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A Comparative Study of Financial Inclusion & Digital Financial Inclusion in India in the wake of Demonetization and COVID-19 Pandemic

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ABSTRACT

Purpose: The Economic Growth of a country depends largely upon its financial sector which in turn depends upon how well it has reached to their citizens. The country where all the people are included in its formal financial sector or are part of it, would be on the path of inclusive growth. The term financial inclusion is what that helps a country in not only reducing the level of poverty by timely providing adequate and affordable financial services to all, but would also help in achieving sustained inclusive growth. Thus, financial inclusion plays an important role in country's financial well-being. This study provides an insight on the current status of financial inclusion initiatives with special reference to the landmark policy Pradhan Mantri Jan Dhan Yojana(PMJDY). The study also examined the digitalisation of financial inclusion plans where digital technology is being used to further strengthens the financial inclusion success. In addition, the study also provides a glimpse of digital transaction during pre and post demonetization time period and evaluated how COVID-19 pandemic has affected this digitalisation process over pre and post pandemic situation. The study is based on the secondary data collected from published reports of RBI, NPCI, Digidhan dashboard, ACI Worldwide, articles, websites and reports submitted by different committees on digital transaction over different time periods. The objective of the study is to assess the current status of financial inclusion initiatives in India with special reference to PMJDY and to evaluate the impact of Demonetization and COVID-19 pandemic on financial inclusion by mediating digital financial inclusion.

Methodology: The current study is descriptive and analytical in nature for which the data has been collected from various secondary sources which includes published annual reports of Reserve Bank of India(RBI), Pradhan Mantri Jan Dhan Yojana(PMJDY), National Payments Council of India(NPCI) for different time periods pertaining to demonetization as well as COVID-19 and digitalisation. The data has also been extracted from various websites, journals and articles in newspapers, committee reports of financial regulatory authorities submitted to the Government of India on digital transactions and financial inclusion in pre and post demonetization and COVID-19 pandemic era.

Findings: It has been concluded that Government is making concerted efforts for cent percent financial inclusion that has resulted in increased number of ICT based transactions over a period of last 5 years.The dominance or the degree of concentration in public sector banks has been documented in the present study with a negligible role of private sector banks. While assessing the impact of demonetization and COVID-19 pandemic on various digital payment platforms, Prepaid payment instruments (PPIs) and BHIM Aadhaar pay are the most positively affected channels in these two different situations respectively.

Findings: Empirical Research Paper

KEYWORDS Digital Transactions, Demonetization | COVID-19 | Financial Inclusion | PMJDY

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Introduction

Financial inclusion, which is considered as a critical indicator for inclusive growth of a country and well-being of the society, means access to and usage of various financial services such as savings, payments, credit and insurance from formal service providers. "Financial inclusion refers to the process of ensuring access to financial services and timely and adequate credit where needed by vulnerable groups such as weaker sections and low-income groups at an affordable cost" as defined by Dr. C. Rangarajan.

The Reserve Bank of India (RBI), in 2015, defines "financial inclusion as the process of ensuring access to appropriate financial products and services needed by vulnerable groups such as weaker sections and low-income groups at an affordable cost in a fair and transparent manner by mainstream institutional players". Thus, financial inclusion helps unbanked and under-banked people of the society to take part in formal financial system and by taking advantage of various financial services and products for their individual benefits, they can contribute towards overall economic growth of their country.

The meaning of financial inclusion can be understood by five A's that were given in a study in 2017. The first 'A' stands for (a) Availability, which means all the financial services should be available to all the individuals irrespective of their income and size of credit, (b) Affordability – all the financial services should be available at an affordable cost, (c) Accessibility – all financial services should be accessible to people residing even in remotest areas of the country. It implies that saving, credit, insurance and other services should be provided to all at affordable cost and irrespective of their geographical location, (d) Awareness – people should be made aware about the availability, use and importance of different financial services, (e) Adequacy – financial services should be adequate in accordance to the requirement of different sections. For instance, loan should be made available in smaller amount to lower income groups (Kaur et al, 2017).

To achieve financial inclusion(FI), various polices were implemented by the Government of India. One of these successful programs was **Pradhan Mantri Jan Dhan Yojana (PMJDY)**that provides access to financial services by opening accounts for its citizens. India has managed to double the account ownership for substantial population of their country with this scheme but most of these accounts have been reported as inactive.According to the progress report of PMJDY, issued by Department of Financial Services, Indian Ministry of Finance2018, PMJDY has brought 310 million Indians into the formal banking system by March 2018, many of whom might not yet have had an opportunity to use their new account. The story of these dormant accounts is also being reflected in the Global Findex Report 2017. As per this report, China and India, despite having relatively high account ownership, claim large shares of the global unbanked population because of their sheer size. According to this report, India has world's second largest unbanked population where 190 million people are still excluded from financial inclusion and 48 percent of account owners, reported having made no deposit or withdrawal in the past 12 months are considered as inactive account - the highest in the world and about twice the average of 25 percent for developing economies.

For gaining further success with respect to financial inclusion, the government came up with Digital Financial Inclusion. Digital financial inclusion (DFI) can be defined as access and usage of various financial services and products through digital medium such as internet, mobile banking and digital payment platforms. Asia Pacific Financial inclusion summit (2017)has also focused on the digitalization of financial products as it can open the greater access to financial products in the remote location. Financial technology can increase financial inclusion because it can by-pass existing structural and infrastructural barriers to reach the poor (Ouma et al, 2017; Al-Mudimigh and Anshari, 2020; Beck et al, 2014; Chinoda and Kwenda, 2019). The transactions costs act as a barrier to financial inclusion and digital financial services are found to significantly reduce these transaction costs, both in monetary terms (Allen et al., 2012) as well as in terms of time (World Bank, 2014).

This paper examines a comparative study of Fl and DFI with respect to two parameters. Firstly, it provides a glimpse of demonetization and its effect on uses of DF instruments. Demonetization is the act of stripping/ Banning /taking back of a currency unit of its status as legal tender. With the process of demonetization, the Government of India has tried to proceed towards the cashless economy though partially if not fully, wherein people will be using digital platforms for various financial transactions .Secondly, it has evaluated the DF instruments in the light of current COVID-19 pandemic. The explosion of COVID-19 pandemic has smashed different economies across the globe in many ways, be that Medical, Education, Manufacturing, IT communication, Tourism and Banking at the most. In India, where the government has consistently been trying hard to attain sustainable and inclusive development by achieving cent percent financial inclusion, the current global pandemic crisis has put their efforts slowed down.Though it was not the objective of the Government anywhere i.e., neither in the demonetization process nor in the COVID-19 pandemic to proceed towards cashless economy but the nature of the situation was somehow to use the digital financialinstruments. Therefore, it can be said that the people mostly use the digital financial instruments for their convenience, comfort and safety in the light of the demonetization process as well as COVID-19 pandemic situation.

In the present study, an attempt has been madeto figure out how demonetization has affected the FI & DFI as a medium to access formal financial system. Has the demonetization process made Indians to use more traditional banking instruments as well as digital financial instruments? We have tried to find out has this process of banning physical currency has forced people to adopt digital financial instruments in the long run to transact. The study has also tried to assess how COVID-19 pandemic, a health crisis has affected the goal/ success of financial inclusion by altering the way individuals accessed financial services, in terms of digital technologies. As the whole country has been facing partial or complete lockdowns since March 2020, where millions of people have already lost their jobs. In such a situation, it will be very difficult for them to actively maintain their bank accounts. In the absence of regular source of income, they will not be able to save money in the formal banking system and found them unable to make payments digitally or otherwise, that could lead to inactive bank accounts which do not contribute in the inclusive growth of the country. So, the question arises that - has this pandemic affected the FI and DFI positively or negatively i.e., has it made them to use digital financial instruments instead of traditional methods of transactions? Could this crisis lead to rapid digital transactions and lesser use of cash as people would prefer contactless activities? Has this pandemic provided an opportunity to India to achieve cent percent FI through DFI?

Objective of the Study

- To assess the current status of financial inclusion initiatives with special reference to PMJDY .
- To find out the impact of demonetization on digital transaction in order to assess the status of financial inclusion.
- To evaluate the effect of COVID-19 pandemic on digitalisation of financial transaction as a medium to achieve greater financial inclusion.
- To make a comparative analysis of demonetization and COVID-19 impact on digitalisation with respect to financial inclusion.
- To assess whether the pandemic has made people to shift from financial inclusion to digital financial inclusion as a mean to be the part of banking system.

Research Methodology

The current study is descriptive and analytical in nature. The present study is based on the data from secondary sources where reports ofReserve Bank of India(RBI), Pradhan Mantri Jan Dhan Yojana(PMJDY), National Payments Council of India(NPCI) for different time periods pertaining to demonetization as well as COVID-19 and digitalisation. The data has also been extracted from various websites, journals and articles in newspapers, committee reports of financial regulatory authorities submitted to the Government of India on digital transactions and financial inclusion in pre and post demonetization and COVID-19 pandemic era. In order to show the status and trend of financial inclusion (FI) as well as of digital financial inclusion (DFI), percentage method has been applied on the secondary data.

Literature Review

A number of studies have been conducted on financial inclusion. The present study reviews some of these studies to understand the impact of demonetization and COVID-19 pandemic on financial inclusion and digital financial inclusion.Sujlana & Kiran, 2018, have focused on the status of financial inclusion in India in last few years by providing an insight of various aspects of financial inclusion. They identified financial sector of a country as a multiplier and mediator for economic stability. Based on their study, they found financial inclusion in progressive stage in terms of branch penetration across India where a number of branches have increased manifold in 2011 but the role of private banks is not at par with that of public banks. The private banks are not taking financial inclusion initiatives actively as these activities would not help them in getting profits. They suggested that the private banks should focus on rural banking sector to increase their customer base.

Sherline, T. I. (2016), addressed demonetization as a prolusion to complete financial inclusion and there was an exigent need to restructurethe credit and financial services delivery system to achieve greater financial inclusion. Demonetization will be pain and confusion in the short -term for economy as well as for common citizens but probably it was the only way to shake up the system to a new compliance normal and can boost government's financial inclusion initiatives. Demonetization can push the economic growth higher in the medium term as this act is likely to have a changing impact among the Indian population. It could also increase the belief of keeping cash in the banks instead of hoarding/storing at home and utilise formal banking avenues for their needs.

Devi, L., Kamala, V., & Rajavalli, D. L. (2017), had examined the impact of demonetization on financial inclusion. As per the RBI report from Nov 2016 to Feb 2017, the volume of NEFT transactions have increased by 20% and value by 24%. IMPS has also showed an upward movement of 65% in volume and 48.6% in value, that too in just a period of 3 months post demonetization. Mobile banking has also improved significantly by 15 million within one month. PPIs have raised from 169 million to 280 million over a period ofCOVID 3 Months. Thus, demonetization has put the country on the road of a cash-less economy where people are using digital platforms for financial services.

A country like India, that is having strong banking and financial system, is capable enough to withstand any crisis that arises out of financial dealings. India has multiple strengths of larger youth population, increasing literacy level, developing middle class people and improving technical knowledge among the work force that would address favourably any proactive change in the present setup. With the introduction of demonetization, it was difficult for a country like India which is mainly a cash transaction-based economy, to create cashless society because more than 50 percent of the population was not proficient with card transactions (Ganesan, G., & Gajendranayagam, B. , 2017).

Demonetization has not only ended black money and corruption in the economy but it has also resulted in the surge of banking and digital transactions in the form of RTGS, Internet transaction, CCIL operating system, prepaid payment instruments, cards transaction, and total payment systems. Though it has not much affected the numbers of beneficiaries under PMJDY, but had resulted in increased amounts of deposits under PMJDY. It has also increased the level of financial inclusion by positively affecting digital transactions (Survase, M. B.).

Shrivastava, S. (2018), carried out a study on the demonetization and its impact on financial inclusion. He concluded that demonetization was a great initiative as it would help the Indian economy in the long run, provided financial inclusion process will become more simplified, transparent and safer. He also emphasised on the advantage of digital financial inclusion (DFI) at national and international level. At national level, use of digital technology will be a game changer that will reduce the cost and will provided greater access of financial services through products like e-KYC, IMPS (Interbank Mobile Payment System), AEPS (Aadhar enabled Payment System), and mobile banking. Since no physical infrastructure is required other than digital platforms, it would also provide universal accessibility of banking services to all the citizens across the nation. It will also ensure no leakages in public subsidies and welfare programs as the money could be transferred directly to the accounts of individuals using digital technology.

Sivathanu, 2018, he evaluated the usage of digital payment system by the customers during the phase of demonetization by covering the period from November 9, 2016 to December 30, 2016 in India and found that India has witnessed tremendous growth in mobile banking UPI transaction, one of the digital channels for conducting financial transactions. The result of the study suggested behavioural intention and innovation resistance that affect the usage of digital payment channels.

One of the objectives of demonetization was to increase the digital payments. The digital payment were around 624 million transactions in 2015-16 which led to approximately 1100 transactions in post demonetization phase. Thus, digital payments increased at a higher rate in terms of their volume after demonetization as compare to the transactions in the previous corresponding year(Agarwal, Poddar & Karnavat 2020).

"COVID-19 is the second catalyst after demonetization which has increased the shift of the banking customers from the traditional/ physical banking to digital platforms like mobile banking and mobile wallets. COVID-19 has prepared the Indian banking infrastructure to continue its operations through mobile & online banking services" as suggested by Agarwal, Poddar & Karnavat (2020) in their study.As people believed that physical transmission of currency could spread virus, mobile banking would be the best option to conduct transactions due to two reasons. Firstly, it would be in tune with the social distancing rules and secondly it would provide satisfaction to the customers by meeting their needs more conveniently. The mobile banking has shown a growth of 5% in just a period of 3 months from January to March 2020 according to Statista.

Mansour, H. (2021) has tried to gauge whether COVID-19 pandemic has encouraged governments to take measures to accelerate the level of digital transactions as a mean to encourage financial inclusion and the level of economic activities in a country. The study tested the impact of income, GDP per capita, number of commercial banks and effect of lockdown across business activities on the policies of the government that were initiated for digital methods of payments. It was found in the study that compared to upper-middle-income and high-income countries, low and lower-middle income countries are more enthusiastic towards digital means of payments during the pandemic.

Status of Financial Inclusion in India till date

The review of the policies adopted by Indian government so far in this regard would help to ascertain the success status of these polices. On the basis of the objectives of financial inclusion initiatives and the data provided by various financial regulatory bodies, we can find out how many people have been benefitted by and included in formal financial system. Some of the crucial policies and initiatives for FI are given in the table that were taken by financial regulatory bodies of India:

Table 1 : Some Initiatives for FI & DFI

Policy/Initiative	Objective
Know Your Customer (KYC)	KYC is the process of measuring and verifying the identity and financial standing of customers in formal financial sector.
National Payments Council of India (NPCI)	*It was established in 2008 under the support of RBI to assist in providing infrastructure to the banking sector in retail payment and settlements system. One of its major objectives is to help common people in striving financial inclusion.*
Pradhan Mantri Jan Dhan Yojana (PMJDY).	*This scheme was launched in 2014 with an objective of providing bank account and other financial services to each and every citizen of India.*
Small Finance Banks & Payment Banks	*These banks came in effect in 2014 with the purpose of providing a boost to financial inclusion campaign by providing banking facilities to small scale industries and farmers.*
Digital India Campaign	*It was established by the Prime Minister Narendra Modi on 1July 2015 with a vision to transform India into a digitally empowered society and knowledge economy.*
Unique Identification Authority of India (UIDAI)	*It was established in 2016 to provide unique identity to all the citizens of India that would prohibit the duplication of identities.*
National Strategy for Financial Inclusion (NSFI)	*The NSFI provides goals to be achieved over the tenure of five years to broaden the advantages of financial inclusion programme.*

Progress of Financial Inclusion Plans (2016-2020)

This section of the study will look into various schemesthat have been implemented by the government of India in past years and how far these measures have succeeded in attaining the goal of financial inclusion.The Reserve Bank of India (RBI),in its annual report, submitted on the trend and progress of banking sector across India to the central government where it provides data aboutvariousschemes such as banking outlets opened in villages based on Business Correspondent Model, Basic Savings Bank Deposits Accounts, OverdraftFacility (OD) availed in BSBDA, Kisan Credit Card(KCC), General Credit Card(GCC) etc. Table 2 given below is providing an overview of the trends in some of these schemes over a period of 5 years ranging from 2015-16 to 2019-20 by compiling data from the annual reports of RBI . Among all the instruments presented in the table 2, only ICT based transactions have been showing consistent upward progress in its volume while others have been giving a mixed response over the same period .

Table 2: Progress Report of Financial Inclusion scheme

Sr. No.	Particulars	March 2016	March 2017	March 2018	March 2019	End March 2020
1	Banking Outlets in Villages –Total	5,86,307	5,98,093	5,69,547	5,97,155	5,99,217
2	Basic Savings Bank Deposits Accounts (BSBDA) - Total (No. in million)	469	533	536	574.2	600.4
3	Basic Savings Bank Deposits Accounts (BSBDA) - Total (Amt. in billion)	638	977	1,121	1,409.60	1,684.12
4	Overdraft Facility (OD) Facility Availed in BSBDAs (No. in million)	9	9	6	5.9	6.4
5	Overdraft Facility (OD) Facility Availed in BSBDAs (Amt. in billion)	29	17	4	4.43	5.29
6	Kisan Credit Card (KCC) - Total (No. in million)	47	46	46	49.1	47.5
7	Kisan Credit Card (KCC) - Total (Amt. in billion)	5,131	5,805	6,096	6,680.44	6,390.69
8	General Credit Card (GCC) - Total (No. in million)	11	13	12	12	20.2
9	General Credit Card (GCC) - Total (Amt. in billion)	1,493	2,117	1,498	1,745.14	1,940.48
10	ICT-A/Cs-BC-Total Transactions (No. in million)	827	1,159	1,489	2,101.90	3,231.80
11	ICT-A/Cs-BC-Total Transactions (Amt. in billion)	1,687	2,652	4,292	5,913.47	8,706.43

Source: *Compiled from various Annual Reports of Reserve Bank of India (RBI)*

Pradhan Mantri Jan-Dhan Yojana (PMJDY) – A Milestone

Pradhan Mantri Jan Dhan Yojana was announced under the Government of Prime Minister Sh. Narender Modi on the occasion of Independence Day in the year 2014. It was launched under the National Mission for Financial Inclusion on 28th August 2014. Initially it was launched for a period of 4 years comprising two phases. The first phase from 2014-2015, primarily focused on universal access to banking facilities with at least one basic banking account for every household, financial literacy, access to credit, insurance and pension. The second phase from 2015-2018 was covering overdraft, micro insurance and pension schemes for unorganized sector which includes swavlamban and creation of credit guarantee fund.

PMJDY scheme has played a significant role in creating a universal platform for financial services for every citizen of India and is an ambitious financial inclusion plan. As per the data on numbers of accounts opened under PMJDY as on 07 February 2018, total 31.07 crores of accounts were opened. Out of these 13.47 crores accounts were opened in the rural areas by public sector banks that constitutes the highest account opened by public, private banks or RRB(Nimbrayan, Tanwar, & Tripathi, 2018).Thus, it shows that government have been putting concerted efforts for achieving cent percent financial inclusion right from the beginning of PMJDY.

Current Status of PMJDY

The table 3 provides the present status of progress attained by PMJDY in achieving financial inclusion in India. As on 12 May 2021, a total of 27.96 crore beneficiaries have been covered by all types of banks at rural branches, out of which 20.61 crore beneficiaries were covered by public sector banks. The credit for this goes to concerted and continuous efforts of the Government of India that has made this initiative a success.

The public sector banks are not only leading in rural area but even in urban area around 90% of the beneficiaries are covered by them. The involvement of private sector banks is negligible where out of total 42.38 crore beneficiaries at rural and urban branches taking together, only 1.25 crore belongs to them i.e., only 3% of total number of beneficiaries whereas the share of regional rural and public sector bank is 18% and 79% respectively.

Other parameters are deposits in accounts and the Rupay debitcards. 85.28% Rupay cards have been issued by public sector banks whereas 11.14% and 3.58%. The total amount of 1,12,185.85 crore have been deposited in public sector banks whereas only 27,525.61 crore and 4,458.12 crore of amount have been deposited in regional rural and private sector banks respectively. The dominance or the degree of concentration in public sector banks can be seen in the data related to all the parameters.

Demonetization and Digitalization

As mentioned earlier in the study, demonetization is the act of stripping/ Banning /taking back of a currency unit of its status as legal tender. The demonetisation of 500 and 1,000 banknotes was a policy enacted by the Government of India on 8 November 2016. All 500 and 1,000 banknotes of the Mahatma Gandhi series ceased to be legal tender in India from 9 November 2016[1]. It adversely affected the performance of various industries in the immediate quarter (January – March, 2017) but for some industries, it had positive implications.

Table 4 given below provides comparative data on different components of digital transaction in pre and post demonetization. For the pre- demonetization phase, data has been collected from May to Oct 2016 and for the post-demonetization phase, the same has been collected from Nov 2016 to April 2017 as demonetization happened in Nov 2016.

Table 3: Beneficiaries as on 12/05/2021 (All figures in Crore)

Type	Number of Beneficiaries at rural branches	Number of Beneficiaries at urban branches	Number of Total Beneficiaries	Deposits in Accounts (In Crore)	Number of Rupay Debit Cards issued to Beneficiaries
Public sector banks	20.61	12.92	33.53	112185.85	26.42
Regional Rural bank	6.65	0.94	7.60	27525.61	3.45
Private sector banks	0.69	0.56	1.25	4458.12	1.11
Grand Total	**27.96**	**14.42**	**42.38**	**144169.58**	**30.98**

***Source**: Progress report https://pmjdy.gov.in/account*

[1] "Withdrawal of Legal Tender Status for 500 and 1000 Notes: RBI Notice (Revised)". Reserve Bank of India. 8 November 2016. Retrieved 8 November 2016.

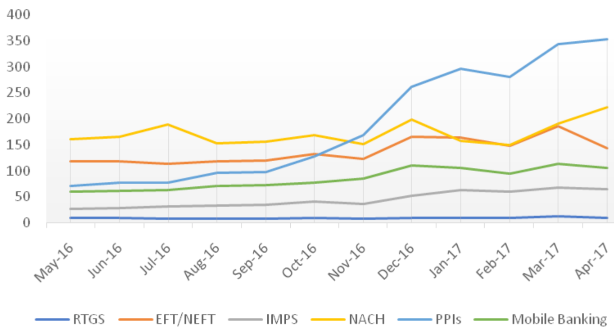
Table 4: Digital Payment Methods in Pre and Post Demonetization

Volume (in Million)

System	May-16	Jun-16	Jul-16	Aug-16	Sep-16	Oct-16	Nov-16	Dec-16	Jan-17	Feb-17	Mar-17	Apr-17
RTGS	8.71	8.83	8.26	8.56	8.47	9.01	7.88	8.84	9.33	9.11	12.54	9.54
EFT/NEFT	117.5	118.91	113.48	118.55	120.15	133.21	123.05	166.31	164.19	148.21	186.7	143.17
IMPS	27.66	29.68	32.18	33.89	35.93	42.09	36.17	52.78	62.42	59.75	67.41	65.08
NACH	160.59	166.5	189.6	153.33	157.29	169.39	152.51	198.72	158.74	150.45	191.01	222.17
PPIs	70.95	76.98	77.85	96.28	97.07	126.9	169.03	261.09	295.8	280.02	342.09	352.23
Mobile Banking	60.76	62.52	64.44	71.76	72.62	78.08	85.45	110.64	106.12	95.41	113.65	106.18

All payment systems such as RTGS, NEFT, NACH and IMPS, PPIs and Mobile banking have been showing an upward growth from Nov 2016 to Dec 2016 when prevailing currency was taken aback by the government in Nov 2016 and the same fact can be seen in the graphical representation given below in figure 1. The growth rates for the same period are 12.18%, 35.16%, 30.30%, 45.92%, 54.46% and 29.48% respectively. This growth continued for next few months as well whereas some of them dip slightly for a while.

Figure:1
Volume of Transactions in Pre & Post Demonetization(in million)



Prepaid payment instruments (PPIs), which helps in buying goods and services and also enables the transfer of funds and remittances, is the only payment instrument among all other components which has shown consistent increase in its volume of transactions during the entire period of pre and post demonetization. It rose from 70.95 million in May to 97.07 million in Sept and then reached to 169.03 million in Nov 2016 when demonetization took place. By the end of April 2017, it reached as its peak of 352.23 million. Figure 1 also depicts that in terms of the individual volume of transactions, PPIs, NACH & NEFT are the most positively affected payment system by demonetization.

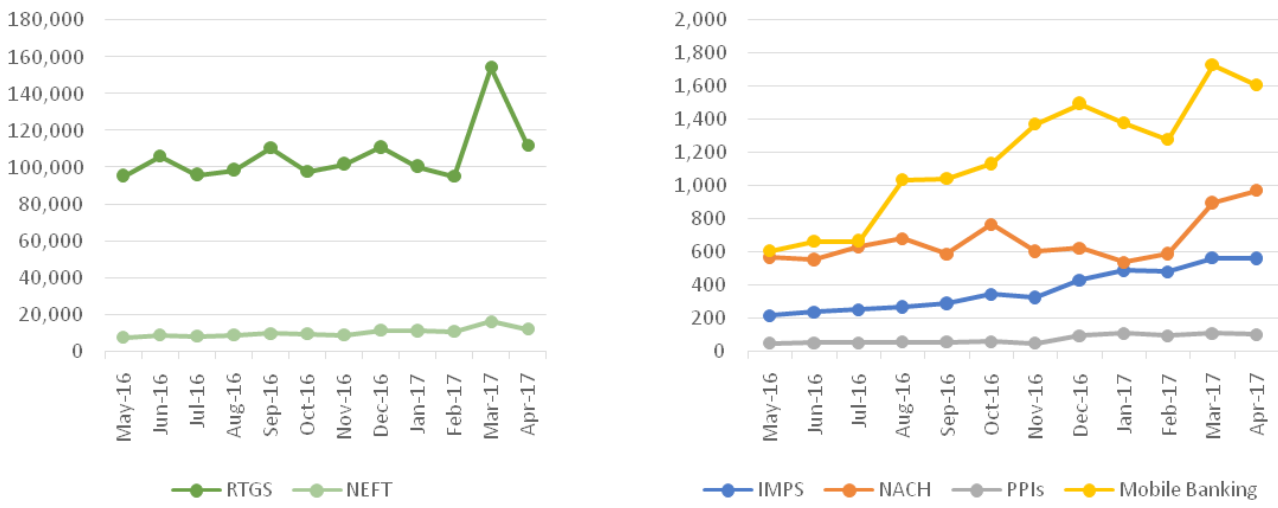
Table 5 is providing a glimpse of the value of the transactions of all the components during the same pre and post demonetization. In terms of the value of transactions as well, all the instruments have increasedfrom Nov to Dec 2016 and showed positive effect of demonetization on them at least in initial period. After December onwards they are showing a mixed response. Figure 2 is depicting the level of transactions in terms of their value.

Table 5: Digital Payment Methods in Pre and Post Demonetization

Value (in Billions)

System	May-16	Jun-16	Jul-16	Aug-16	Sep-16	Oct-16	Nov-16	Dec-16	Jan-17	Feb-17	Mar-17	Apr-17
RTGS	95,526	1,06,101	96,016	98,592	1,10,564	97,554	1,01,894	1,10,980	1,00,603	95,267	1,54,095	1,11,744
NEFT	7,733	8,815	8,145	8,764	9,880	9,505	8,808	11,538	11,355	10,878	16,295	12,156
IMPS	216	237	251	268	289	344	325	432	491	482	565	562
NACH	570	557	634	682	590	768	607	627	541	592	899	972
PPIs	50	53	53	56	56	60	50	98	110	96	107	104
Mobile Banking	608	663	668	722	1,043	1,135	1,373	1,498	1,383	1,280	1,731	1,612

Figure 2 : Value of transactions in pre and post demonetization (in billion)



It is important to note that when it comes to the volume of transactions, the share of RTGS is quite low but in terms of the value of transactions, it has managed to hold a substantial share as the minimum amount to transact through RTGS is Rs. 2,00,000. So, this is the reason why the share of RTGS is negligible in terms of volume but highest in terms of the value of the transactions.

COVID-19 andDigitalisation

- The explosion of Covid 19 pandemic has smashed different economies across the globe in many ways. It has affected all the sectors be that Medical, Education, Manufacturing, IT communication, Tourism and Banking at the most. It affected the health sector directly which in turn had an impact on the financial infrastructures of the countries as well. In a country like India, where the government has consistently been trying hard to attain sustainable and inclusive development by achieving cent percent financial inclusion, the current global pandemic crisis has put their efforts slowed down. "The effect of the COVID-19 pandemic could reverse the limited progress that has been made on financial inclusion. The substantial gains in improving the level of financial inclusion made over the decades are in danger of being rolled back due to this COVID-19 pandemic" the UN secretary General said in April 2020.

India is battling with COVID-19 pandemic since year 2020 when citizens of India faced the lockdown for the very first time. This pandemic has not only affected the health infrastructure of the country but also restricted the physical movement of the population where outdoor activities are not possible as it would increase the chance of spreading the contagious virus. Therefore, this pandemic has given an opportunity to the nation where financial transactions can be carried out digitally using electronic means. This would not only protect the users from the virus but can also speed up the process of digital financial inclusion which was in its infancy stage before this pandemic despite the tireless efforts of the government.

Earlier most of the people accessed financial services offline i.e. by visiting banks, using ATMs and were making payments for different purposes by making personal visit to the institutions. Only a fraction of the country was using digital means. But thepandemic crisis has forced the rest of the population also to use digital platforms from making payment for bills, groceries to transferring money to their relatives/friends, most of the transactions are now taking place online. So, people are moving from financial inclusion to digital financial inclusion in this crisis.

Digital Payment Methods in Pre and Post COVID-19

The impact of COVID-19 pandemic on digital transaction has been provided in table 6. The data has been collected from Sept 2019 to August 2020, differentiating the entire period between pre and post pandemic phase. The pandemic hit India around March 2020 when for the first-time people faced shutdown of all the activities across the country. The data related to the month of Sept and Oct 2019 for UPI and BHIM Aadhaar Pay was not provided in the annual reports of the RBI.

Table 6 and table 7 are providing data about digital payments in pre and post COVID-19 phase in terms of volume and value of the transactions respectively.

Table 6: Digital Payment Methods in Pre and Post COVID-19

Volume (in Million)

	Sep-19	Oct-19	Nov-19	Dec-19	Jan-20	Feb-20	Mar-20	Apr-20	May-20	Jun-20	Jul-20	Aug-20
RTGS	11.44	12.89	13.39	13.60	13.73	13.32	11.90	5.44	9.00	11.97	12.48	11.68
IMPS	204.16	236.93	228.08	256.47	259.53	247.80	216.82	122.48	166.68	198.91	222.10	246.13
NEFT	216.70	242.40	219.46	233.69	260.56	248.36	262.37	175.98	192.94	227.40	240.10	234.61
PPIs	403.36	484.83	467.21	507.34	523.71	502.64	398.29	208.60	303.19	354.67	398.74	493.26
UPI	-	-	1218.77	1308.40	1305.02	1325.69	1246.85	999.57	1234.50	1336.93	1497.35	1618.83
BHIM Aadhaar Pay	-	-	0.65	0.74	0.94	0.97	0.89	2.07	1.34	1.47	1.60	1.95

Table 7: Digital Payment Methods in Pre and Post COVID-19

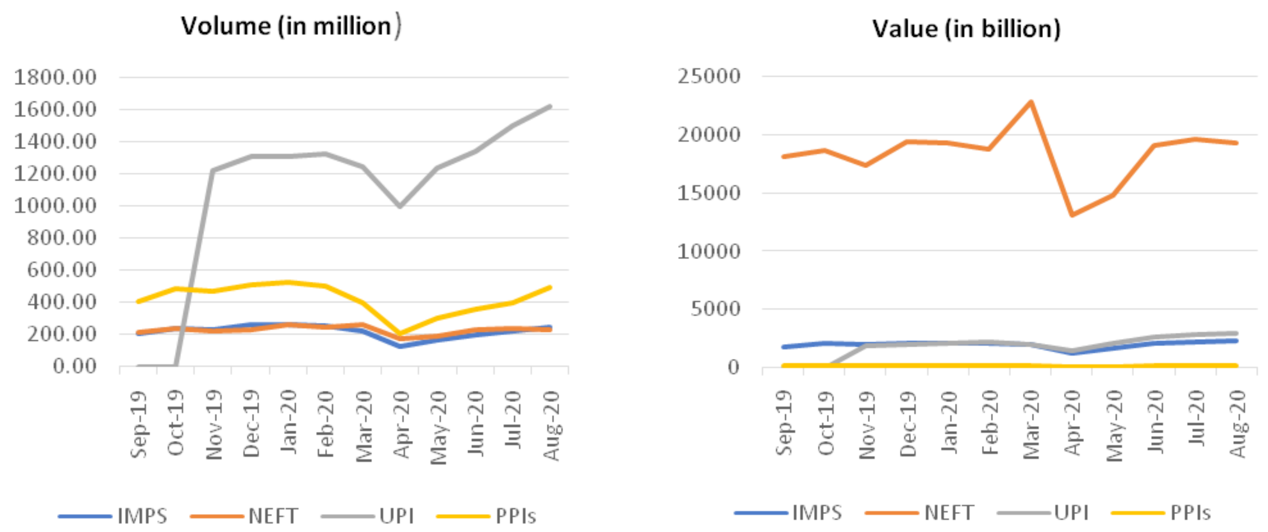
Value(in Billion)

	Sep-19	Oct-19	Nov-19	Dec-19	Jan-20	Feb-20	Mar-20	Apr-20	May-20	Jun-20	Jul-20	Aug-20
RTGS	142982.3	138614.15	86798.06	103169.4	98808.21	89900.97	120472.21	64436.53	70418.69	86519.8	83352.8	72923.8
IMPS	1837.47	2126.6	2029.04	2109.34	2168.11	2145.66	2019.62	1211.41	1694.02	2069.51	2257.75	2351.37
NEFT	18117.81	18607.9	17346.51	19422.31	19294.64	18704.94	22836.65	13064.06	14817.5	19065.9	19631.1	19305.52
PPIs	178.35	186.58	178.44	189.22	182.86	172.96	153.41	96.48	128.08	144.94	155.21	168.08
UPI	-	-	1892.29	2025.21	2162.43	2225.17	2064.62	1511.41	2183.91	2618.35	2905.38	2983.08
BHIM Aadhaar Pay	-	-	0.97	1.12	1.41	1.49	1.41	2.17	1.59	1.86	2.16	2.53

The pandemic has affected all the payment systems more or less in the same way. For RTGS, IMPS, NEFT, PPIs and UPI, the volume as well as the value of transactions have decreased from Mar to April. Figure 3 is depicting such a decline in initial phase of lockdown along with the comparative analysis of these instruments both in terms of volume & value of the transactions. The possible reasons for this decline can be the low level of economic activities across the country due to lockdown, people lost their jobs, faced reduction even exhausted their savings. In fact, the main focus of the citizens was primarily on their safety and they were trying to win the battle of pandemic. So, this could be the reason why the volume of digital transactions decreased in the initial few months.

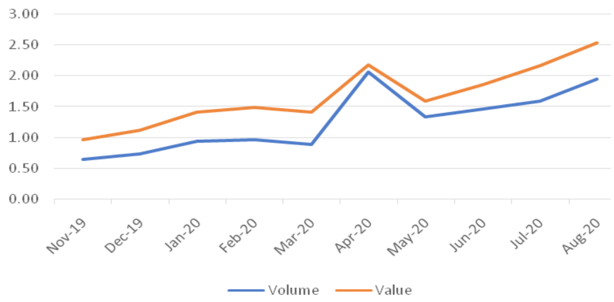
But after 2 months i.e., April onwards digital transaction have again started to increase as they were increasing in pre pandemic phase. This growth can be seen by an upward movement in the graphs given below in figure 3. Although in terms of the individual level of volume, UPI seems the star of all the components and NEFT is attaining highest share in terms of the value of transactions.

Figure 3: Comparative analysis of IMPS, NEFT, UPI & PPIs in Pre & Post COVID-19



BHIM Aadhaar pay is the only digital option that was increasing every month in pre pandemic phase. BHIM is the only digital payment mechanism that manged to increase from the month of March to April where other components were decreasing over the same period, though it declined from April to May and then increasing again. The positive impact of health crisis on BHIM has been shown in figure 4 both in terms of volume and value of the transactions.

Figure 4: BHIM Aadhaar Pay transactions



The popularity of BHIM payment system during health crisis has also been witnessed in various other studies as well. Bharat Interface for Money(BHIM) app which was launched by National Payments Corporation of India(NPCI) in December 2016, has gained a lot of popularity among different online payment gateways. This app is achieving tremendous increase since its launch even during the period of pandemic crisis.

Another report that also highlight the fact that now more people are using digital means is given by NPCI Price Report 2020. Table 8 provides data on the users share of households who use digital payment methods where 79% of households have used digital applications like Paytm and Phonepe to make payment online.

Table 8: Digital payment methods - User share of households

Digital Payment Instruments	Percentage of households of who do digital payments (covering all income group)
Paytm, PhonePe type apps	79%
UPI	52%
Online shopping using debit or credit card	38%
Use Bank App	34%

Source *: NPCI Price Report 2020*

Table 9 is representing the data provided by DigiDhan dashboard. It shows that Indian citizens have preferred digital payment option of BHIM-UPI in the time of pandemic which has increased from 9995 lakhs in April 2020 to 2736 lakhs in March 2021 in terms of volume of transaction.

Table 9: Monthly Growth of BHIM-UPI (Volume of transaction in Lakhs)

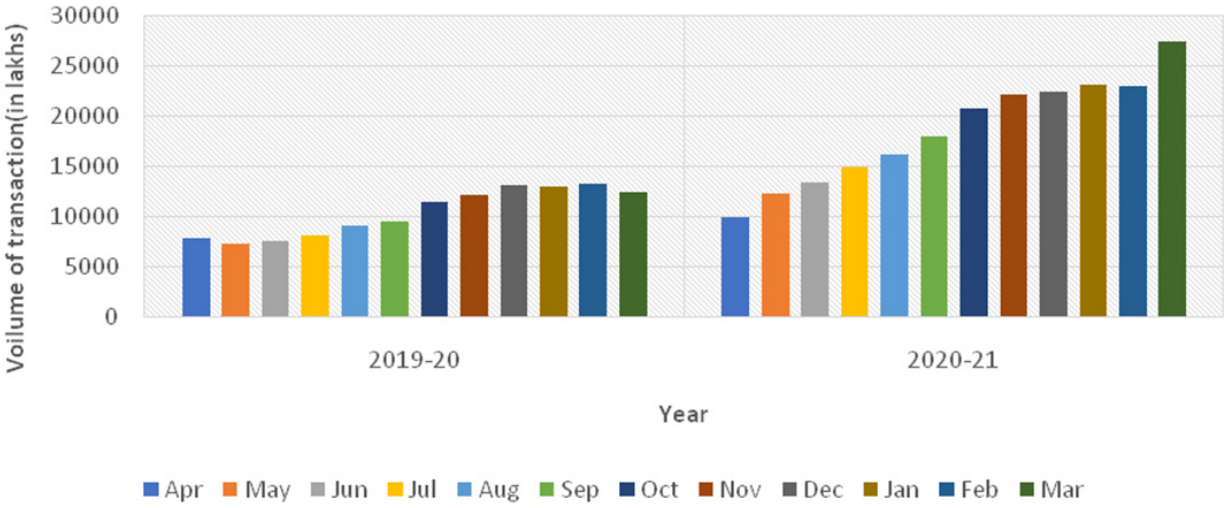
Year	Apr	May	Jun	July	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar
2019-20	7817	7334	7544	8222	9183	9549	1143	1217	1303	1309	1326	1248
2020-21	9995	1234	1338	1493	1617	1801	2075	2211	2231	2306	2298	2736

Source: Digidhan Dashboard

BHIM-UPI was also experiencing the same upward trend in year April 2019-March 2020 but the growth has increased manifold during pandemic phase and the same is depicted in figure 5 given below, reflecting a comparative graphical representation from year 2019-20 to 2020-21.

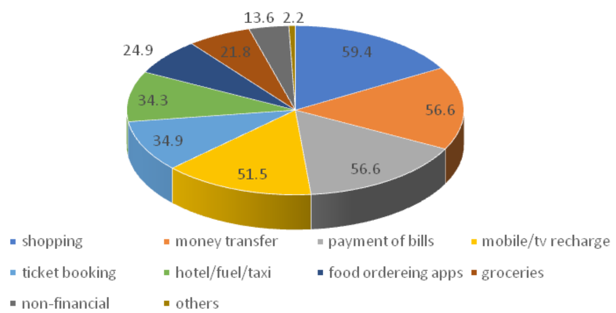
are aware about how to transact financial services using mobile banking. BHIM- UPI is also attracting individuals and gaining importance in a shorter period of time where almost half (49.5%) of the users have knowledge about this platform.

Figure 5: Monthly Growth of BHIM-UPI (Volume of transaction in Lakhs)



It is also important here to assess the main purpose for which people are using DF instruments during health crisis and is depicting in figure 6. As per the report of RBI in April, 2021 on Retail Payment Habits in India, among different purpose of digital transactions, the most important purpose is shopping that was supported by 59.4% respondents and followed by the purpose of making payment of bills and transferring money which accounts for 56.6% each.

Figure 6: Purpose of Digital Transactions (in per cent)



Source: *RBI Bulletin April, 2021 – Retail Payment Habits in India*

The data provided by RBI also provide valuable information about the level of awareness on digital payment products of the Indian populous which is given below in table 10. More than 90% respondents are aware about the use of Debit/credit cards and 72.7% have knowledge about net banking. With the development of strong internet connectivity and increasing using of mobile phones, 72.3%

Table 10: Level of Awareness about Digital Platforms and Preferred Mode

Mode of Payment	Awareness on Digital Payment Products (%)	Preferred Mode for Digital Payments (%)
Debit/Credit Card	93.6	62.50%
Net Banking	72.7	31.30%
Mobile Banking	72.3	27.60%
BHIM UPI	49.5	23.80%
Prepaid Cards, Mobile Wallets	44.2	13.80%
NEFT/RTGS	40.8	9.90%
IMPS	24.2	7.20%
Others	2.2	1.40%

Source: RBI Bulletin April, 2021 – Retail Payment Habits in India

The level of awareness about digital payment methods would be more crucial if this awareness can actually make individual using these modes for digital payments because only awareness cannot help in the process of digitalisation of financial inclusion. This is the reason why the government is also interested in finding out the preferred mode of digital payments for their citizens.

The report of the Retail payment habits in India by RBI has also discloses that the Debit/credit card as the most preferred mode of digital payment for 62.50% respondents.

The Net banking (31.30%), Mobile banking (27.60%) and BHIM-UPI (23.80%) are the other most preferred means. The NEFT/RTGS facilities are preference of only around 10% respondents.

Conclusion

Financial inclusion is one of the important economic barometers of a country whose inclusive growth lies on how well it serves its entire population by providing adequate financial services at affordable cost. This paper aimed at providing a comparative study of financial inclusion in India by focusing on PMJDY. By providing data from RBI, it has been concluded that government is making concerted efforts for cent percent financial inclusion and it can infer from the data where numbers of banking outlets and BSBDA in villages has increased from 2015-2016 to 2019-20. Similarly, the number of and amount in KCC, GCC have also increased over the specified time period. ICT based transactions have also rose from their previous levels. Among all the instruments presented only ICT based transactions are showing consistent progress in its volume and others are giving a mixed response over last 5 years.

But the role of private sectors banks has documented as negligible and their performance in terms of services extended to needy people is not at par with public sector banks. The reason can be the main objective of the private sector banks which is not to serve the weaker section of the society and thereby contributing in overall economic growth but to gain profit for their own by facilitating financial services to mass. The dominance or the degree of concentration in public sector banks has been documented in the present study.

Dynamic environment has made government to use digital platform as well to further strengthen their initiative of financial inclusion. So digital financial inclusion has also gained importance in recent years. The paper also provided a comparative study of digital financial inclusion by incorporating two unpredicted situation- demonetization and COVID-19 pandemic. By analysing the impact of demonetization and COVID-19 pandemic on digital transactions, we have concluded that these two different situations have affected digital transaction in different ways.

Initially, after demonetization the digital transaction which were also increasing in pre demonetization phase, have maintained to increase for next few months both in terms of volume & value of transactions.Then they have showed a slight decline in its volume because demonetization did not take away the jobs or saving of the people. People were facing challenges in exchanging their currency only so online platform was best option for them to transact rather than waiting to get their currency exchanged and then transact in cash- based transaction. But when after few months, new currency was easily available so people again preferred cash-based transaction instead of digital transactions.Prepaid payment instruments (PPIs)have shown consistent increase in its volume of transactions during the entire period of pre and post demonetization. In terms of the individual volume of transactions, PPIs, NACH & NEFT are the most positively affected payment system by demonetization.

The COVID -19 pandemic has differently affected digital transaction and ultimately digital financial inclusion as compare to demonetization. With sudden entry of dangerous virus people faced health crisis and complete lockdown across the country made them lost their jobs and faced shortages in the level of their savings. Initially, the volume as well as value of digital transaction declined fromMarch to Aprilfor RTGS, IMPS, NEFT, PPIs and UPI but later on when the lockdown got lifted, people started their jobs and managed to transact for their livelihood so the volume of digital transaction has increased once again and still showing upward trend.

The possible reasons for this decline can be the low level of economic activities across the country due to lockdown, people lost their jobs, faced reduction even exhausted their savings. In fact, the main focus of the citizens was primarily on their safety and they were trying to win the battle of pandemic. But thereafter digital transactions have again started to increase as they were increasing in pre pandemic phase.In terms of the individual level of volume, UPI seems the star of all the components and NEFT is attaining highest share in terms of the value of transactions.

BHIM Aadhaar pay was the only digital option that was increasing every month in pre pandemic phase and manged to increase from Mar 2020 to April 2020 both in terms of value and volume of the transactions. The popularity of BHIM payment system has also been witnessed in other researches as well. The possible reason for this popularity can be the convenience, trust , security, privacy and suitability for the customers. This payment gateway is established by the Government so customers can easily trust it in terms of security of their personal and financial information. Customers can transact any amount of transaction as there is no such limit of minimum transaction as in case of RTGS and NEFT . Thus, it provides adequacy where people can transfer their funds, make payments digitally that too in simplified manner even over their mobile phones.

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Annexure 1

Submission Date	Submission Id	Word Count	Character Count
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Reviewers Memorandum

Reviewer's Comment 1: The study on the theme has been very nicely planned and executed. All the constructs under study have been explained comprehensively with the appropriate support of literature. The study has undertaken the very updated and recent literature which makes it more relevant.

Reviewer's Comment 2: The paper has shown the pre and post Demonetization and Covid analysis in the form of tables and graphs, this makes it more comprehensible. The data has been obtained from the RBI Reports or NPCI Price Reports, which ensures its reliability.

Reviewer's Comment 3: Financial inclusion is one of the important economic barometers of a country. Both the COVID-19 pandemic and Demonetization have affected digital transactions and ultimately digital financial inclusion in one way or another. Prepaid payment instruments (PPIs) and BHIM Aadhaar pay came out to be the most positively affected channels in these two situations

Citation

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Editorial Excerpt

The article has 08% of plagiarism which is the accepted percentage as per the norms and standards of the journal for the publication. As per the editorial board's observations and blind reviewers' remarks the paper had some minor revisions which were communicated on a timely basis to the authors (Anil, Surender, Preeti) and accordingly all the corrections had been incorporated as and when directed and required to do so. The comments related to this manuscript are noticeably related to the theme "**A Comparative Study of Financial Inclusion & Digital Financial Inclusion in India in the wake of Demonetization and COVID-19 Pandemic**" both subject-wise and research-wise. The term financial inclusion helps a country in providing adequate and affordable financial services to all and also helps in achieving sustained inclusive growth of the nation. Thus, financial inclusion plays an important role in a country's financial well-being. This study highlights the current status of financial inclusion initiatives with special reference to the landmark policy Pradhan Mantri Jan Dhan Yojana (PMJDY) in the wake of Demonetization and COVID-19 Pandemic. Overall, the paper promises to provide a strong base for the further studies in the area. After comprehensive reviews and editorial board's remarks the manuscript has been categorized and decided to publish under "**Empirical Research Paper**" category.

Acknowledgement

The acknowledgment section is an essential part of all academic research papers. It provides appropriate recognition to all contributors for their hard work and effort taken while writing a paper. The data presented and analyzed in this paper by (Anil, Surender and Preeti) were collected first handily and wherever it has been taken the proper acknowledgment and endorsement depicts. The author is highly indebted to others who had facilitated in accomplishing the research. Last but not least endorse all reviewers and editors of GJEIS in publishing in a present issue.

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