**Digital Transactions in India**

**Introduction**

By the financial year 2026, it is anticipated that the value of digital payments in India will be tripled. This is a result of a number of causes, including the government's push to widen financial access and the 2016 policy of demonetization, which forced citizens to use digital payments. Additionally, the introduction of the JIO mobile data plan, the Aadhar system, and rising mobile phone usage caused digital transactions in India to surge to record highs.

UPI accounts for 60% of all payments in terms of volume, and from FY16 to FY21, digital payments virtually tripled. In 2016, the Reserve Bank of India's NPCI (National Payments Corporation of India) began initiating UPI transactions. It hasn't taken long for UPI Transactions to exhibit this quick development in conjunction with the government's strategy of demonetization. UPI, which stands for unified payment interface, allows us to transfer money between bank accounts from a single window. This means we can send or receive money as well as pay people, businesses, or service providers by scanning a quick response (QR) code when we shop, pay bills, or authorize payments. All we need is a mobile payment application and a virtual address to enable payment through the phone.

Since UPI is easy to use it grew popular over the world and started to get international recognition. Many countries started to adopt the UPI system. Nepal becomes the first country to adopt UPI outside India, locally it will be called   "Nepal UPI" or "UPI Nepal". By 2022, Singapore's PayNow and India's UPI will be connected for quick fund transfers. This is anticipated to happen in July 2022. Soon, RBI will announce that UPI users can instantaneously send and receive money from the UAE to bank accounts. Bhutan became the first neighboring nation to accept BHIM UPI last year. Singapore, Malaysia, Thailand, Philippines, Vietnam, Cambodia, Hong Kong, Taiwan, South Korea, and Japan will allow UPI payments. Even, Qatar Airport started accepting UPI payments last week.

My analysis on this would answer the research questions I have framed which include-

**1)What are the top 10 countries that are leading in Real-Time payments across the world?**

**2)What are the influencing factors that led to the increase in Digital Transactions in India?**

**3)How UPI Transactions have changed the Digital world of India since it has been introduced by NPCI?**

**4)What is the effect of COVID on Digital Transactions in India?**

**5)Since all payments turned digital, what was its effect in India?**

**Methodology:**

My Research questions can be answered through the data sets I have managed to accumulate. I have a total of three data sets. My first dataset has all the transactions operated by NPCI. It has all the transactions by volume done over the years and months-wise. I have separated the data into different sheets grouping all the years in one sheet and months-wise data for each financial year in other sheets. I have another dataset with different types of Digital Transactions over the years in India and Real-Time Payments of the Top 10 countries by Volume across the world. Last Dataset has the data of popular Indicators like GDP Per Capita and Corruption Index across the countries, and Smart Phone and Net Users in India. I have linked the complex data between different data sets and sheets within them.

Diagram

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Diagram

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I have used different sources to collect the datasets to analyze Digital Transactions in India which include:

<https://www.npci.org.in/what-we-do/upi/product-statistics>

<https://www.statista.com/statistics/>

<https://data.worldbank.org/>

<https://timesofindia.indiatimes.com/business/india-business/explained-how-india-is-outpacing-the-world-in-digital-payments/>

**Analysis:**

**Average Year Wise Financial Transactions by Volume in India**

NPCI is operated by RBI, and deals with different payment systems over the years. To show, how the Volume of Transactions has increased over the years I have drawn a visualization with Avg volume of Transactions on the X-axis and Volume on the Y-axis.

A picture containing application

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The above graph clearly explains the year wise Avg Transactions by each Payment Type over the years.

From this graph, we can see that Total Financial Transactions has increased over the years along with UPI transactions. We can clearly see that majority of financial transactions are UPI transactions. Also, Digital Transactions and contactless payments like BHIM, Immediate Payment services have increased across the years.

USSD is a message-based service where a person can transact using a phone by dialing \*99#. Even though Digital Transactions have increased, USSD has reduced over the years.

**UPI Transactions Over the Years**

In the previous Visualization, we have seen that UPI transactions have increased and held a major proportion of Total financial Transactions. Here, in this visualization, we can see how UPI transactions have increased from 2016 to 2021. Transactions by volume almost increased by triple by the end of 2021. In the year 2022, we have taken the data only until April which might have been misleading when looked at first. However, the data we have taken for 2022 has only months until April and it can be seen that 5583 million transactions are already done by the end of April 2022.

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**Digital Transactions over the years**

India showed a rapid increase in Digital Payments after demonetization, and the introduction of UPI and people adopted contactless payments. From this visualization, we can see how Digital Transactions have been increased over the years. We can see the infographics for major Operating systems like UPI, BHIM, and USSD. As we know before UPI Transactions top the list .

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**Internet Penetration, Number of smart phone users, and Number of Digital Transactions by Average:**

In this visualization, we have taken several factors like Number of smartphone users, and Internet penetration rate and compared with the number of digital transactions by volume. I have added page animation to the year and can be concluded from this visualization that with the increase in Internet usage and Mobile phone usage, Digital Transactions have increased in India over the years.

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**Top 10 Contributors of Real-Time Payments in the year 2021**

It came surprising to many people how India surpassed all other countries in real-time payments. This graph visualizes the Top 10 Contributors in Real-Time payments. While India tops the list with total transactions by volume (25748 million), China is the second largest. India’s UPI is being adopted by many other countries in the year 2022 including Singapore, and Nepal due to its ease which is a rare feat.

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**GDP Per Capita Vs Transactions by Volume in India over the Years:**

In this Visualization, we have compared GDP per Capita with the Transactions by Volume in India. From this Visualization, we can infer that with the increase in GDP per Capita, Digital Transactions also increased, and hence GDP per Capita might be a contributing factor to the increase in Digital Payments.

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**Corruption Index Rank Vs CPI Score in Year 2021 for Top 10 Countries**

From the visualization below, we can infer the CPI ranks for the Top 10 countries that are leading in Digital and Real-Time Payments. CPI stands for Corruption Index Rank and the larger the rank is, the smaller the Score is.

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**Financial Transactions Over the years Dashboard:**

In this Dashboard, I have combined the main Visualizations which explains the financial transactions over the years which includes different payment Systems, different Digital Transactions, and UPI transactions over the years. I have filtered the 2016 data in Avg Financial Transactions since it is very negligible when compared.

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**Contributing Factors Dashboard**

In this Dashboard, I have taken the Visualizations which are major influencing factors.

An interactive dashboard is formed based on the earlier created graphs created and when all these data visualizations are brought together the dashboard conveys a very interesting meaning together. This dashboard helps in giving an overall picture of the Contributing Factors for the increase in Digital Transactions in India.

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**Conclusion**

From the above graphs and effective visualization from the Datasets I have collected; I have got the answers to my research Questions. I have inferred what are the top 10 countries that are leading in Real-Time payments across the world, and I realized that Mobile Phone usage, Internet Penetration Rate, and GDP Per capita, as the influencing factors that led to the increase in Digital Transactions in India. From the Visualizations, I was able to see how UPI Transactions have increased over the years and the effect of COVID in fact increased sDigital Transactions in India.