For every nation for which we have three years' worth of data, the number of quick payments per resident increased by 30% on average between 2020 and 2021.23 Furthermore, the average value of quick payments per resident increased at a rate comparable to or faster than in prior years in several countries.



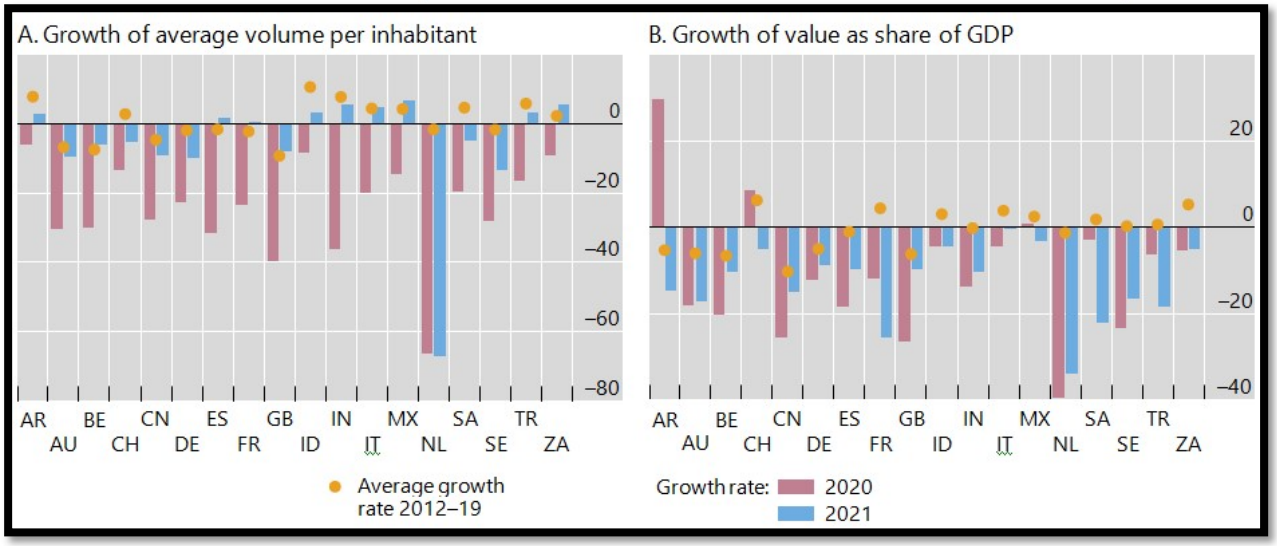
Source: CPMI Red Book statistics

Cash withdrawals declined more slowly

The amount and worth of cash withdrawals decreased in 2021, although there were notable national variations. This was less than in 2020. The amount of withdrawals decreased in 2021 compared to 2020 in half of the countries, primarily AEs; in contrast, the amount of withdrawals increased marginally in other countries, primarily EMDEs. All nations saw a decrease in withdrawals in terms of value, albeit not as sharply as the previous year. In general, the growth rate of cash withdrawals in 2021 was almost everywhere either less than or equal to the rate that existed before to the epidemic. These trends imply that there is still a need for currency, even though it is decreasing.

As a result of the generally greater GDP per capita in AEs, the average value per withdrawal in 2021 was higher in Australia, Germany, the Netherlands, Switzerland, Sweden, and the United Kingdom than in Argentina, India, Mexico, and South Africa. Furthermore, the average withdrawal values also show the presence of ATMs: as shown in Graph 6, second panel, the average withdrawal value has largely increased (withdrawals index values above 100) in countries where the number of ATMs has decreased over the past ten years (i.e., countries with an ATM index value below 100). In contrast,

nations with ATM index values greater than 100 exhibit an increase in ATM availability with time.

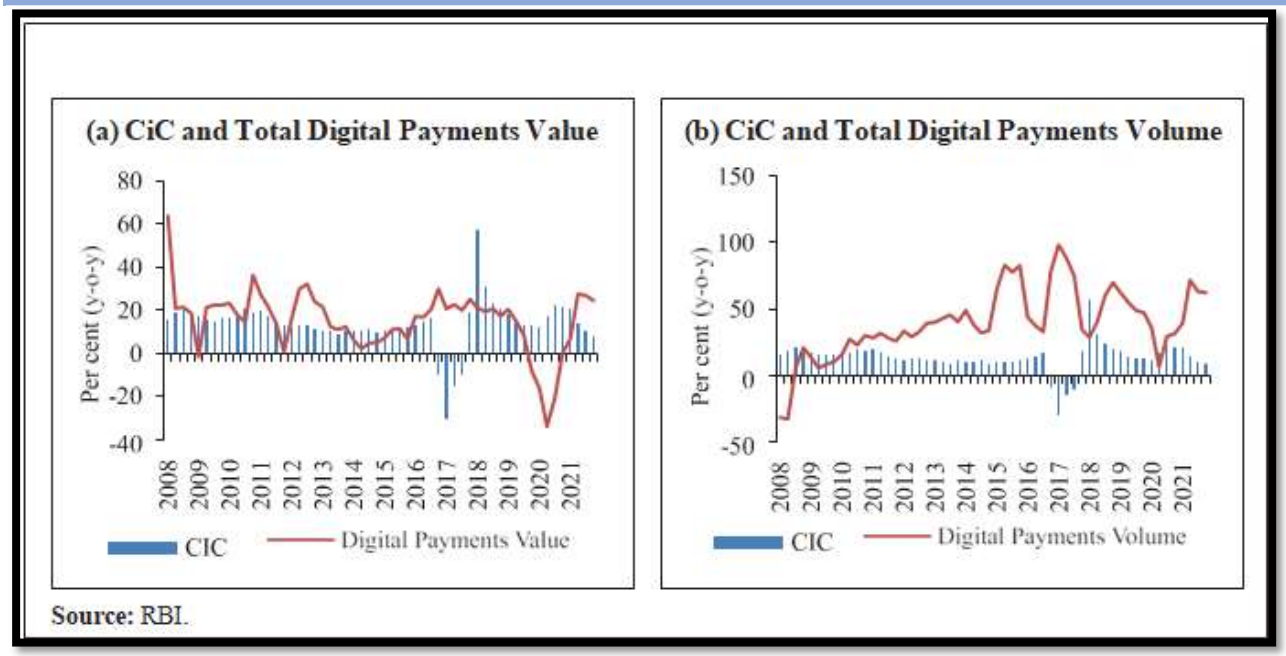


Source: CPMI Red Book statistics

Trends in Digital Payments

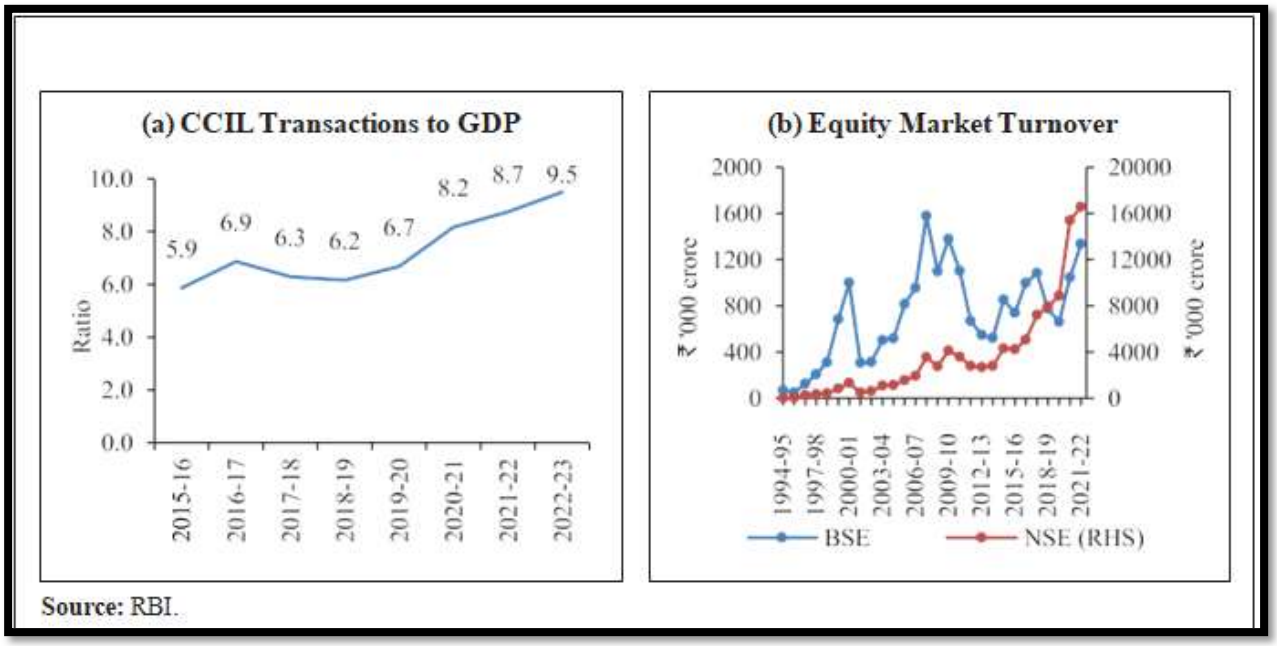
Driven by regulatory actions and evolving payment patterns, the digital payment landscape has experienced a remarkable growth in the last several years. India's percentage of worldwide real-time digital payments increased by 6 percentage points from 40% to 46% in 2022, the highest level ever (ACI Worldwide and worldwide Data, 2023). People used contactless payment methods, which are safe and convenient, as a result of the pandemic's reduction in personal interaction. As a result, in 2021–2022, the volume and value of digital payments increased by 64% and 23%, respectively. The equivalent growth rates in 2022–2023 were 58% and 19%, respectively. The underlying payment infrastructure grew along with the growing demand for digital transactions, leading to a rise in the quantity and density of point of sale (PoS) terminals and quick response (QR) codes.

Remarkably, the usage of digital devices spurred by the pandemic keeps increasing. Growing digital awareness, expanded smartphone and debit card use, and targeted welfare payments during the epidemic have all contributed to this change. It appears that digital payments are replacing cash-on-delivery (CiC) in the recent past.



Source: RBI.

The increasing trend towards digital modes is further supported by the secular drop in traditional paper-based clearing in recent years. From 2018 to 2019, there has been an increase in settlements through the Clearing Corporation of India Limited (CCIL)-run systems, including government securities clearing, forex clearing, and rupee derivatives. Notably, there was a notable spike in these transactions during the pandemic. Since the pandemic's start, retail investors have also been more interested in the equity markets through internet brokerages, which has led to significant market turnover. Since UPI and cards are the preferred methods of payment for loading funds into trading accounts, the increased activity in the equity market may have also contributed to a rise in UPI and card transactions.



Source: RBI.

The study's conclusions, which are based on an analysis of digital transaction data for India from the 2017–18 fiscal year to the 2022–2023 fiscal year, are presented in this part. The findings are arranged

to highlight the general trends and patterns in the quantity and value of all digital transactions over time.

Total Number of Transactions Made Online: Over the course of six fiscal years, the data shows a steady increase in the overall number of digital transactions in India. Digital transactions reached 3,134 crore in 2018–19, up from 2,071 crore in 2017–18. The quantity then increased to 5,554 crore transactions in 2020–21 and 4,572 crore transactions in 2019–20. The amount of transactions increased significantly to 8,840 crores in the fiscal year 2021–2022. It is noteworthy, although, that the data for the fiscal year 2022–2023 is not comprehensive, as it only includes information through December 2022, totaling 9,192 crore transactions. The 2022–2023 full-year numbers could differ, thus it's important to examine them carefully.

Total Value of Digital Transactions: The data additionally shows that India's total value of digital transactions is trending upward. The overall value increased from 1,962 lakh crore in 2017–18 to 2,482 lakh crore in 2018–19. The value increased further, reaching 3,000 lakh and 2,953 lakh crores in 2019–20.

The valuation of the financial year 2021–2022 increased marginally to 3,021 lakh crore. The reported value for the incomplete data for 2022–2023 (up to December 2022) is 2,050 lakh crore. But as was already indicated, this preliminary statistic may not match the figures for the entire fiscal year.

Comparing the Value and Volume of Transactions: Interesting insights can be obtained by comparing the overall number of digital transactions with their total value. Although the value and volume of transactions have both generally increased over time, there are several cases where the growth rates are not the same. For instance, during 2018–19, the overall value climbed by about 26%, whereas the transaction volume increased by about 51%. Comparably, between 2021 and 2022, there was a notable 66% increase in transaction volume, but just a 1% increase in total value. These discrepancies point to changes in the typical transaction size or a tendency toward lower-value transactions at particular times. Additional insights into the relationship between transaction volume and value can come from additional analysis and correlation testing.

Overall, the data show that both the overall number of digital transactions and their total value have been steadily increasing in India. The financial year 2021–2022 was notable for having a significant rise in the number and value of transactions. However, because the data for the fiscal year 2022–2023 is inadequate, it is imperative to evaluate it cautiously.

Interpreting the significance of the results from the analysis of digital transaction data in India for the fiscal years 2017–18 to 2022–23 is the goal of the discussion section. It investigates the wider ramifications of the increase in digital transactions for the Indian economy and offers insights into the trends and patterns seen.

Patterns & Trends: Both the overall number of digital transactions and their total value over time have shown a steady increase tendency, according to the report. This increase shows that digital payment methods are becoming more widely accepted and used in India. A notable transition towards digital transactions is indicated by the financial year 2021–2022, which exhibits a notable increase in both transaction volume and value. consequences for the economy of India The Indian economy would be affected in a number of ways by the rise in digital transactions.

1. Improved Financial Inclusion: By giving previously unbanked people access to financial services, the rise in digital transactions helps to boost financial inclusion. Digital payment techniques make it easier and more convenient for people, especially those living in rural areas, to engage in formal financial institutions.

2. Diminished Informal Economy: The amount of the informal economy may decline as a result of the transition from cash to digital transactions. Because digital transactions provide a digital trail, financial activity may be better tracked and monitored, which may improve tax compliance and formalize

economic activity.
3. Greater Efficiency and Transparency: Financial transactions made through digital means are more transparent and efficient. They lessen reliance on antiquated paper-based procedures by enabling faster and more secure transactions. By simplifying financial processes and cutting expenses, this efficiency helps people, companies, and the government.
4. Stimulated Economic Growth: An increase in digital transactions may help to boost the economy as a whole. Digital payments make e-commerce transactions easier, which helps companies reach new markets and grow their consumer base. The ecosystem surrounding digital payments has the potential to stimulate innovation, generate job opportunities, and draw capital towards associated technologies and services.

7. CONCLUSION

The concurrent expansion of digital and cash payments may seem contradictory given their perceived interchangeability. This unusual situation necessitates investigating the underlying causes of these types of payment. The long-run currency demand function's empirical research shows that income and precautionary factors have a statistically significant effect on cash demand. The usage of digital payments has a statistically significant negative correlation with the use of cash, however the income effect has a greater impact than this substitution effect. This implies that in an expanding country such as India, there is room for growth for both cash and digital payments due to the increased intensity of transactions. However, over time, the positive income effect on currency demand may be moderated by the digital payments industry's high growth speed.

Cash is not only a transaction medium; it is also a hedge against uncertain times, like the COVID-19 pandemic, when there is a surge in demand for cash due to precautionary reasons. Precautionary factors raise currency demand, according to empirical data.

All things considered, it is evident that electronic payments are replacing the need for cash in transactions, yet the incentive to keep cash on hand for storage of value does not change. This is demonstrated, for example, by the fact that the demand for large-denomination banknotes—whose share of the total CiC has increased—has been the main driver of the CiC rise. The percentage of low denomination notes has also decreased, which is partially explained by the replacement of small-value payments with UPI and mobile wallets, as shown by the shrinking ticket sizes of these payment methods. Reduced cash withdrawals from ATMs also point to a decrease in transactional cash demand. Cash remains prevalent in the face of the growing popularity of digital payments, as people still choose to conduct transactions and save using cash. Furthermore, cash is the de facto basis for all forms of payment. It is also essential for enabling transactions among the unorganized and formal sectors of the economy, as well as with underserved and underinformed populations. Additionally, the acceptance and use of digital payments continue to be focused in areas with higher levels of development.

The study results pertaining to digital transactions in India offer significant perspectives on the patterns and consequences of the digital payment terrain. The data shows how digital payment methods are becoming more widely accepted and used, which is a step in the right direction towards a cashless economy. The notable increase in the overall count of digital transactions, namely during Financial years, is indicative of the growing digital infrastructure and evolving consumer patterns. Adoption has been significantly accelerated by digital infrastructure availability, convenience, and ease of use. Growth has also been aided by government initiatives including the implementation of financial inclusion initiatives and the Unified Payments Interface (UPI). The study's conclusions have important ramifications. Transparency, financial inclusion, and efficiency can all be enhanced by increased use of digital transactions.

It can boost financial access, lessen the informal economy, and enhance tax compliance. Businesses and the government can benefit from prospects for cost savings, efficiency, and transparency when

using digital payments. The digital gap in rural areas, security issues, the requirement for improved infrastructure, and the necessity for digital literacy are among the challenges. It is imperative that these issues be resolved.

In conclusion, India's digital transaction trends and ramifications show the country's progress toward a cashless economy. Digital transactions have the power to improve financial inclusion, change the financial environment, and spur economic expansion. In order to promote equitable digital growth, policymakers, regulators, and industry stakeholders need to resolve obstacles and seize opportunities. It is advised to conduct more study to examine sector-specific effects, examine socioeconomic factors that affect adoption, and assess governmental initiatives. India may take advantage of the advantages and advance its transition to a digital economy by improving the digital payment ecosystem.

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