

Driving Financial Inclusion: Technology as an Indicator of Financial Ecosystem Development During the COVID-19 Pandemic in India

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ABSTRACT

This paper examines India's level of digital access to financial services as compared to other Asian countries. The study also intends to analyse whether COVID-19 has influenced the usage trend of the selected digital payment indicators in India. Data has been collected from the World Bank Global Findex Database and RBI bulletins. Cross country descriptive analysis was used for studying India's digital financial access against the other Asian countries. Event study methodology followed by trend analysis was employed to examine whether COVID-19 has impacted the digital payment indicators' usage in India. The findings of the study indicated that India's position in digital financial access needs to be improved. It was further identified that COVID-19 has increased the usage of digital modes for financial transactions in India. There has been a significant increase in the usage volume of mobile banking after the declaration of the pandemic. Govt. can frame its action plans to make use of the opportunity created through the pandemic to improve digital financial access in India.

KEYWORDS

COVID-19, Financial Access, Financial Inclusion, ICT, Pandemic

1. INTRODUCTION

According to World Bank (2018), financial inclusion means that individuals and businesses have access to useful and affordable financial products and services that meet their needs – transactions, payments, savings, credit and insurance – delivered responsibly and sustainably. The definition of financial inclusion is quite broad and it requires the measurement of various indicators. Any financial data framework has a micro and macro perspective. The micro perspective takes into consideration the information that is granular enough and the macro perspective deals with the economic and policy implications of financial inclusion (Gadanecz & Tissot, 2016). The governments and other policy institutes in each nation are framing their initiatives for enabling the access and choosing/usage aspects of financial inclusion. Sha'ban et al. (2020) observed that to enhance financial inclusion, several country-level characteristics and economic factors needs to be improved. The study further

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identified the need for improving banking system conditions and digital technology for attaining the goals of financial inclusion. The indices developed by various researchers highlights the concept of financial inclusion from different dimensions. Demand, supply, and infrastructure were the three dimensions considered by the researchers (Ambarkhane et al., 2016) while developing the index for India. Reserve Bank of India (2021) had developed the financial inclusion index by including the dimensions of access, usage and quality. As evidenced by RBI (Das, 2021), the dimensions of access and usage take into consideration the digital indicators as its sub-dimensions. The present study will be focusing on the concept of digital financial inclusion considering its significance at the national and international level.

In the Asian scenario, it is quite significant to conduct a study to understand the status of financial inclusion. While some countries are leading in terms of attaining financial inclusion and its advanced characteristics, some other countries in this region are still able to provide access only to basic financial services (Loukoianova et al., 2018). Demographic characteristics, high institutional quality and good governance significantly impact the level of financial inclusion in Asian countries (Park & Mercado, 2015). In this context, it is essential to study the role of ICT in enhancing access to financial products/services and compare the position of India with the other Asian countries.

The adoption and usage of ICT in financial services depends upon the users' internal and external environment which is closely connected with their social, cultural, economic and personal factors. The variations in these factors can act as an opportunity as well as a barrier for the involvement of ICT in financial inclusion. In the present scenario, the outbreak of the COVID-19 pandemic across the globe and its effects on the functioning of many sectors including banking and finance can also be examined from this framework. In the Indian context, COVID-19 impacted the normal way in which the economy was functioning and this demanded alternative mechanisms to overcome the challenges created by this pandemic. It is worth discussing the access to financial products/services during the outbreak of COVID-19 since the severity of the pandemic and the uncertainty of its duration has impacted the financial sector at the global level. The first COVID-19 case was reported in India during January 2020 and from then enough efforts have been taken by the central as well as the state governments to prevent this disease. In March 2020, WHO declared COVID-19 as a pandemic (WHO, 2020) and subsequently, the lockdown was imposed across the nation. The restrictions imposed by the Government of India, impact on the free mobility, social distancing norms, fear among the people etc. have their reflections on the Indian citizen's financial access. Hence, this paper also looks at how financial access using ICT based platforms (digital financial inclusion) have been impacted due to the COVID 19 pandemic in India. Further, the present study intends to analyse the selected payment indicators to see the changes in the usage trend before and after the declaration of the pandemic which can be a guiding factor for the financial social workers to plan their activities accordingly.

For a country like India, it is worth examining the status of the people's adoption of digital platforms as compared with other nations since the Government and policy institutions are focussing their efforts towards digital financial inclusion to promote the idea of a cashless economy. Following this agenda, the Reserve Bank of India has recently announced the introduction of the digital index. The outcome of this paper can be a guiding factor for financial social workers and financial institutions to orient their clients on the need for switching to digital platforms for financial access. To the best of our knowledge, literature examining the COVID-19 pandemic and digital financial inclusion has been found limited.

The rest of the paper has been divided into seven sections. Section two examines the literature related to financial inclusion and its various dimensions including the ICT infrastructure. This summarizes a framework to link the technological infrastructure and financial access based on the existing academic literature. It further looks at the effect of the COVID-19 pandemic on the usage of ICT to access financial services. Section three covers the research design and the analytical results and its related discussions are presented in section four. This is followed by the conclusions and implications in section five. The limitations of the present study and the scope for future research in this area has been mentioned in section six and section seven respectively.

2. REVIEW OF LITERATURE

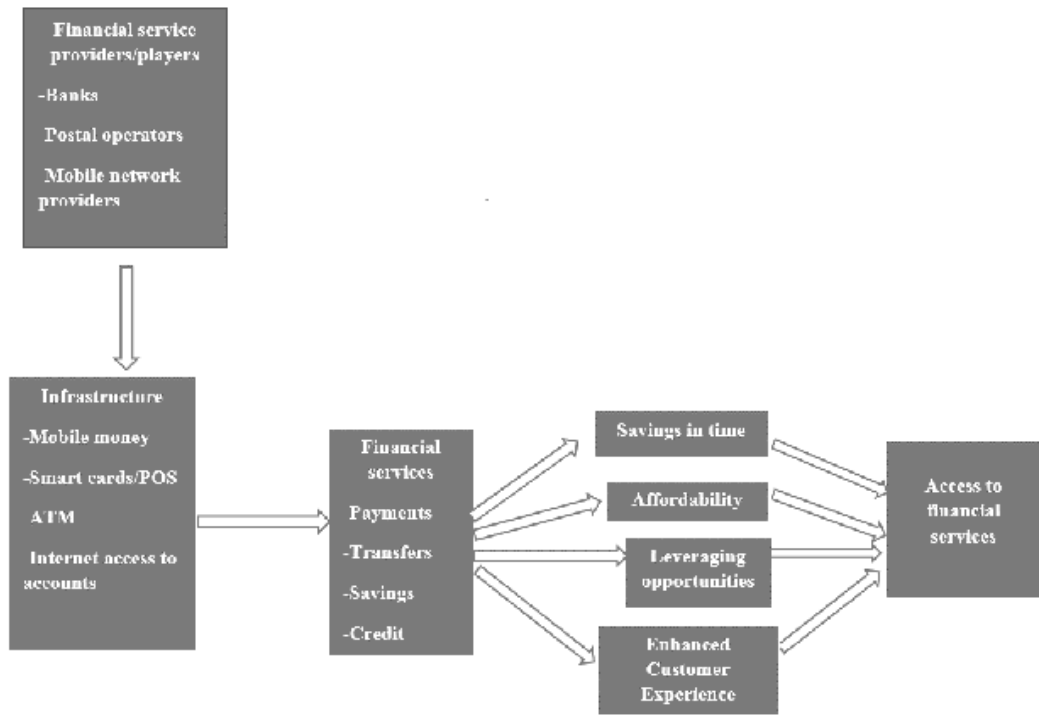
2.1 Financial Inclusion in India

Financial inclusion in India has been significantly affected by the gender, age, education and income of individuals (Dar & Ahmed, 2021). A study conducted among the marginalized street vendors (Nandru et al., 2021) identified that financial inclusion has a significant impact on the financial wellbeing of the population. It was reported that accessibility, availability, usage and affordability are the significant determinants of financial inclusion. (Dutta et al., 2021) examined the level of financial inclusion among the tea garden workers in North East India and commented that access to bank account is necessary to attain financial inclusion, but it is not the sufficient condition since the usage of these accounts by the individuals for financial purposes determine the level of financial inclusion. These comments had supporting pieces of evidence from the literature (Ananth & Sabri Öncü, 2013) which states that expanding financial inclusion requires a paradigm shift that extends beyond opening a bank account. Involvement of the formal banking sector, overcoming the information asymmetries, enhancing financial literacy, customized financial products for financially excluded populations and efforts to improve financial inclusion are the main dimensions identified to improve financial inclusion. Affordable and transparent financial access is quite essential to sustain financial inclusion in India (Lenka, 2021) and hence Government of India has to play a significant role in facilitating this which can ultimately lead to the financial development of the country.

2.2 Financial Ecosystem Using ICT for Better Access to Financial Services

Access to financial services can be affected by various factors. Age, legal identity, literacy, place of living, psychological and cultural barriers, social security payments, bank charges, level of income, the attractiveness of the product etc. are some of the factors that affect the access to financial services by people (Chithralega & Varalakshmi, 2016). The inability to access financial services by the rural community or the uneducated class of people was a major hurdle in attaining financial inclusion in the country (Muralidhar et al., 2019). It was further identified that education and internet connectivity also have significant effects on access to financial services (Abel et al., 2018). The role of ICT in enabling better access to financial services was subjected to study by many researchers (Jain & Gabor, 2020). Wang and Guan (2017) referred to the role of ICT in making the people financially included establishing the strength of usage factors of financial inclusion. Modern Information and communication technologies can act as a tool for extending financial services to the rural communities in the country (Bansal, 2014). The majority of the people in the country do not have proper access to financial services due to the lack of a proper delivery model which satisfies the needs of low-income families. The study conducted among the rural households in Uganda (Munyegera & Tomoya, 2017) identified that mobile banking, ATMs and mobile money agents can bridge this gap between the users and the suppliers of financial services/products. It was further observed that the reduction in the distance travelled by the users for accessing the service points was also a motivating factor for people to access financial services since the mobile money agents were located in the nearby localities of the users and this mechanism can be used for increasing temporary savings among the people. The study conducted from the Indian perspective identified that usability, awareness and the ability to use telecommunication services positively impact financial inclusion (Siddiqui & Siddiqui, 2020). Based on the review of existing literature in this area, the link between the various elements of Information and communication technology-enabled products and the financial services are explained in the below framework (Figure 1). If the financial services- payments, transfers, savings and credit are used through mobile phones, debit cards, credit cards, ATMs and the internet, the same shall result in savings in time, savings in cost to the users and it will further help the users to leverage the opportunities available in the financial sector. This trend will ultimately lead to easier access to financial services.

Figure 1. Flowchart explaining the ICT and financial access framework (Source: Authors derived framework)



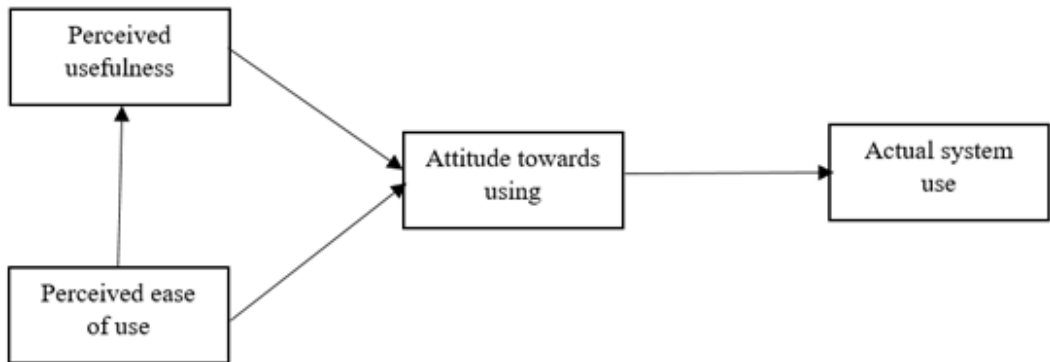
2.3 COVID-19 Pandemic and the Changing Scenarios

COVID-19 has created both opportunities and challenges at a global level. It changes the households' risk-taking behaviour and their outlook towards the economy (Yue et al., 2020). The lockdown and social distancing norms have positively impacted the customers' willingness to adapt to technology (John & Thakur, 2021). The unequal breakdown of political, social, relational and material infrastructures during the pandemic period has established the significance of the already existing hierarchical system of financial inclusion infrastructure (Guérin et al., 2021). Financial inclusion helps low and middle-income countries to overcome the issues of poverty and inequalities in financial services created as a result of the ongoing pandemic (Gutiérrez-Romero & Ahamed, 2021).

2.4 Technology Acceptance Model and Financial Access During the COVID-19 Pandemic

The Technology Acceptance Model (TAM) explains how users come to accept and use a technology (Davis, 1989). The model framework (Figure 2) explains that the perceived usefulness and perceived ease of use can be the motivation for the customers for using new technology (Marangunic & Granic, 2015). Here, perceived usefulness can be defined as the degree to which a person believes that using a particular system would enhance his or her job performance. Perceived ease of use can be defined as the degree to which a person who is using a particular system would be free of effort (Davis, 1989). In the Indian context, pieces of evidence for the TAM framework can be identified from the literature related to demonetization and its technological effects (Chakrabarty et al., 2021; Chandrasekhar & Ghosh, 2017; Midthanpally, 2017). Thus, extending it further to the pandemic period, considering the limitations and complexities in the free access of financial services, people can switch to the ICT platforms for accessing the financial products and services (Ling, Pei, Li, & Zhang, 2021). In 2003, the

Figure 2. Technology Acceptance Model (Source: Authors derived framework)



SARS epidemic had accelerated the launching of digital payments and e-commerce in China (Xiao & Chorzempa, 2020). Digital payments had shown remarkable growth in Sierra Leone, when the country was seriously affected by the Ebola virus outbreak in 2016 (Finextra, 2016). Similar pieces of evidence are already visible as a result of the COVID-19 pandemic (De, Pandey, & Pal, 2020; Fu & Mishra, 2020) since going digital can eliminate physical contact which will help to prevent the spread of the virus to a greater extent. COVID-19 is providing an opportunity to improve access to digital channels for many economies that are looking for broadening financial inclusion (Nana & Adjei, 2020).

Hence, based on the review of literature, the following hypotheses were framed for the study:

- H1:** The level of digital financial access in India is lower as compared to other Asian countries.
- H2:** There is a significant difference between the usage of digital banking platforms before and after the declaration of a pandemic.
- H3:** There is a significant difference in the volume trends of payment indicators after the declaration of a pandemic.

3. RESEARCH DESIGN

The study was conducted using secondary data. Data were collected from the World Bank global finindex database, RBI monthly bulletin etc. The data collection and analysis was conducted in a three-step procedure in line with the defined objectives of the study. Firstly, using the data extracted from the global finindex database for the period 2011-2017, a cross country descriptive analysis was conducted to study the digital financial access landscape. The cross country descriptive analysis is a widely used tool for studying the level of digitalization across the nations based on the global finindex database (Antonijević et al., 2021). For this study, World's largest continent Asia has been considered and 12 countries belonging to the South Asian (6 countries) and East Asian (6 countries) clusters, representing the low income, middle income (Lower middle income and upper middle income) and high-income categories were chosen. The authors identified the following five variables from the finindex database to conduct the cross country analysis considering the country-year-data availability trade-off: account access, credit card usage, debit card usage, mobile money usage and the usage of mobile phones to access the accounts. Using these variables, India's position was compared against the other eleven South and East Asian countries to understand the level of digital banking adoption in the country. Secondly, in the Indian context, data was collected to examine the state of digital financial inclusion. To conduct the analysis, we followed the event study methodology. This is an effective statistical tool for analysing the effects of unanticipated events (Wang & Ngai, 2020). Even

though event studies are popularly used for studying the abnormalities in stock returns, the tool is found to be effective in analysing the changes in other fields connected with economics, finance and accounting (Corrado, 2011; Konchitchki & O’Leary, 2011; Sorescu et al., 2017;). Hence, in this study, the RBI monthly statistics on the volume of NEFT, IMPS and mobile banking transactions were used to study whether there is any impact of COVID 19 on digital banking in India. For this analysis, data was collected for 35 months ranging from the pre and post declaration of COVID 19 as a pandemic by WHO. The declaration had taken place on March 2020 and hence a period of 17 months before the declaration (October 2018- February 2020) and after the declaration of pandemic (April 2020- August 2021) was considered for the study. Thirdly, the study analyses the change in the usage volume of these variables (NEFT usage volume, IMPS usage volume and Mobile banking usage volume) during this period using trend analysis. SPSS statistics version 23 software was used to analyse the study.

4. RESULTS AND DISCUSSIONS

4.1 Digital Financial Access Landscape in India: A Cross Country Analysis of the Selected Asian Countries

Based on the data collected from the Global finindex database (Kunt et al., 2017) for 12 Asian countries for the period 2011-2017, a cross country descriptive analysis was conducted to study the level of digital financial access in different nations. It is identified that in these countries the percentage of the total population, having access to accounts have been increasing except for Hong Kong and Sri Lanka (Figure 3).

In this context, it is essential to see the means through which these accounts have been accessed by the users. The analysis of the data on debit and credit card usage by the population implies that Hong Kong, Japan, South Korea and Taiwan have the highest number of users in terms of debit and credit cards (Figure 4).

The usage of mobile money by the Asian countries was also subjected to study. However, it was identified that usage of mobile money was not in existence during 2011 among the Asian countries or the statistics were not collected during the period. In 2014 and 2017 also only limited countries were using mobile money (Figure 5). In the year 2017, Mongolia and Bangladesh had the highest percentage of the population owning mobile money accounts. A significant finding of this analysis is that India’s position in terms of mobile money account ownership reduced from 2014 to 2017.

Figure 3. Level of account access

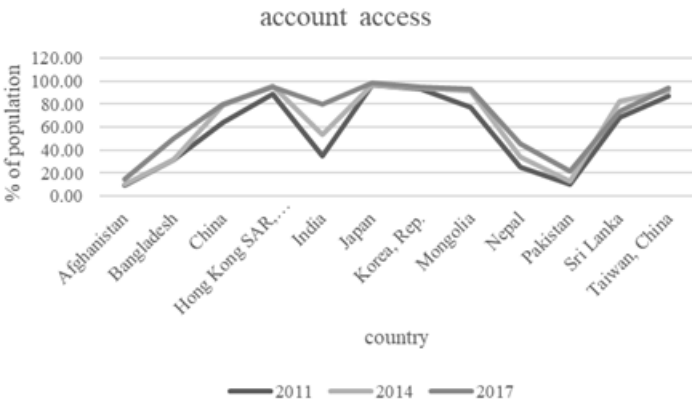


Figure 4. Debit card and credit card usage

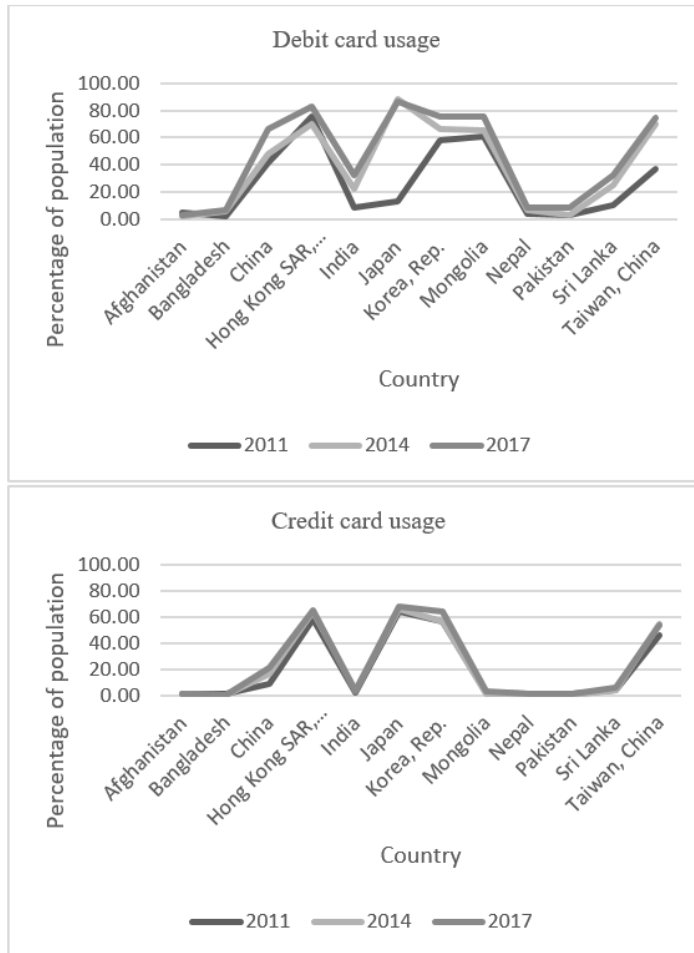
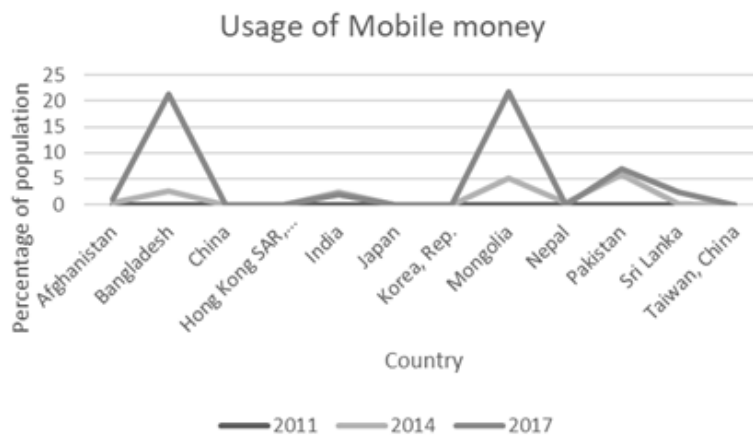


Figure 5. Usage of mobile money



The 2017 statistics (Global finindex database, 2017) shows that around 67.10% of the South Korean population used mobile phones or the internet to access their bank account (Figure 6). As compared to the other South and East Asian countries in terms of mobile/internet usage for accessing a bank account, India's position needs improvement.

The average percentage of the 12 Asian countries for the period 2011-2017 has been given in Table 1.

As compared to the other Asian countries, India stands at the eighth position in terms of the account access of the population over the period. However, further analysis reveals that the involvement of technological platforms in facilitating account access is at an early stage as compared to the other Asian countries. This was supported by the observations (Menon, 2019) from the previous studies on financial inclusion in India which has compared India's position against the other BRICS nations. In terms of the percentage of the Indian population connected to the technological elements of financial

Figure 6. Account access through mobile phone/internet

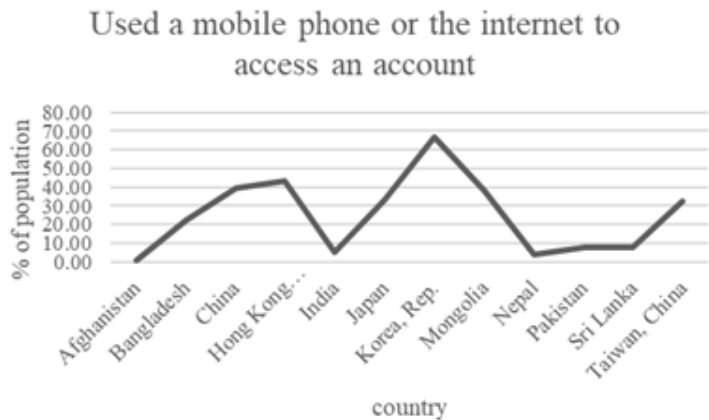


Table 1. Cross country descriptive analysis results

Country	Account access	Credit card usage	Debit card usage	Mobile money usage	Used mobile phone to access the account
India	56.08	2.98	21.06	1.45	1.77
Afghanistan	11.29	1.09	3.02	0.41	0.30
Bangladesh	37.59	0.50	4.55	7.98	7.47
China	74.30	15.12	52.03	0.00	13.27
Hong Kong	93.37	62.59	76.18	0.00	14.46
Japan	97.10	66.30	62.67	0.00	11.10
South Korea	94.09	58.70	66.65	0.00	22.37
Mongolia	87.50	2.07	67.35	8.97	12.80
Nepal	34.83	0.56	6.40	0.11	1.33
Pakistan	14.88	0.60	4.71	4.23	2.53
Srilanka	74.95	4.21	22.37	0.83	2.56
Taiwan	90.96	51.40	60.66	0.00	10.87

services such as debit and credit cards, mobile money and internet access to accounts reveals that the Government of India has to take further steps to initiate and promote the usage of information and communication technology for accessing the financial services. These findings are further supported by the evidence from the literature (Das et al., 2020) which states that adoption of digital financial services is still poor in India as compared to other South Asian countries due to various factors associated with security, convenience, legal restrictions and infrastructural determinants. The relationship between ICT infrastructure and financial development for the economic growth of South and East Asian countries were established (Pradhan et al., 2015) in the existing literature which emphasize the need for the policymakers to focus on enhancing the usage of ICT platforms for financial access in these countries. The findings of the study on the digital financial inclusion in South East Asian countries (Koh, Phoon, & Ha, 2018) identified that people from the nascent developing countries in South East Asia tend to shift to the digital financial services facilitated by the mobile network operators whereas, in the later stage developing countries, the banking sector leads the initiatives for digital financial inclusion. On the other hand, in developed countries, the enhanced banking ecosystem with efficient ICT platforms facilitate digital financial access through the collaborative efforts of various industry players. The digital financial level of South Asian countries was much below that of the European, Central Asian, Latin American and Caribbean regions (Mani, 2018) in terms of the usage of banking services, debit and credit cards and e-banking facilities. In the Indian context, in terms of the usage of cards for making cashless transactions, there has been progress over the years. However, this progress is still at a low level as compared to the other countries that were subjected to comparison. A comparison of the average debit and credit card usage of Indians shows that there has been a significant difference between the usage statistics of these two card segments (The average credit card usage over the period was 2.98% whereas the average debit card usage was 21.06%). This preference of debit cards over credit cards among Indians have been established (Swain, Chandra & Kesh, 2020) and its reasons have been identified as to protect themselves from overspending and other issues of compulsive buying. This point was further supported by (Mukhopadhyay, 2016) that even though the usage of prepaid cards and mobile payments have been increasing in the country, India accounts for the lowest proportion of the population who makes cashless payments among the G20 nations. The usage of these digital banking platforms was also subjected to the access and usage of internet facilities. The connectivity constraint can be a major reason for the low level of mobile money and mobile banking platform usage in India. This is supported by the findings of (Chandrasekhar & Ghosh, 2017) that even though the percentage of internet users in India had been increasing for fifteen years, this marginal increase is far lesser as compared to the other Asian countries such as China and South Korea. Hence, the hypothesis (H1) which states that the level of digital financial access in India is lower as compared to other Asian countries stands accepted.

4.2 COVID-19 and the Usage of ICT for Financial Inclusion

During the times of the COVID-19 outbreak, there was difficulty in accessing financial services through the usual means. Following the Technology Acceptance Model (TAM), people tend to accept the technology during the pandemic period due to the difficulties in accessing financial products/ services through the usual means. Hence it was hypothesized that COVID-19 impacted the usage of ICT for accessing financial services. To test this in the Indian context, we examine the data collected from RBI monthly bulletin regarding ICT usage in banking. We collected the data on Mobile banking, NEFT and IMPS transaction volumes during the period October 2018-August 2021. The results of the analysis (Table 2) shows that the usage volume of mobile banking, NEFT and IMPS transactions have changed significantly after the declaration of COVID-19 as a pandemic by the WHO on 11th March 2020. This may be due to the wide media coverage on the severity and spread of the disease, measures taken by the government authorities, increase in the cases reported, the fact that there were no immediate vaccinations available during the initial months, fear factors developed amongst the people and the self- precautionary measures adopted by the people to protect themselves from the

virus. All these reasons have ultimately promoted the usage of digital- contactless modes for financial transactions which should be considered safer during the current scenario.

These findings in the Indian context are further supported by the results of the study conducted among the Hungarian Generation X individuals (Daragmeh et al., 2021) which states that COVID 19 has resulted in increasing society's acceptance of digital payment methods. This was further evidenced among the Indonesian generation X and baby boomers (Santosa et al., 2021) who are currently using the digital modes of payments and have shown a tendency to continue using it post-pandemic since they are accustomed and satisfied with the usage of this payment mode. In the Indian context, it was commented that (Shree et al., 2021; Undale et al., 2021) the increase in e-wallets usage during the pandemic has to be seen as a forceful adoption rather than a wilful adoption and utmost care should be taken not to experience a sharp decline in its usage during the post-pandemic period. This pandemic led consumer payment behaviour has been impacted by socio-demographic factors, emotional factors and new technologies introduced during this period (Huterska et al., 2021). The government's responses to the COVID-19 crisis in low and lower middle income countries are moving these countries towards increased digital payments adoption (Mansour, 2021). Further, the results of the study conducted among the Indonesian and Malaysian population (Aji et al., 2020) identified that perceived risk and perceived usefulness has a direct impact on the intention to use the digital payment modes during the pandemic period which can continue in the future as well.

The findings of our present study have theoretical support from the TAM theory which evidences the motivation to use the new technology during the pandemic period (C.C & Prathap, 2020). Hence, the hypothesis (H2) - there is a significant difference between the usages volumes of digital banking platforms before and after the declaration of the pandemic stands accepted.

4.3 Trends in the Digital Payment Indicators: An Evidence-Based Examination

An in-depth analysis of these variables for the thirty five months shows that there has been a significant increase in the usage volume of mobile banking after the declaration of the pandemic. WHO declared COVID-19 as a pandemic and the Government of India had declared a countrywide lockdown for 21 days in March 2020. The lockdown which was initially declared for 21 days further extended to three more phases, thus covering a period of March-May 2020. The economic impact of the lockdown was reflected in the transaction volumes of these payment indicators during these months. During March, April and May 2020, the transaction volumes had declined for which one reason that could associate is the sudden decline in the income of the people due to the lockdown restrictions imposed by the Government. Further, the phase-wise unlocking of the country which had spread across the period June- November 2020 had resulted in a progressing trend in the transaction volume since slowly people started recovering from the sudden economic shock created by the lockdown. Despite this reported observation, the trend in these payment indicators was progressing over the period. The trend analysis shows that during the post-pandemic period, of the three payment indicators, mobile banking reported the highest transaction volume followed by NEFT and IMPS. This trend had started during the third quarter of 2019 itself when the mobile banking volume was relatively higher as compared to the other two platforms.

Table 2. Paired sample T-test results

Variable	Before the declaration of pandemic		After the declaration of pandemic		t-value	Sig.
	Mean	Standard deviation	Mean	Standard deviation		
Mobile banking usage	6259.31	6179.299	25055.8824	8031.91866	-19.034	.000
NEFT usage	2177.6012	2178.41931	5372.71	528.34429	-7.432	.000
IMPS usage	1983.4071	351.01949	2892.4429	743.65226	-6.286	.000

An analysis of the mean values of the payment indicators before and after the declaration shows that there has been a tremendous increase in the mean usage of mobile banking, NEFT and IMPS after COVID 19 was declared as a pandemic. Further, the incremental analysis shows that the increase was significantly visible in mobile banking volumes (pre_ mobile banking mean= 6259.31, post_ mobile banking mean= 25055.8824) followed by NEFT volume (pre_ NEFT mean= 2177.6012, post_ NEFT mean= 5372.71) and IMPS volume (pre_ NEFT mean= 1983.4071, post_ IMPS mean=2892.4429). It was identified that for all these three payment indicators, during March 2021 there is a sudden increase in the transaction volumes as compared to the previous months. The reason that could associate with this increase is the beginning of the second wave of the pandemic in India which had further created a fear and risk factor among the people that resulted in the preference of contactless payment modes. Hence, this observation supports the Technology Acceptance Model that was discussed at the beginning of this paper. Thus, the hypothesis (H3), there is a significant difference in the volume trends of payment indicators after the declaration of the pandemic stands accepted.

5. CONCLUSION AND IMPLICATIONS

The financial ecosystem analysed in this study connecting the technological elements with the access to financial products/services can be used further to initiate the steps for providing better access to financial services. The cross-country analysis of the global finindex data revealed that India's position in terms of the usage of digital platforms as compared to the other Asian countries needs to be improved. The study was conducted till the period 2017 since the latest finindex database is available only till this period. It is worth making a note that in 2016, the Government of India had initiated demonetization in the country with financial digitalization as one of its main objectives. Many researchers have concluded that the effect of this initiative was not long-lasting, and digitalization could not be attained as expected, however, the COVID-19 pandemic has created a new opportunity for attaining digitalization since, in the current scenario, people tend to make use of the digital platforms for their safety and security reasons. It was identified that COVID-19 has increased the usage of digital modes for financial transactions. It was further established that there has been a significant increase in the usage volume of mobile banking after the declaration of the pandemic. The 'stay at home economy' is fuelling the use of digital means for accessing financial services. The pressure from the Government authorities and other drag factors are comparatively lesser in this scenario and hence, if adequate measures are taken at the right time, the effect of this increase in digitalization can be long lasting. Hence, even though India's position was not good as compared to the other Asian countries till 2017, with the recent scenario and the inferences drawn from the current study it can be concluded that if the trend is promoted positively, India has the potential to improve its position among the Asian countries.

6. LIMITATIONS OF THE STUDY

This study has been conducted in three stages- the first stage is the examination of India's relative position in digital financial inclusion as compared to other Asian countries. Even though data has been available for the selected indicators for the majority of the countries, there were indicators for which data collection had not taken place in particular years for some countries. This limited the scope for including the other Asian countries also into the framework of the present study. Secondly, the study is extended to examine the usage volumes of the selected payment indicators before and after the declaration of the pandemic. Since COVID-19 is a relatively new area of study, academic literature was found to be limited. The academic literature focusing on the effect of other pandemics on digital payments were also found to be very limited. Thirdly, the study has taken into consideration, three payment indicators from the RBI monthly bulletins for thirty-five months. The study had to be

restricted to these three indicators since the data availability for the other indicators for these thirty-five months were found to be limited.

7. SCOPE FOR FUTURE RESEARCH

As a direction for future research, this paper is considered as the first piece of study that covers the digital financial inclusion in India in a three-stage procedure starting with the cross country descriptive analysis based on the findex database and extending it to the impact of the COVID-19 pandemic on digital financial access and ending it with the usage trend in the specific indicators in digital payment platforms during this period. In the cross country descriptive analysis, the present study has compared India with other Asian countries. However, the scope of the study can be broadened if the comparison has been extended further to include the other regions. To analyse the impact of COVID-19 on the usage of digital payment, the present study has considered a time duration of thirty-five months. This period can be extended further based on the availability of the published monthly statistics on the usage volumes of these payment indicators. Similarly, the other payment indicators can also be considered for analysis which can strengthen the findings and their managerial implications in the Indian context.

CONFLICT OF INTEREST

The authors of this publication declare there is no conflict of interest.

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