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EVOLUTION OF DIGITAL PAYMENTS: A COMPARATIVE STUDY OF PRE- AND POST-COVID TRENDS IN HYBRID ENVIRONMENTS

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ABSTRACT

In this era of rapid technological advancement, the use of digital payments is booming. It is one of the key measures being promoted by the government under the 'Digital India' campaign to move toward a cashless economy. Digital payments are made through online platforms using electronic media, eliminating the need for physical cash, and enabling people to handle transactions quickly and easily. The government's goal is to create a digitally empowered economy that is faceless, paperless, and cashless.

With the rapid growth of internet access and smartphone usage, more people now have the tools to make digital payments. Mobile wallets, apps, and payment platforms have become widely accessible, and digital payments can be made both online and in physical locations. For example, if you buy something from Myntra and pay via UPI, that qualifies as a digital payment. Similarly, if you visit a restaurant and, instead of paying with cash or a card, scan a QR code at the cashier using an app like Google Pay or PhonePe, and complete the transaction through UPI, it is also considered a digital payment since the money is transferred electronically without physical cash.

This study investigates whether the importance of digital payments has grown significantly between the pre-COVID and post-COVID periods. A two-sample means test was conducted using survey responses from finance managers at 100 companies in Pune. The findings indicate a notable increase in the importance of digital payments during the COVID-19 period.

Keywords: Digital Payments, COVID-19, E-Payments Growth, Cashless Economy, UPI Payments, Digital India, Digitally Empowered Economy

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1. INTRODUCTION

Digital payments have grown in India at a rapid pace. Following are the benefits of digital payments:

Faster, easier, more convenient: Perhaps one of the biggest advantages of cashless payments is that it speeds up the payment process and eliminates the need to fill in lengthy details. There is no need to stand in line to withdraw money from an ATM or carry cards in your wallet. With the transition to digital technologies, banking services will be available to customers 24 hours a day, 7 days a week and all days of the year, including public holidays. Many services like digital wallets, UPI etc. work on this basis.

Economical and lower transaction fee: There are many payment apps and mobile wallets that do not charge any service fee or processing fee for the service provided. The UPI interface is one such example where the customer can avail the services for free. Various digital payment systems reduce costs.

Waivers, discounts and cashbacks: Many rewards and discounts are offered to customers who use digital payment apps and mobile wallets. Many digital payment banks offer attractive cash back offers. This is beneficial for customers and also acts as a motivating factor for cashless transactions.

Digital Record of Transactions: One of the other benefits of going digital is that all transaction records can be kept. Customers can track every transaction made, no matter how small the amount.

One stop bill payment solution: Many digital wallets and payment apps have become a convenient platform for paying utility bills. Be it mobile phone, internet or electricity bills, all these utility bills can be paid seamlessly through a single app.

Helps to keep black money under control: Digital transactions will help the government to keep track of things and in the long run will help to eliminate the circulation of black money and fake notes. In addition, it can also boost the economy as the cost of minting the currency also decreases.

2. LITERATURE REVIEW

We first examined the demonetization of Indian notes in 2016 as an exogenous shock that prompted consumers to switch to digital payments. On 8 November 2016, in an unexpected move, the Government of India demonetised the two highest denomination notes in circulation (INR 500 and INR 1000), leading to a cash shortage in the economy. Overnight, 86% of cash in circulation was declared illegal tender. This has led to a significant increase in the level of digital payments involving both cards and e-wallets (Agarwal et al., 2018). Accounting for geographic differences in the severity of demonetization, Chodorow-Reich et al. (2020) showed that a significant, temporary currency decline led to a decrease in ATM withdrawals and faster adoption of alternative payment technologies by districts. Additionally, by examining merchant-level transactions from one of the leading digital wallet companies in India, Crouzet et al. (2019) found that a temporary financial crisis led to a sustained growth in the user base of electronic wallets, suggesting the presence of positive adoption externalities.

Studies have shown that after demonetisation, Indian households that switched to digital payments tended to spend more. Using customer income-level transaction data from a large supermarket chain in India, Agarwal et al. (2019) found that consumers who were forced to switch to digital payments purchased more expensive goods and took less advantage of promotional offers. Overspending occurs because digital payments are less important than cash, making consumers complacent about their spending. This is not due to changes in revenue or supplier responses. Similarly, using sales data of over two and a half million transactions from India's leading online fashion retailer, Bandi et al. (2019) found that consumers who switch to digital payments maintain their purchase frequency but spend more and are less likely to return their purchases. This is attributed to both an increase in the average price and the number of items purchased. These changes in consumer habits are broadly consistent across product categories.
On the other hand, studies from Mexico show that when debit cards are issued to poor households, there is an increase in savings. From 2009 to 2012, the Mexican government gave 1 million debit cards to municipal recipients of the Prospera conditional cash transfer program who have existing bank accounts. The program transfers cash to poor households with children aged 0 to 18 and also to pregnant women on the condition that they send the children to school and undergo preventive health check-ups. Households receive bimonthly payments, and the cash is deposited into their bank account.

The introduction of debit cards has changed the way they spend and save. Bachas et al. (2017) found that before debit cards were provided, beneficiaries typically withdrew the full amount after receiving the money and did not save. However, beneficiaries with debit cards were able to save up to 2% of their annual income 2 years after the policy was implemented. This can be attributed to increased trust in the bank as well as a decrease in transaction costs. In a related paper, Bachas et al. (2018) showed that providing debit cards reduced the mean travel distance to access banking from 4.8 to 1.3 kilometers. The percentage of households needing to give up daily activities (such as housework, childcare or work) to get to the bank fell from 84% to 25%. Finally, Higgins (2019) highlighted that the adoption of debit cards generated externalities and increased the number of point-of-sale (POS) terminals offered by small retailers. In turn, this encouraged more consumers to accept debit cards. Acceptance of debit cards by other consumers was estimated at 21%. As a result, consumers benefited from being able to shop at a wider variety of stores, although the effect was greater for wealthier consumers.

3. METHODOLOGY

To draw meaningful inferences and conclusions, a minimum sample size of 100 is recommended (Alreck and Settle, 2003). Accordingly, 100 finance managers from Pune were surveyed through a questionnaire containing importance accorded to 10 digital payment modes given below:

1. Banking cards
2. USSD
3. Aadhaar Enabled Payment System (AEPS)
4. UPI
5. Mobile Wallets
6. Bank pre-paid credit cards
7. PoS terminals
8. Internet banking
9. Mobile banking
10. Bharat Interface for Money (BHIM) app

Two columns were created in the questionnaire – one for pre-COVID significance and second for post-COVID significance. Both these columns had five response options – Not at all significant, very little Significant, Moderately Significant, Highly Significant, and Very Highly Significant. The responses were coded with values of 0 for Not at all significant, 1 for Very little Significant, 2 for Moderately Significant, 3 for Highly Significant, and 4 for Very Highly Significant. A two-sample means t-test was used to compare the pre-COVID and post-COVID significance. The hypothesis set was:

Ho: There is no difference between pre-COVID and post-COVID significance of work from home

Ha: There is a significant difference between pre-COVID and post-COVID significance of work from home

The hypothesis was tested at a 95% confidence level.

4. DATA ANALYSIS AND INTERPRETATION

39 respondents were from the Northern region of Pune, 22 were from the Eastern region, 12 were from the Western region, and 27 were from the Southern region. 41 respondents were from the age-group of <30 years, 32 were from the age-group 30-40 years, and 27 were from the age-group of >40 years.

Table 1 gives a comparative average of the ten digital payments statements items and their significance ratings by the 100 respondents:

Table 1: Comparative ratings of 100 marketing managers

Sr. No.	Item	Pre-COVID#	Post-COVID#
1	Banking cards	1.05	2.46
2	USSD	1.2	2.63
3	Aadhaar Enabled Payment System (AEPS)	1.05	2.75
4	UPI	1.6	2.8
5	Mobile Wallets	1.25	2.95
6	Bank pre-paid credit cards	1.08	2.67
7	PoS terminals	1.19	2.89
8	Internet banking	1.25	2.92
9	Mobile banking	2.12	2.93

10	Bharat Interface for Money (BHIM) app	1.01	2.96
	Total	1.23	2.76

#Average ratings on a scale of 0-4.

It is observed that for all the items there is an increase in the post-COVID significance rating. The average has increased from 1.23 to 2.76. The rating 1.23 indicates Very little significance, whereas 2.76 rating is in between Moderate and High significance rating.

A two-sample means t-test was used based on the averages of pre-COVID and post-COVID ratings of the ten items for the 100 respondents. Results were as under:

Table 2: Summary statistics

Variable	Observations	Obs. with missing data	Obs. without missing data	Minimum	Maximum	Mean	Std. deviation
Pre-COVID	100	0	100	1.050	1.620	1.225	0.175
Post-COVID	100	0	100	2.560	2.970	2.758	0.124

t-test for two independent samples / Two-tailed test:

95% confidence interval on the difference between the means:

[-1.676, -1.390]

Table 3: T-test results

Parameter	Value
Difference	-1.533
t (Observed value)	-22.559
|t| (Critical value)	2.101
DF	18
p-value (Two-tailed)	<0.0001
alpha	0.050

Test interpretation:

H0: The difference between the means is equal to 0.

Ha: The difference between the means is different from 0.

As the computed p-value is lower than the significance level alpha=0.05, one should reject the null hypothesis H0, and accept the alternative hypothesis, Ha.

Thus, the null hypothesis there is no difference between pre-COVID and post-COVID significance of digital payments was rejected in favor of the alternate there is a significant difference between pre-COVID and post-COVID significance of digital payments.

5. CONCLUSION

There is a significant difference between pre-COVID and post-COVID significance of digital payments. The Government of India has taken several measures to promote and encourage digital payments in the country. Under the 'Digital India' campaign, the government aims to create a 'digitally empowered' economy that is 'Faceless, Paperless, Cashless'. There are different types and methods of digital payments. Some of these include the use of debit/credit cards, internet banking, mobile wallets, digital payment applications, Unified Payments Interface (UPI), unstructured supplementary service data (USSD), prepaid bank cards, mobile banking, etc. Digital payment methods are often easily

feasible, are more convenient and give customers the flexibility to make payments from anywhere, anytime. They are a good alternative to traditional payment methods and speed up transaction cycles. After demonetisation, people slowly started accepting digital payments and even small traders and shop owners started accepting payments through digital mode. In short, digital payment occurs when goods or services are purchased through various electronic media. In the digital payment method, there is no transfer of cash or checks in physical form.

CONFLICT OF INTERESTS

None.

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