Impact of Covid 19 on Digital Payment in India - With Special Reference to *99# Service

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Abstract
*The scope of *99# has increased as a part of Pradhan Mantri Jan Dhan Yojna (PMJDY) to create an environment of financial inclusion. The present study aims to study the use of *99# service during COVID 19 as well as the impact of COVID 19 on *99# service covering the period of 36 months, i.e. 18 months of COVID 19 (April 2020 to September 2021) and 18 months before COVID 19 (October 2018 to March 2020). The study found that there has been a significant difference in the means of No. of Banks live on *99# before and during COVID 19. In contrast, there has been the insignificant difference in the means of Volume of *99# transactions and Value of *99# transactions before and during COVID. The study found that there has been significant decrease in means of no. of Banks Live on *99# during Covid 19 but marginal increase in volume and value of *99# during Covid 19.*
Keywords: Digital Payment, *99# Service, Covid 19

Introduction

With the world going digital, the banking sector is also becoming digital. Digital transactions are preferred by bank customers. These transactions are digitally or virtually taking place between two or more persons through cell phones worldwide round the clock. They are recorded fairly on the fingertips of the users of the digital mode. The spread of smart phones, the accessibility of an online verifiable individuality, worldwide access to banking and the usage of biometric devices in phones proactively motivate digital systems for steering in a cashless society in India (Mohapatra, 2017). Not only urban but the focus should be on digital payments and infrastructure, especially in rural India (Sharma & Mathur, 2021). Poor people in both urban and rural areas can't afford smartphones and mobile data facility. Hence, there was the need for such a digital banking facility to design a banking service for fund transfer for this segment of the customers. *99# service is a digital payment mode that can be used to do bank transactions without having any downloaded app on mobile. *99# facility is assisted by the Unstructured Supplementary Service Data (USSD) and the National Payments Corporation of India (NPCI). As it uses USSD, it works across all Global System for Mobile Communications (GSM) handsets (Smartphone or otherwise) hence it can be accessible by the last mile user. It is easy to use for the user because it supports menu-based applications. It is available 24X7. It has common code *99# across all GSM operators and mobile handsets. It can also be done without a mobile data facility. Telecom Service Providers (TSPs) charge the customer using *99# service. However, the Telecom Regulatory Authority of India (TRAI) has set a maximum ceiling for using the *99# service.

In November, 2012; It was initially launched to take banking services to every common man but it had limited reach because it was offered by 2 TSPs i.e. MTNL and BSNL. In 2014, its scope increased because it was offered by 11 TSPs as a part of Pradhan Mantri Jan Dhan Yojna (PMJDY) to create an environment of financial inclusion among the underserved sections of society and integrate them into mainstream banking. To have its wider usage, it is accessible in English, Hindi and regional languages also. It offers Financial Services such as transfer of funds using Mobile Number/ UPI ID/ Aadhar No./ Account No and IFSC; Non-Financial Services such as Account Balance inquiry, Setting UPI PIN, Changing UPI PIN, Bank Statements showing last 5 transactions; as well as Value-added Services such as Aadhar Linking Status and PMJDY Account Overdraft Status.

Covid 19 pandemic cases were reported in excessive numbers in April, 2020 in India. With the increase in community blowout of the virus, alternatives to physical banking and physical transfers of funds and exchanges seemed to be more desirable. To reduce the blowout of COVID-19, the digital mode could back social distancing, accomplish money transmission and thus help and ease the government to reach the people in necessity (Ahmad et al., 2021). Even RBI has insisted on promoting digital payments in the context of COVID 19 (Jain et al., 2020). It has also led to changes like the swing from physical banking towards virtual banking (Litha, 2021). The first wave was reported in India from June 2020 to December 2020, while the second wave was reported from March 2021 to June 2021, and as of now, i.e. in September, 2021 on an average, 25,000 Covid cases are being reported in India. Digital mode has been considered to be beneficial and user-friendly tool for fund transfer in the times of COVID 19 pandemic. It is also likely to tend to use digital or virtual banking even after the post-pandemic phase, as new consumption behaviour models are evolving (Baicu et al., 2020).

Hence, the present study aims to study the use of *99# service during COVID 19 as well as the impact of COVID 19 on *99# service since it broke out in India. The present study covers the period of 36 months, i.e. 18 months of COVID 19 (April 2020 to September 2021) and 18 months before COVID 19 (October 2018 to March 2020). The sample of the existing study consists of all the banks offering *99# service during the study period, i.e. October, 2018 to September 2021. The researchers have conducted a T-Test: Paired Two Sample for means to test the hypotheses of the present study. It is hypothesised for the study that there is no significant difference in the means of No. of Banks live on *99#, No. of *99# Transactions and Value of *99# Transaction during COVID 19. The study has been carried out as follows: the present section gives the introduction about the present research work. The second section discusses a literature review on research work carried out on the impact of Covid on digital payment. The third section outlines the methodology of the present study. The fourth section discusses the result and discussion, and the last part of the study outlines the conclusion.

Literature Review

There has been significant increase in use of digital payments services through various applications in Indian towns and villages during pandemic COVOD 19 as compared to use of digital payments before the happening pandemic COVID-19 (Gupta & Singhal, 2021). The usage of digital dealings and virtual fund transfer were stimulated during the Covid19 pandemic (Saha, 2021). Even the substantial effects of social distancing on digital dealings have been seen by each of the deals' volumes and values (Alber, 2020). The overall digital payment dealings documented substantial evolution in terms of volume and value at CAGR of 24.11% and 15.84%, respectively during the period 2012-2013 to 2018-2019 (Angamuthu, 2020).

Noteworthy impact on digital payment modes such as Debit/Credit cards, UPI, IMPS, NEFT and RTGS has been observed during the COVID 19 pandemic in India (Das et al., 2020). Demographic factors such as gender and occupation had a significant association with the usage of UPI, while age, education qualification and income didn't have a significant association with the usage of UPI (Thakkar & Mistry, 2021). During Covid times from January 2020 onwards, people in India were diverted to Digital Dealings as lockdown forced them to

stay behind the doors (Sachdeva & Jain, 2020). During the lockdown period, the banking sector has given services like online or telebanking in Turkey also (Agan, 2020). Apparent risk and supposed usefulness directly exaggerated the purpose to use e-wallets during the COVID-19 outbreak. The consequence of government aid on the intention to use e-wallets has been completely facilitated by apparent usefulness. There has been a variance between Indonesia and Malaysia in government aid and purpose to use e-wallets association. COVID-19 might drive consumers' purpose to use e-wallets (Aji et al., 2020).

From the results of a paired sample t-test, it has been observed that COVID-19 had a significant impact on the use of digital payments (Kaur & Walia, 2021). There is a significant difference between the mode of payment while purchasing the product of the respondents before lockdown and during the lockdown period as per the t-test (Sudha et al., 2020). There has been a significant impact of Covid-19 on the digital payment systems. There are many digital payment modes available in India, but most of the customers prefer only a few digital payment modes. Because they were not having enough information on all the available digital payment systems (Sowmya & Hebbar, 2020). Irrespective of various demographic factors such as gender, age, education, profession, and monthly income, people tend to use digital payment methods during the Covid pandemic (Siby, 2021). Even the five independent variables, such as perceived usefulness, perceived ease of use, perceived security, perceived health security, and perceived benefits are better predicting the dependent variable intention to use e payment system in India, particularly referring to the Covid-19 (Kaur et al., 2021). As far as consumer perception is concerned, there is no significant difference between education, profession, gender, age and income on the perception of digital payment methods in times of the Covid pandemic in Ernakulam district of Kerala (Siby, 2021). It has affected fast-growing digital payments, which are closely linked to the manufacturing, auto, retail, aviation and hospitality sectors. Shut shops, travel bans and reduced discretionary spending by consumers are further negatively impacting digital payments in this sector but overall, there has been

an increase in Digital payments in India during COVID 19 pandemic (Perwej, 2020). COVID-19 may have given a substantial drive in the endeavour to downgrade cash transactions, but not so far as to eliminate it but Covid-19 has been a silver lining, in many ways, for the suitability of digital payments in India (Panwar et al., 2020).

However, Covid – 19 pandemic has transformed the entire way of living and the influence thereof can be noticeable on the digital payment systems. Contactless fund transfer, security, quick clearances, consumer-friendly Operating systems and rewards can be some of the features which have endorsed the usage of digital payment systems in India. Despite India being a cash preferred economy, security and nonexistence of infrastructure are of great concern; various modes of digital payments have categorically assisted in fund transfer without the terror of getting infected people during Covid 19 (Anandan & Mouli, 2020). There has been a quick upsurge in UPI Payments throughout Covid 19 lockdown. A society equipped to use UPI as an alternative to cash and UPI payments is facilitated to safeguard social distancing (Jawade & Suryavanshi, 2021). Even the Reserve Bank of India and the government insisted that people shift to digital payment modes to remain protected in Covid 19 pandemic. National Payments Corporation of India and other state governments have confirmed that further providers of crucial services have been on the digital platform. The government has also carried outdrive on social media to stimulate the usage of online payments and dampen the usage of cash during Covid 19 (Nirmala & Parvathi, 2021). The way to protect us from the virus can be to take the alternative of digital payment, which will allow the consumers to transfer funds for the goods and services without physically caring for the currency. Even the keypads of diverse modes of fund transfer can be retrieved contactless. Such initiatives into digital payments, to a sure degree, will curtail the effect of the Covid-19 (Kaur & Kushwaha, 2021). There has been a significant difference in the means of Number of Member Banks offering IMPS, in the means of Number of IMPS transactions and the means of the volume of IMPS transactions before and during Covid 19. With the increase in the Number of Member Banks offering IMPS, there has been an

increase in usage of IMPS which has been reflected by the Number of IMPS transactions and Volume of IMPS transactions (Mistry & Vyas, 2021).

From the above review of empirical works, it is clear that during COVID 19, usage of modes of digital payments has increased significantly across the nation and worldwide. Most of the researchers have considered the first wave of COVID 19 for studying the effect of COVID 19 on digital payments. Some of the researchers have analysed based on the primary data about respondents' perception, preference about digital payments during COVID 19. Some authors have approached their research on Digital payments in different ways in varying levels of analysis. These different approaches helped emerge more and more literature on the subject during the recent time. It gives an idea of extensive and diverse works on digital payments in India during the Covid 19 pandemic. It has been noticed that the studies on factors affecting digital payments provide divergent results relating to the study period. The main reason for the divergence in the results is the use of different methods to measure factors affecting digital payment. All the studies aimed to study the impact of Covid 19 on digital payments in India & abroad as a whole.

Research Problem: The survey of the existing literature reveals that no specific work has been carried out to examine and ascertain the impact of COVID 19 on *99# service in India. The present study is an attempt in this direction and, therefore, aims to enrich the literature on the impact of the Covid 19 pandemic on *99# service in India.

Research Question: The present study attempts to find the answer to the following research questions. Is there any increase in No. of Banks live on *99# service, in No of *99# Transactions and in value of *99# Transactions during the Covid 19 in India?

Research Objectives: The present study has been carried out with the following objectives:
1. To study the usage of *99# during Covid 19 and its impact on Number of Banks Live on *99# Service, Number of *99# transactions and Value of *99# transactions before and during Covid 19
2. To study interrelationship among Number of Banks Live on *99# Service, Number of *99# transactions and Value of *99# transactions during the study period.

Methodology

Geographical Coverage and Duration: The existing study has geographical coverage of the Indian Banking Sector. The study covers the period of 36 months, i.e. 18 months of COVID 19 (April 2020 to September 2021) and 18 months before COVID 19 (October 2018 to March 2020). The duration of the research study takes into account not only the first wave of Covid in India but the second wave also. The reason for selecting the duration of the present research is to study the impact of a pandemic on *99#.

Sample and Sampling Techniques: Looking at the objectives of the present study, there was a need to take a sample covering the Indian Banking Sector, and henceforth a sample of the present study consists of all the Banks Live on *99# during the study period, i.e. October 2018 to September 2021. It means the entire population has been taken as a sample for the present study.

Data Collection: The existing work was created on the secondary information composed from the website of the National Payments Corporation of India.

Hypotheses of the Study: The following hypotheses were formulated in this study:

H_0 = There is no significant difference in No. of Banks live on *99# before and during COVID 19.

H_1 = There is a significant difference in the means of No. of Banks Live on *99# before and during COVID 19.

The above hypothesis is limited to the No. of Banks live on *99#. To have a better understanding and true picture, the previous hypothesis has been extended to the following hypothesis:

H_0 = There is no significant difference in the means of No of *99# Transactions before and during COVID 19.

H_1 = There is a significant difference in No of *99# Transactions before and during COVID 19.

The above hypothesis is limited to the No of *99# Transactions only. To have a clear idea about the impact of a pandemic on *99#, the above hypothesis is further extended to the following hypothesis:

H_0 = There is no significant difference in the means of Value of *99# Transaction before and during COVID 19.

H₁ = There is a significant difference in the means of Value of *99# Transaction before and during COVID 19.

Research Design: Founded on the Works Review, the present study begins with basic data, i.e. No. of Banks live on *99#. To study the exact impact of the pandemic on *99#, variables such as No of *99# Transactions and Value of *99# Transaction have been selected. It also covers the study of the interrelationship among No. of Banks live on *99#., in No of *99# Transactions and Value of *99# Transaction during the Covid 19 pandemic. Thus, the present study gives a complete status of *99# in Indian Banking Sector during the COVID 19.

Hypothesis Testing: To determine whether the means of the selected variables before COVID 19 and during COVID 19 are different or not, T-Test: Paired Two Sample for Means has been conducted and hence the hypotheses of the study were verified by T-Test: Paired Two Sample for Means. To study interrelationship among No. of Banks live on *99#., in No of *99# Transactions and Value of *99# Transaction during the Covid 19 pandemic, Correlation has also been used.

Limitations: The existing research work is based on secondary data, so the outcome of the study depends upon the accuracy of the secondary data. The terrestrial room was restricted to one of the digital payment modes, i.e., *99# only.

Further Scope of Study: The present study can further be extended by covering different digital payment systems prevailing in India.

Result and Discussion

t-Test: Paired Two Sample for Means of No. of Banks live on *99#		
	No. of Banks live on *99# Before COVID 19	**No. of Banks live on *99# During COVID 19**
Mean	84.38888889	82.38889
Variance	2.604575163	5.545752
Observations	18	18
Pearson Correlation	-0.785056106	
Hypothesized Mean Difference	0	
Df	17	

t Stat	2.258317958	
P(T<=t) one-tail	0.018680788	
t Critical one-tail	1.739606726	
P(T<=t) two-tail	0.037361577	
t Critical two-tail	2.109815578	

As the p-value is less than 0.05, the Null hypothesis is rejected, and the alternate hypothesis is accepted. The variance amid No. of Banks live on *99# before and after COVID 19 is statistically significant. Hence, the sample selected provides enough evidence to conclude that the two population means are different. Hence, there is a significant difference in the means of No. of Banks Live on *99# before and during COVID 19. Specifically, the mean of No. of Banks live on *99# during COVID 19 (82 Banks) is less than before COVID 19 (84 Banks); hence it is said that during COVID 19 No. of Banks live on *99# has decreased significantly. As No. of Banks live on *99# during COVID 19 has decreased as compared to No. of Banks live on *99# before COVID 19, it can be said that No. of Banks live on *99# offering *99# has decreased significantly during the time of the pandemic. To have a true picture, several *99# Volume of transactions during COVID 19 ought to be investigated.

t-Test: Paired Two Sample for Means of No of *99# Transactions (In Mn)		
	No of *99# Transactions Before COVID 19	**No of *99# Transactions During COVID 19**
Mean	0.092222222	0.094444
Variance	0.000147712	0.00032
Observations	18	18
Pearson Correlation	-0.69716524	
Hypothesized Mean Difference	0	
Df	17	
t Stat	-0.339491145	
P(T<=t) one-tail	0.369198877	
t Critical one-tail	1.739606726	
P(T<=t) two-tail	0.738397755	
t Critical two-tail	2.109815578	

As the p-value is greater than 0.05, the null hypothesis is accepted, and the alternate hypothesis is rejected. The variance amid No of *99# Transactions before and during COVID 19 is statistically insignificant. Hence, the sample selected provides enough evidence to conclude that the two population means are indifferent. Hence, there is an insignificant difference in the means of No of *99# Transactions before and during COVID 19. Specifically, the mean of several *99# Transactions during COVID 19 (0.094444 Mn) is greater than that of before COVID 19 (0.092222222 Mn); hence it is said that though the number of Banks Live on *99# has significantly decreased during COVID 19, the number of *99# transactions have increased marginally. The number of *99# transactions during COVID 19 have marginally increased as compared to the Number of *99# transactions before COVID 19; it can be said that avoidance of physical banking or preference of virtual banking has increased marginally during the time of the pandemic. To have a true picture, the volume of *99# transactions during COVID 19 should be investigated.

t-Test: Paired Two Sample for Means of Value of *99# Transaction (In Crore)		
	Value of *99# Transaction (In Crore) before COVID 19	Value of *99# Transaction (In Crore) during COVID 19
Mean	14.88333	16.725
Variance	1.797224	11.00063
Observations	18	18
Pearson Correlation	-0.59428	
Hypothesized Mean Difference	0	
Df	17	
t Stat	-1.83745	
P(T<=t) one-tail	0.041843	
t Critical one-tail	1.739607	
P(T<=t) two-tail	0.083687	
t Critical two-tail	2.109816	

As the p-value is greater than 0.05, the null hypothesis is accepted, and the alternate hypothesis is rejected. The variance amid the means of Value of *99# Transactions before and during COVID 19 is statistically insignificant. Hence, the sample selected provides enough evidence to conclude that the two population means are indifferent. Hence, there is an insignificant difference in the means of Value of *99# Transactions before and during COVID 19. Specifically, the mean of Value of *99# Transactions during COVID 19 (16.725 Cr) is greater than that of before COVID 19 (14.88333 Cr); hence it is said that though the number of Banks Live on *99# has significantly decreased during COVID 19, Value of *99# transactions has increased marginally due to marginal increase in several *99# transactions. As the Value of *99# transactions during COVID 19 have marginally increased as compared to the Value of *99# transactions before COVID 19, it can be said that avoidance of physical banking or preference of virtual banking has increased marginally during the time of the pandemic. To have further verification among the selected variables, correlation among them ought to be investigated.

	No. of Banks live on *99#	Volume of *99# Transactions (In Mn)	Value of *99# Transactions (In Cr)
No. of Banks live on *99#	1		
Volume of *99# Transactions (In Mn)	-0.72494	1	
Value of *99# Transactions (In Cr)	-0.79394	0.903678	1

It can be seen that the number of banks that live on *99# and Volume of *99# transactions is negatively correlated. Hence, it can be said that an increase in No. of Banks Live on *99# results in a decrease in Volume of *99# Transactions (In Mn) or a decrease in No. of Banks Live on *99# results in an increase in Volume of *99# Transactions (In Mn). In the present study, it is observed that a decrease in No. of Banks lives on *99# results in an increase in Volume of *99# Transactions (In Mn). Similarly, the Number of Banks Live on *99# and the Value

of *99# Transactions (In Cr) are also negatively correlated. Hence, it can be said that an increase in No. of Banks lives on *99# results in a decrease in Value of *99# Transactions (In Cr) or a decrease in No. of Banks live on *99# results in an increase in Value of *99# Transactions (In Cr). In the present study, it is observed that a decrease in No. of Banks lives on *99# results in an increase in Value of *99# Transactions (In Cr). As far as correlation between Volume of *99# Transactions (In Mn) and Value of *99# Transactions (In Cr) is concerned, a positive correlation is observed. Hence, it can be said that increase in Volume of *99# Transactions (In Mn) results in an increase in Value of *99# Transactions (In Cr), while a decrease in Volume of *99# Transactions (In Mn) results into decrease in Value of *99# Transactions (In Cr). In the present study, an increase in Volume of *99# Transactions (In Mn) results in an increase in Value of *99# Transactions (In Cr).

Findings, Conclusion and Recommendations

The present study was conducted to study the usage of *99# during Covid 19 and its impact on No. of Banks live on *99#, Volume of *99# transactions and Value of *99# transactions. It also aimed to study interrelationship among impact on No. of Banks live on *99#, Volume of *99# transactions and Value of *99# transactions during the Covid 19 pandemic. The study has been carried out amid the coronavirus pandemic, which has been prevailing not only in India but in all over the world. As the study is based on the entire population, the result of the study is more likely to reflect the exact *99# usage scenario of India during the Covid pandemic. Thus, the study results can be considered reliable at this point and can be useful to policymakers.

The study's outcome revealed that there had been a significant difference in the means of No. of Banks live on *99# before and during COVID 19. It is observed that there has been a significant decrease in No. of Banks Live on *99# during COVID 19 in India. Therefore, it can be concluded that instead of increasing in No. of Banks Live on *99# during COVID 19 to avoid physical banking and maintain social distancing to safeguard customers against the pandemic in India; there has been a significant

decrease in No. of Banks live on *99# during COVID 19.

The study's outcome also revealed that there had been an insignificant difference in the means of Volume of *99# transactions and Value of *99# transactions before and during COVID 19. As No. of Banks live on *99# has reduced significantly during the study period, there should be a decrease in Volume of *99# transactions and Value of *99# transactions, but the study revealed that there had been a marginal increase in Volume of *99# transactions and Value of *99# transactions during COVID 19. Hence, it can be concluded that the customers themselves preferred virtual banking and maintained social distance to protect themselves and their families from the pandemic.

During Covid 19, it was expected to increase the number of banks live on *99#, but there has been a reduction in the number. More Banks should have offered the service to maintain social distancing. Reduction in several banks offering *99# and value of total transactions in terms of crores of rupees under *99# might be due to increasing usage of smartphones and mobile data facilities over some time. Hence, it shows that users preferred other digital payment modes such as UPI, IMPS, RTGS, NEFT, E-wallet for banking during the Covid times. Limitations include handset compatibility issues, technical error or declined the request due to network or connectivity issues of TSPs or Banks end, Upper limit of Rs. 5000, TSPs charge for using the service may be considered the reasons for its limited use, for change in consumers behaviour and preference. It is therefore suggested to resolve the bottlenecks in the adoption thereof by reducing security-related resistances, creating awareness among the users for utilising financial, non-financial and value-added services available on *99#, reducing transaction charges on fund transfer and increasing the limit of the fund transfer.

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