

# Cash Management: A Shift in Payment Pattern of Indian Buyers during Covid 19

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## Abstract

Cash Management is always one of the cherished objectives of Planners & Policymakers not only in India but all over the world. The current Covid 19 crisis is the root for a shift in the Alternative payment methods. The usage of non-cash payment methods, such as e-wallets, online transactions using e-banking, debit and credit cards will increase extensively due to the impossibility of doing face to face transactions. People are forced to find alternative ways of shopping in the wake of Coronavirus crisis, and hence there will be a shift in the pattern of purchase (from real shopping to virtual/online shopping) and online payment methods. Not only this, certain payments like mobile recharge, electricity and water bills, municipal taxes, etc. are to be made online. People who were reluctant or slow in adapting to online payment methods have no choice but to adopt the non-traditional payment alternatives (m-wallets, Paytm, NEFT, RTGS, IMPS, etc). The Indian Income Tax act also encourages non-cash payments by the customers through Section 44AD, Section 40A(3), to name a few. The paper examines the impact of Covid 19 on the payment pattern of Indian buyers by comparing the two scenarios 1. Before Covid 19, and 2. During Covid 19. The RBI statistic of payment methods from November 2019 to May 2019. To extract the results, statistical tests like Paired *t*-test have been used with the help of SPSS software. The results indicate that covid 19 has a vital impact on non-cash payment methods.

**Keywords:** Covid 19, E-Payment, M-Payment, RTGS, IMPS, Non-traditional payment methods, Alternative payment methods

## 1. Introduction

COVID-19 is an infectious disease caused by severe acute respiratory syndrome coronavirus 2. The disease was first identified in December 2019 in Wuhan, China. The first case of the disease outside of China was diagnosed in Thailand in mid-January 2020,

and it spread rapidly around the world. The World Health Organization (WHO) declared it a Public Health Emergency of International Concern on January 30, 2020, named the disease COVID-19 on February 11th, and classified COVID-19 as a pandemic on March 11, 2020.

The COVID-19 outbreak started in December 2019 in Wuhan city in China. It continues to spread across the world (**Fernandes, 2020**). At the time of writing this research paper, almost 13.4 million affected worldwide with cases of death reaching to 5,80,226. While in India, at the time of writing this paper the number of affected cases reached 9,37,487 and cases of death reported is 24,315.

## 2. Use of digital payments in India

The use of digital payment modes has become more important as the ongoing nationwide lockdown imposed to maintain social distancing to contain the spread of coronavirus, has restricted the movement of people. Reserve Bank of India has reiterated the use of digital modes for banking transactions.

IMPS provides real-time fund transfer which offers an instant, 24x7, interbank electronic fund transfer service that could be accessed on multiple channels like Mobile, Internet, ATM, SMS, Branch and USSD. The 24x7 IMPS enables customers to transfer money through banks and RBI authorized Prepaid Payment Instrument Issuers (PPI) across India through Mobile Phone, Banking & ATM. The Reserve Bank of India emphasized that safe digital transaction can be done for the safety of your home. Multiple digital payment options include NEFT, IMPS & UPI that are available round the clock.

## 3. Literature review

**Buheji et al. (2020)** – The economic impact of the COVID-19 can be shown through

three possible scenarios, the labour productivity shock, major impacts come from workers unable to do their job, resulting in an average decline in labour productivity of 1.4% during 2020. The COVID-19 causes a total factor productivity shock a temporary paralysis. **Paital (2020)** – As per WHO, the disease COVID-19 causes respiratory illness (like the flu) with symptoms such as dry cough, cold, fever, and in more severe cases, difficulty in breathing that leads to death of patients due to lack of social distancing. On the other hand, India being the world's second highest populous country with poor hygiene and health care systems has controlled the disease successfully with a very low infection & death rate under COVID-19. **Djalante and Lassa (2020)** – The three most frequent changes in public behaviour are staying at home, washing hands more, and applied social distancing.

**Kapoor (2020)** – The COVID-19 crisis has accentuated the problem of high unemployment and weak aggregate demand that the Indian economy was grappling with even before the onset of the pandemic. It has not only resulted in large scale job losses and loss of incomes but also increased poverty. With an uneven burden of the shock being borne by those who were working in low paying, unstable and informal jobs, the dual shocks of the virus and lockdown have exacerbated inequalities in the labour market. **Fernandes (2020)** stated that various countries GDP's estimated growth % including India also 3.1% (from 1.7% to 4.3%) confidence margin and actual GDP on economic impact of covid -4.0% (from -5.3% to -2.7%) confidence margin 1.5 month scenario. With a gradual recovery of economic activity until early-July, growth of GDP in India -0.2% (from -2.5% to 2.0%) is estimated if the crisis continues until mid-June.

**DPS Samanta et al. (2020)** – In his study highlights RTGS and card-based payments and analyses the trend with respect to change in volume and value in the past ten years, the telecom service providers entered the wallet market. These Telco led PSPs are mainly for mobile recharge and remittances, Airtel Money, M-Pesa by Vodafone, Idea Money of Idea, mRupee of TATA & Jio Money app by Reliance. **Peterson et al. (2020)** – During the pandemic, there was a general decline in the volume of bank transactions, a decline in card payments and a fall in the use of ATM cash machines worldwide. This led to fewer fees collected by banks which negatively affected banks' profit. The use of online education was already low for some reasons, & it was doubtful that the outbreak would lead to an essential shift from classroom education to online education. Only few schools had the capacity to arrange a distance learning program for their students.

**Rajakarier (2020)** projecting Future Cash Flow could be particularly intriguing for many organizations due to the increase in economic uncertainty. Owing to the high degree of uncertainty & resulting challenges in forecasting cash flows, it could be helpful to base these estimates on external sources such as economic projections by respected central banks & other international organizations. Corporates will need to understand the terms & status of these provisions & consider what influence they might have on their cash flow projections.

In the context of India, which is a developing country having a huge potential of digitalisation and use of non-conventional payment systems, the study envisages to see the impact of Coronavirus on mobile payment usage. Is there any shift in the Payment Methods of customers and people in general before covid 19 and during

covid 19. The Lockdown in India had enormous negative impacts on the poor people especially on the daily wage laborers, interstate migrant workers and small-scale vendors, as they were unable to earn their daily bread and were in no condition to move **Paital (2020)**. No vaccine or specific medicines are invented to fight the disease but prevention with social distancing and cleaning hands is found to be most effective. India being the world's second highest populous country with poor hygiene and health care system has controlled the disease successfully with a very low infection and death rate under covid 19 (**Patil 2020**).**4. Research methodology**

The secondary data have been composed from website of the RBI, other websites and annual reports, newspaper a lot of e-libraries of various universities were visited to gather data (**DPS Samanta**). This paper is based on secondary data. SPSS Paired *t*-test is used to analyze the data. Paired *t*-test is used in this research to test for comparing two related samples, involving small values of *n* that does not require the variance of the two population to be equal, but the assumption in the two population are normal have to continue to apply. For a paired *t*-test, it is essential that the observations in the two samples must be collected in the form of called matched pairs like each observation in the one sample must be paired with an observation in the other sample in such a manner that these observations are somehow matched or related, in an attempt to eliminate extraneous factors which are not of interest in test. Such a test is generally considered appropriate in a before and during covid 19 study. For a research purpose test, a group of before covid 19 and during covid 19 in order to know whether (cash less) e payment is effective, in which situation may use paired *t*-test. To apply this

test before covid 19 value of E-payment in value (Lakh) and during covid 19 value of E-Payment in value (Lakh) study.

Ho Null Hypothesis: **There is no significant changes in Payment volume and Payment Pattern Before covid 19 and during covid 19.**

The study followed the following outline:

## 1. Data collection

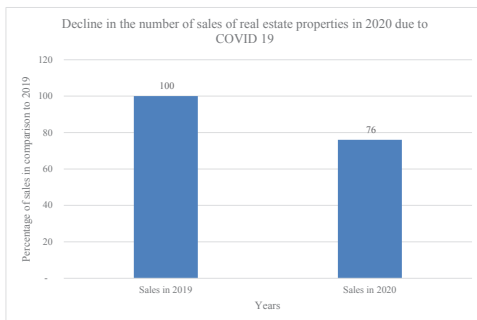
- a. RBI secondary data on payments (DBIE) ([www.dbie.rbi.org.in](http://www.dbie.rbi.org.in))

## 2. Data analysis

- a. Structural changes in payment patterns (Paired *t*-test analysis)
  - Before covid 19 Period (Feb 2020 & March 2020)
  - During covid 19 Period (April 2020 & May 2020)

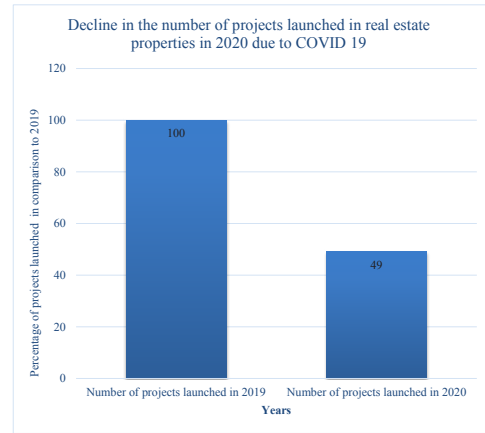
**E Payments includes the following:**

1. **Credit Transfers:** Credit transfer includes, AePS (Fund Transfer), APBS, ECS, IMPS, NACH CR., NEFT, UPI.



**FIGURE 1**

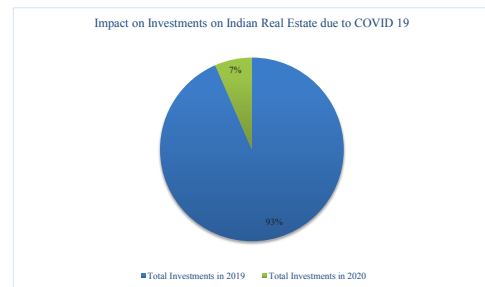
**Interpretation:** This Graph clearly shows that Credit Transfer is declining during lockdown Period. **Internet Payments (Net banking/Net Browsers)**



**FIGURE 2**

**Interpretation:** This Graph clearly shows that Internet Payments is declining during lockdown Period.

## 3. Cash Withdrawal at ATM



**FIGURE 3**

**Interpretation:** This Graph clearly shows that Cash Withdrawal by ATM is declining during lockdown period.

## 4. Mobile Payments

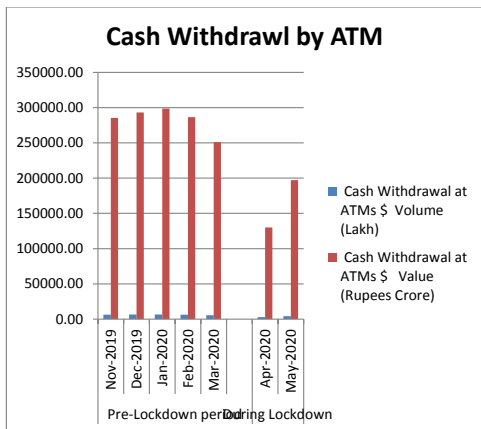


FIGURE 4

**Interpretation:** This Graph Mobile Payments shows that Mobile Payments were on the rise during Pre-Lockdown period but during lockdown in the month of April 2020 it declined but in the month of May 2020 again it caught back its pace.

5. Prepaid Payment Instruments

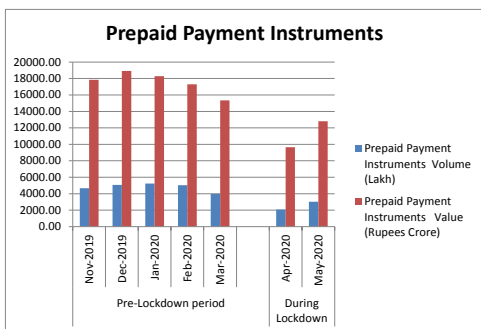


FIGURE 5

**Interpretation:** This Graph clearly shows that Prepaid Payment Instruments is declining during lockdown period.

6. Paper-based Instruments (Figure 6)

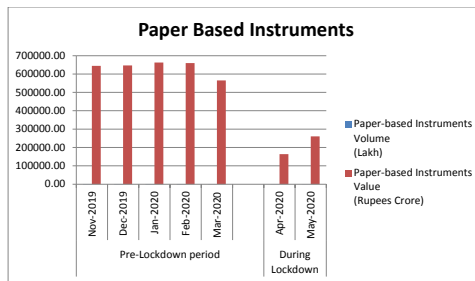


FIGURE 6

**Interpretation:** This Graph clearly shows that Paper Based Instruments is declining during lockdown period.

7. Debit Cards

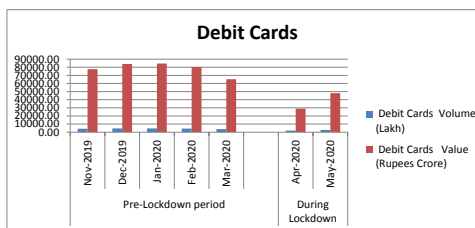


FIGURE 7

**Interpretation:** This Graph clearly shows that uses of Debit Cards for Payments is declining during lockdown period.

8. Credit Cards

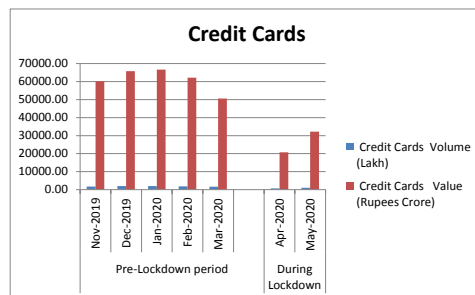
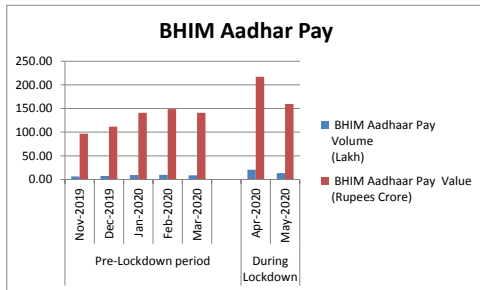


FIGURE 8

**Interpretation:** This Graph clearly shows that uses of credit cards for Payment is declining during lockdown Period.

**9. BHIM Aadhar Pay**



**Interpretation:** This Graph clearly shows that BHIM Aadhar Pay is increasing during lockdown Period. This is due to the direct cash transfers made by Government in the accounts of people.

**Findings and analysis of finding of Paired t-test**

The following are the results of statistical test “Paired t-test” between the two pairs of two monthly data of pre Covid (i.e. Feb and Mar 2020) and During Covid (i.e. April and May 2020).

**FIGURE 9**

**Paired Samples Statistics (in volume)**

Pair	Before covid19 & During covid19	Mean	N	Std. deviation	Std. error mean
Pair 1	Before covid19 & During covid19	11952.4744	9	13435.87758	4478.62586
		9427.8233	9	12676.04582	4225.34861

**Paired Samples Correlations (in volume)**

Pair	Before covid19 & During covid19	N	Correlation	Sig.
Pair 1	Before covid19 & During covid19	9	.995	.000

**Paired Samples Test (in Volume)**

Mean	Std. deviation	Std. error	Paired differences		t	df	Sig. (2-tailed)	
			95% Confidence interval of the difference					
			Lower	Upper				
Pair 1 B@	2524.65111	1548.05928	516.01976	1334.70741	3714.59481	4.893	8	.001
	Before covid19							
	- D@							
	During covid19							

**Paired Samples Statistics (in crore)**

Pair	Before covid19 & During covid19	Mean	N	Std. deviation	Std. error mean
Pair 1	Before covid19 & During covid19	1625527.1778	9	2402843.84456	800947.94819
		1131555.5789	9	1787080.81275	595693.60425

**Paired Samples Correlations (in crore)**

Pair	Before covid19 & During covid19	N	Correlation	Sig.
Pair 1	Before covid19 & During covid19	9	.995	.000

Mean	Paired Samples Test (in crore)				t	df	Sig. (2-tailed)
	Paired differences						
	Std. deviation	Std. error mean	95% Confidence interval of the difference Lower Upper				
Pair 1 Before covid19 During covid19	493971.59889	646399.73534	215466.57845	2895.22200	990838.41978	2.2938	.051

**Interpretations:** The Null Hypothesis that “**There is no Significant changes in Payment volume and Payment Pattern Before covid 19 and during covid 19**” cannot be accepted. Hence, we conclude that there is significant change in payment volume and payment pattern during these two periods. This may be inferred that the lockdown resulted in vast contraction of purchasing power of people of India, and thus seen a decline in all payment methods (both cash and non-cash). Even in online payments not much increases in seen except for BHIM Aadhar Pay, which is due to Government’s direct fund transfers to the accounts of beneficiaries. Thus, Covid and resulting lockdown had a major impact on demand and thus spending.

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- [https://economictimes.indiatimes.com/news/economy/finance/rbi-reiterates-usage-of-digital-modes-for-banking-transactions/articleshow/75848352.cms?utm\\_source=contentofinterest&utm\\_medium=text&utm\\_campaign=cppst](https://economictimes.indiatimes.com/news/economy/finance/rbi-reiterates-usage-of-digital-modes-for-banking-transactions/articleshow/75848352.cms?utm_source=contentofinterest&utm_medium=text&utm_campaign=cppst)
- [www.dbie.rbi.org.in](http://www.dbie.rbi.org.in)

# Appendix

TABLE 1

Month/Year	Credit Transfers – Retail	
	Volume (Lakh)	Value (Rupees Crore)
Nov-2019	18750.48	2226348
Dec-2019	20029.92	2440803
Jan-2020	21194.27	2454422
Feb-2020	20409.50	2396212
March-2020	19743.26	2831185
Apr-2020	17950.56	1687713
May-2020	18091.78	2018010

TABLE 2

Month/Year	Internet payments (Net-banking/Internet Browser Based)	
	Volume (Lakh)	Value (Rupees Crore)
Nov-2019	2719.42	2539143
Dec-2019	2736.82	3040781
Jan-2020	2749.95	3162106
Feb-2020	2837.88	2881819
March-2020	2530.83	3421077
Apr-2020	1597.63	2246296
May-2020	2003.48	2478416

TABLE 3

Month/Year	Cash withdrawal at ATMs \$	
	Volume (Lakh)	Value (Rupees Crore)
Nov-2019	6305.28	285376
Dec-2019	6518.97	293087
Jan-2020	6568.95	298514
Feb-2020	6223.11	286463
March-2020	5471.63	251075
Apr-2020	2963.32	129930
May-2020	4094.01	197265

TABLE 4

Month/Year	Mobile payments (mobile app based)	
	Volume (Lakh)	Value (Rupees Crore)
Nov-2019	13534.23	471295
Dec-2019	14322.15	493342
Jan-2020	14402.70	521368
Feb-2020	14284.28	525845
March-2020	13830.33	520199
Apr-2020	11276.04	364031
May-2020	14622.03	485513

TABLE 5

Month/Year	Prepaid payment instruments	
	Volume (Lakh)	Value (Rupees Crore)
Nov-2019	4672.07	17844
Dec-2019	5073.44	18922
Jan-2020	5237.05	18286
Feb-2020	5026.37	17296
March-2020	3982.85	15341
Apr-2020	2086.01	9648
May-2020	3031.90	12808

TABLE 6

Month/Year	Paper-based instruments	
	Volume (Lakh)	Value (Rupees Crore)
Nov-2019	866.12	644802
Dec-2019	865.46	646583
Jan-2020	887.17	662399
Feb-2020	884.95	659458
March-2020	710.34	565315
Apr-2020	176.82	163685
May-2020	306.77	260227



**TABLE 7**

Month/Year	Debit cards	
	Volume (Lakh)	Value (Rupees Crore)
Nov-2019	4299.96	77577
Dec-2019	4578.88	83953
Jan-2020	4637.19	84575
Feb-2020	4380.60	80146
March-2020	3716.28	65303
Apr-2020	2095.30	29043
May-2020	2723.30	48049

**TABLE 9**

Month/Year	BHIM Aadhaar Pay	
	Volume (Lakh)	Value (Rupees Crore)
Nov-2019	6.46	97
Dec-2019	7.37	112
Jan-2020	9.36	141
Feb-2020	9.67	149
March-2020	8.88	141
Apr-2020	20.66	217
May-2020	13.40	159

**TABLE 8**

Month/Year	Credit cards	
	Volume (Lakh)	Value (Rupees Crore)
Nov-2019	1762.12	60130
Dec-2019	2036.64	65736
Jan-2020	2017.27	66573
Feb-2020	1882.94	62148
March-2020	1638.57	50574
Apr-2020	768.53	20765
May-2020	1028.86	32225