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Financial Inclusion in India: An approach through FinTech as a solution

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Abstract

This paper presents an explorative and deductive perspective on the importance of FinTech and its possible impact on improving financial inclusion. Financial inclusion is a pressing issue with many policy implications. Governments and central banks worldwide have come up with different programs to achieve maximum financial inclusion. However, full financial inclusion is still a dream for many countries. Financial inclusion, it issues, and challenges can be supported with FinTech. However, FinTech has its own policy implication, potential benefits and pitfalls. Fintech should be complemented by supporting infrastructure and a robust legal environment to be effective with proper regulatory policies by government and regulatory financial institutions. Alternatively, we find that widespread and uneven access to digital infrastructure can also have its own direct and indirect risks which can be detrimental and will start another chain of financial exclusion. We also find that Idiosyncrasies related to machine learning and artificial intelligence coding errors can perpetuate the cycle of denying digital finance products and services to specific groups of people, leading to another form of financial exclusion. Another challenge is to keep in mind is the procyclical behavior of Fintech players which may post-pandemic effect the trend and can have many negative effects including lack of trust in digital finance

Keywords: Financial Inclusion, Fintech, Blockchain, Pandemic, Financial exclusion.

Introduction

Financial Inclusion is an issue of much importance for countries across the globe. Globally, governments have been coming up with large projects to achieve maximum financial inclusion, which is very much influential in human and economic development. Financial inclusion intends to broaden financial product/services access to the poorer and disadvantaged sections of society. Bringing everyone under the formal financial and banking system and increasing its access has many more significant implications. Yet, inequality among different classes of people makes it an arduous task among governments to reach the bottom line, thereby hindering inclusive growth.

Financial Inclusion is “the process of ensuring access to financial services and timely and adequate credit to vulnerable groups such as weaker sections and low-income groups at an affordable cost.” (Committee on Financial Inclusion led by Rangarajan, 2008). Financial inclusion's purpose includes boosting inclusive growth by providing equal opportunities to each citizen to access formal financial products on credit, savings, and investments. Policies and programs to foster financial inclusion have been introduced in India, leading to its significant increase. The recent successful program and initiative were Pradhan Mantri Jan Dhan Yojana (PMJDY) in 2015, which included a mass no-frills zero-balance accounts opening campaign by mainly nationalized banks in India. The idea behind PMJDY was to provide at least one formal bank account in a household, and the final numbers achieved were quite impressive. But this is not enough. Even though PMJDY aimed at one account at least per household, there is a need for at least one bank account per individual, making a significant difference in improving financial inclusion.

Further, improved financial inclusion, especially in a country like India, is crucial as the benefits from the success achieved by India's secondary and tertiary sectors have not trickled down to the lower class segments (Varghese and Viswanathan, 2018). In an emerging economy such as India, where a significant portion of the citizens are still from the socially and economically lower class and divided across caste, income inequality, and inadequate infrastructural facilities, FinTech can help to improve the present scenario. This is the crux of interest of this paper. FinTech or Financial technology in recent years emerged as a practical solution to challenges raised by financial exclusion. Fintech is providing financial services through technology assistance such as mobile phones and other technology channels. E-banking, M-banking, and payment apps are examples of FinTech.

Financial inclusion: a review

Many scholars across the globe have advocated financial inclusion as an effective tool in fighting poverty. Economists, various central banks, the IMF, World Bank, and the United Nations have stressed the importance of financial inclusion in their policy notes for years now. We need to start with the different dimensions and underpinnings of financial inclusion to appreciate the concept of financial inclusion better. No wonder the financial inclusion's goals and achievements the world has achieved until today are not sufficient. More programs aiming at a more significant chunk of the poor and emerging economies need to be developed and implemented.

Dev (2006) presents some of the concerns and threats to financial inclusion in India. The paper recalls that even though the bank nationalization of 1969 by the government led by Indira Gandhi had helped in expanding the physical (or geographical) reach of banking services to rural areas, there is still a serious fraction of the resident population remaining unbanked. The privilege of access to the formal banking system is not extended to marginal farmers, people working in unorganized sectors and jobs, people engaged in self-employment, women, and old age citizens. As Dev (2006) identified, the main problem of financial inclusion is the tendency of such people to rely on informal sources of credit, which is not beneficial to the economy and society at large. In the recent past, Rangarajan Committee was set up succeeding 2007 budget for improving the financial inclusion initiatives in India.

According to Dev (2006), financial inclusion is the "delivery of banking services at an affordable cost to the vast sections of disadvantaged and low-income groups." Financial inclusion on a broader term includes access to credit, having a savings account, access to proper insurance, and other payment and remittance mechanisms. All these components are unreachable to the disadvantaged sections of society. Access to credit is the most crucial one. Some of the issues to be tackled by policy initiatives are bringing more farmers and their households into the formal banking scenario. Dev (2006) identifies that financial inclusion is very low in the farmer household of the country taken in total. Thus he proposes that the RBI and the policy-setting committees consider this when designing and developing the programs aimed at increasing financial inclusion.

Another challenge is to tackle down the supply-side and demand-side issues. The supply-side issues mean banking facilities, infrastructure, and services-related initiatives. At the same time, the demand-side representing the characteristics of the target groups, which may hinder the banks

from providing services to those sections. There is a need to set up separate or independent institutions for promoting financial inclusion due to the differential interests and human resource and capital shortage faced by scheduled and commercial banks. Respective institutions set up solely to improve financial inclusion can work in a different attitude, ethos, and culture from that of regular banks. This is very important for improving financial inclusion as there are larger scopes for behavioral issues associated with banking with disadvantaged sections. Bank officials may not treat them with respect, and the official banking formalities may be challenging to those individuals. At the same time, demand-side issues like low productivity, low skill sets possessed by vulnerable and disadvantaged sections, financial illiteracy, vulnerability, and riskiness brought in by the lack of assets owned need to be addressed. Initiatives should be implemented to address these issues. Incubating and training Self Help Groups and Microcredit societies and designing financial instruments that cater to the specific needs of the target groups are some of the initiatives to start with to achieve financial inclusion.

Sarma and Pais (2011) delved into the relationship between human development, as measured by Human Development Index (HDI) and Financial Inclusion. With the help of the "Index of Financial Inclusion" (IFI) proposed by Sarma (2008), the authors attempted to empirically estimate the linkage of financial inclusion to human development (as measured by human development index, HDI). HDI is a comprehensive measure of development used extensively by academicians, practitioners, and policymakers alike. On the other hand, IFI uses three parameters: first, accessibility, second, opportunity or availability, and third, usage or adoption of banking facilities and services. It is then derived as the number of facilities per 1000 and multiples populations.

The paper derived the IFI values of 49 countries (both developed and emerging) and related them to the HDI values. The study found that HDI and IFI move along the same direction, implying that HDI and IFI are correlated and almost tandem. The study also found that countries in their samples with higher financial inclusion, such as Denmark, France, Austria, Spain, and Belgium, also have the highest HDI. There are also countries like Saudi Arabia where HDI is very high but financial inclusion is very low. Some countries in Turkey, Iran, and Namibia have a relatively sound financial inclusion than HDI. In general, the study concludes that countries doing exceptionally well in HDI do exceptionally well in IFI. The impoverished countries in HDI will have very low IFI. In addition, the study also finds that factors like GDP, adult illiteracy, infrastructural

development, modernization, and income inequality are crucial for financial inclusion improvement.

Kumar (2013) studied financial inclusion and its determinants with particular reference to India. The author starts with the intriguing question of whether financial inclusion can genuinely help the poor overcome their low life standard and financial condition. Citing the benchmark papers from the field, he argues that the efficiency of the financial system can have a long-run influence on the developmental and economic growth of a country. Also, a fully functional and efficient banking and financial system can accelerate capital formation and expansion.

The author provides literature evidence for developing communication infrastructure and facilities like telephones and the internet on financial inclusion. Remittances are an essential component of capital formation and financial inclusion, which strong networks can only increase among the banks. Thus the interconnectedness among banks also leads to financial inclusion. The author finds that the main problem with financial inclusion is the slant banking facilities coverage and monstrous income inequality. In this paper, the author empirically found that growth in account holdings between 1995-2008 is less than that of the population growth witnessed during the same period. The paper also reports a statistically compelling and positive association or impact of branch density/penetration on financial inclusion. Various measures and programs implemented by the RBI (Reserve Bank of India) are a proven success in general terms. Another interesting finding is that industrialization and employment opportunities also have a statistically significant, positive, and meaningful impact on financial inclusion.

Arun and Kamath (2015), in their paper “Financial Inclusion: policies and practices,” lead a discussion with practitioners and policymakers across the globe. They report the high cost of accessing banking and financial services as a policy issue. They also say that behavioral lethargy is observed towards new financial products disturbing emerging economies like India. One of the most successful interventions by governments across the globe is the disbursal of welfare money and other social benefit schemes through cards and bank accounts. It can be followed in India too. We were pretty successful in doing this during the welfare distribution in pandemic 2020.

Like Maslow’s need hierarchy theory, they also presented a pyramid model of the financial needs of the consumers. It was adapted from the “MasterCard Advisors Analysis 2014” given below in figure 1.

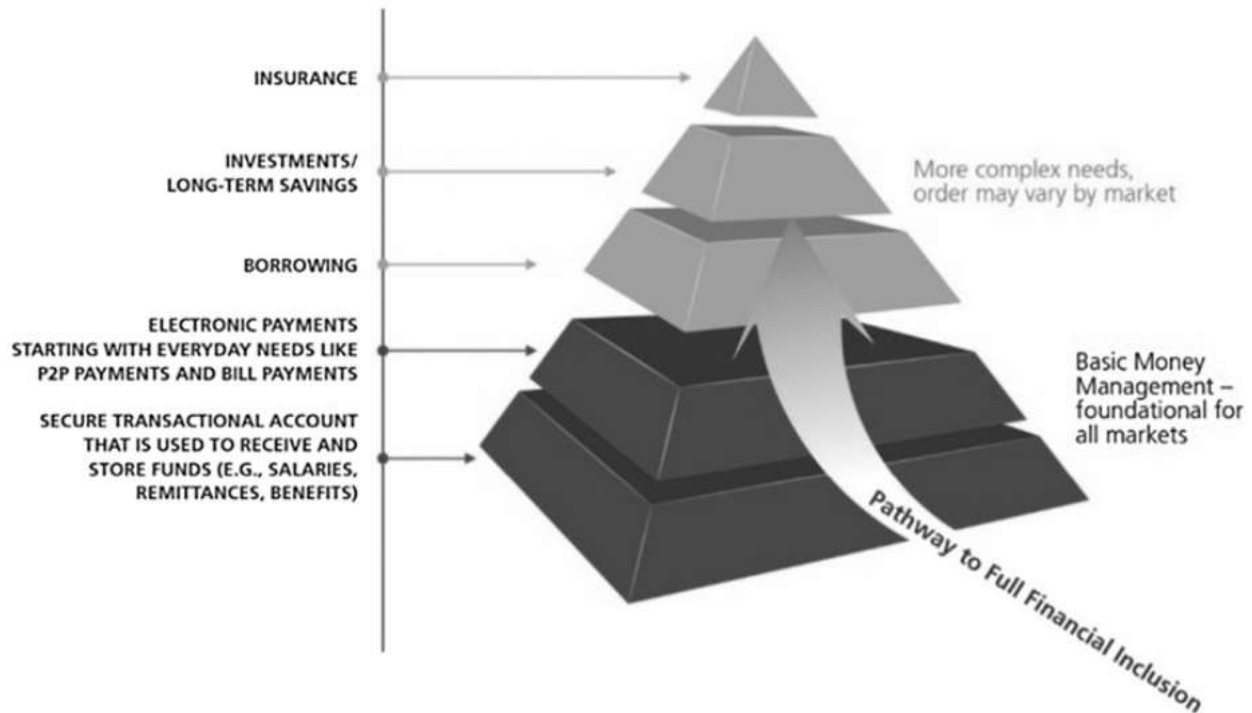

Figure 1: Financial needs hierarchy (adapted from “MasterCard” Advisors 2014)

Figure 1 shows the financial needs hierarchy model developed by “MasterCard” advisors. There are five phases of financial needs that can be broadly classified into two headings, “Basic Money management” needs, which lays the strong foundation for the higher-level needs such as “complex or advanced needs” built upon this foundation of basic needs. Under the basic money management needs comes the facilities for basic transactions such as payment and receiving and storage enabled accounts. It is used for daily usage and for very basic transactions. Strong networks and facilities follow this for e-payments to honor the utility bills and other peer-to-peer payment purposes. The second phase is the advanced or complex needs under which borrowing, investments, and insurance come. It is important to note that only an economy with a robust first phase foundation can address the second phase's advanced financial needs.

In the Nabard report on the status of microfinance in India (2017-18), the authors (Rao and Anand) threw light upon some exciting suggestions. They suggested that the financial inclusion reforms should be focused more on upcoming trends. Bank-SHG linkage is one point of importance. Another one is the prominence of Microfinance institutions. Future policies should keep this in mind, and innovative initiatives involving SHG’s and MFI’s can help to boost financial inclusion.

Jan-Dhan Yojana was a successful initiative, but more policy level measures are to be implemented to ensure that the accounts opened using the Jan-Dhan Yojana initiative remain active.

Let us now try to explore, discuss and appreciate the financial inclusion initiatives adopted by some other emerging countries. There is not much scope for discussing financial inclusion initiatives adopted by different countries, except one covering the Africa continent. Zins and Weill (2016) examined financial inclusion and its determinants of African countries. Financial inclusion in Africa shows huge variability from country to country.

In 2016, 51 percent of people belonging to the southern African countries had a savings bank account, while this percent was drastically small for the central African countries (with 11% of people having a savings bank account). Zins and Weill (2016) found that gender is one determinant of financial inclusion. Women have a lesser chance of having basic savings account from a formal bank than males. Another factor that affected financial inclusion in Africa was age. Options for having a bank account increase with age to a certain point but follow a non-linear relationship signifying that the probability of owning a bank account diminishes. Income was found to be another compelling determinant of financial inclusion. With higher income comes higher chances of having a bank account. They also found that education was a significant determinant of financial inclusion as it showed a positive association with all financial inclusion indicators. With higher levels of education comes higher financial inclusion. They also discuss in detail the barriers to financial inclusion in Africa.

The paper reports that barriers diminish as education increases irrespective of whatever barriers are there. Some of the barriers discussed in the paper are the distance from living place to bank, requirements related to documentation and identification, and trust in the banking system. Some determinant of mobile banking is discussed and reported in the paper. Age, gender, education, and income are the main determinants of mobile banking adoption too. The majority of people use bank accounts for education, farming/business, and save for spending after retirement (or old age). Also, there is a tendency among African women to engage in informal credit behavior instead of men. This should also be understood from the fact that women are less privileged than men regarding financial inclusion in Africa.

Allen et al. (2016) report using worldwide data that corroborate the fact that being rich, older, educated, and married influences the usage of bank accounts. They also report that men use bank

account more than women. Another finding is related to the cost of starting and operating bank accounts. When the cost of opening a bank account is higher, there is less chance of people resorting to the same. Some of the factors positively influencing the opening and usage of bank accounts are the number of ATMs or "ATM penetration," branch penetration, the degree of legal rights, and political stability. Tax policy also shows a more significant influence on owning a bank account. When the government as a policy initiative promotes tax incentives savings schemes, there are higher chances of bank accounts held by the citizens. They conclude by proposing that governments should make and implement policy initiatives for including disadvantaged sections to formal financial system, which is the only way to increase financial inclusion.

FinTech: a look back

The global financial crisis or subprime crisis of 2008 triggered the widespread diffusion of technology into finance and banking. It was an innovation from the more prominent players, including international banks, central banks, multinational corporations, and startups that focused on finance technology. The core idea was to satisfy and secure consumer needs by exploring the possibilities with the help of advancements in technology.

Gomber et al. (2017) conducted an extensive review of FinTech and came up with some interesting findings. FinTech had its original roots in digital finance or electronic finance (e-finance), which refers to digitalizing the finance sector. It happened globally around the 2000s and before, characterized by magnetic taped credit-debit cards, chip-based cards, e-banking and trading websites, and the advent of ATMs. The DFI defines digital finance as "innovation for integrating distributed digital banking, mobile solutions, and delivery platforms, micro-finance, payment solutions, peer-to-peer lending, and crowd-funding." However, FinTech is an advanced version of digital finance.

The term FinTech (written often as "FinTech", "Fin-Tech" or "Fintech") roots back to its origin from the words "finance or financial" combined with "technology" and is generally referred to as "connection of modern and, mainly, Internet-related technologies (e.g., cloud computing, mobile Internet) with established business activities of the financial services industry (e.g., money lending, transaction banking)" (Gomber et al., 2017). As compared to traditional financial service

providers, FinTech provides competitive edge and advantages to customers and providers alike such as “security”, “flexibility” and “efficiency” (Lee, 2015). FinTech can be seen as an innovation and based on the innovation classified by Christensen (1997) FinTech can be viewed as “sustaining” Fintech as well as “disruptive” Fintech. In the “sustaining Fintech”, the existing traditional players try to safeguard their business by bringing in technological innovations to the products offered (SBI Yono, Axis Mobile etc.). When it comes to “disruptive Fintech”, new players invest in technology diffusion into their products which potentially can replace traditional finance and banking. A prominent example is Google Pay, Paytm, and so on.

Phases of Fintech

As per Consumers International (2017) cited by Thakor (2020), there are three phases of Fintech. It is agreed widely by scholars and practitioners worldwide that the present is navigating through the third phase. Fintech first phase happened around 1966-1967. It is characterized by a boom in financial transactions and payments due to the development of communication facilities worldwide. At this point in time, trans-Atlantic cable was set up, which led to a widespread increase in telegraph and telephony communication. This initial first phase was followed by the second phase (1967-2008), characterized by more technological advancements like the advent of information technology (IT) and the Internet. Governments and central banks worldwide came into more agreement, and clearing systems and e-payments became more prominent. ATMs were introduced and flourished at this phase, and it continues to do so. See Figure 2 below.

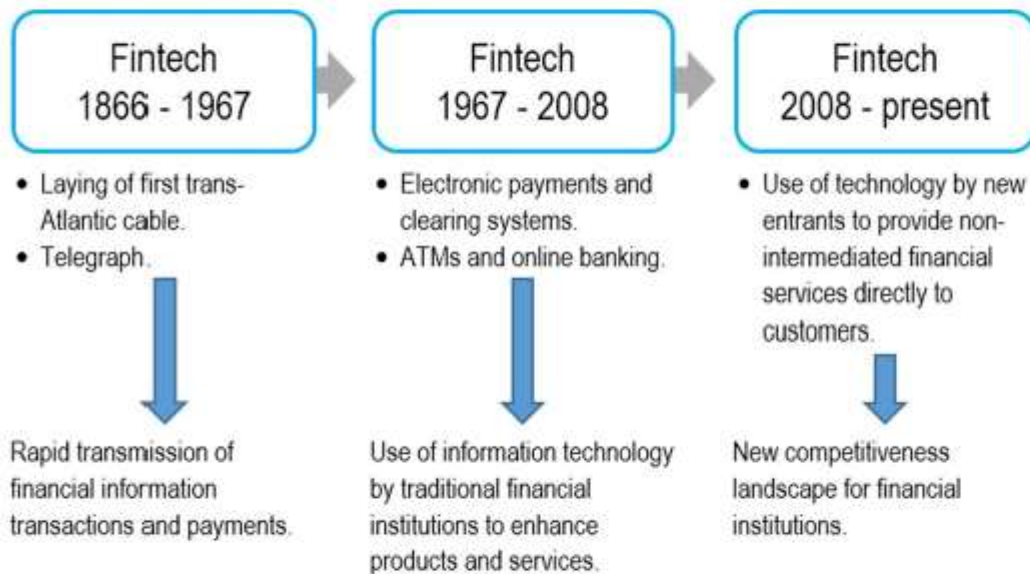

Figure 2: Phases of Fintech (Consumers International 2017)

The present era is characterized by the third phase of Fintech, which encompasses the advent of more advanced technology through blockchain technology and others. This phase is also witnessing a devolvement into a direct finace mode of transactions characterized by "non-intermediated" financial services or dis-intermediation, straight to customers and clients. Investment mobile applications (Apps) like Zerodha and Groww, payment apps like Google Pay and Paytm, and several banking applications are the outcome of this technological advancement. This phase is also characterized by a reduction of transaction costs to a significant extent. In this phase, a clear distinction between traditional players and new entrants is visible. Which, in turn, increases the competition among the players. It can possibly achieve more significant efficiency using big data and faster and increased information transmission.

The most recent blockchain technological advancement in this phase is the introduction of cryptocurrency, which is not guaranteed by any formal institution worldwide but endorsed by entrepreneurs such as Elon Musk. Endorsements by modern business entrepreneurs make cryptocurrency more acceptable to the public. It also causes a skyrocketing demand for the cryptocurrency. However, cryptocurrency doesn't come without its idiosyncratic risk. The technology behind cryptocurrency is blockchain, and the principles of blockchain are now applied in many utilities like payment applications.

Basel Committee identifies essential FinTech services and products under four broader heading. These are (i) Deposit, credit, and capital-raising services, (ii) Clearing-related, payments-related, and settlement-related services, (iii) Insurance-related services and Investment related services. All other services provided by FinTech are under (iv) market support-related services. We take a look at the first three headings.

Credit, deposit, and capital raising related services: Here, the products and services using Fintech advancements apply to the field of crowd-funding, lending, mobile, or telebanking. Credit rating/scoring also comes under this broad heading. This sector is mainly characterized by peer-to-peer lending, which eliminates the requirement of an intermediary in lending. The market platform allows lenders and buyers to come together and put their bids. A contract is entered into by lenders and borrowers, and the money is disbursed and collected. Peer-to-peer lending platforms have witnessed rapid growth in developed economies like Europe and the US and have recently been introduced in India.

Payments, clearing, and settlement-related services: the most recent advancement in this field is a cryptocurrency most commonly known as Bitcoin. It is a virtual currency based on computer code and is stored in a virtual ledger named blockchain. It is beyond the control of governments and central banks and is thus not regulated and highly decentralized. However, the market valuation of Bitcoin is around USD 600 Billion and reached as high as 800 Billion in the beginning month of 2018. Its high volatility characterizes the market for Bitcoin because of the nature of transactions, risks, and danger that comes with the same.

Investment management and insurance-related services: as Fintech uses Artificial Intelligence (AI) and Machine learning, investment related advices and services can now be provided by apps using the same. Daily, monthly, yearly, and other frequency market data are currently being analyzed with the help of machine learning and. AI. It leads to advisory services being automatically made available to users based on their profiles, interests, and risk perception. Technological advancements applied to the insurance sector also bring significant benefits to both customers and service providers. High risk and low-risk categorization can be made, which promotes rewarding of low-risk behavior shown by the clients. The market for insurance technology is going through a rapid growth phase as the world is witnessing a global pandemic.

Fintech and Financial Inclusion

To understand the importance of financial inclusion, one must first appreciate the problems, issues, and challenges raised by financial exclusion. In academia, it is referred to as "the problem of financial exclusion." Varghese and Viswanathan (2018) define "financial exclusion" as "the lack of access to appropriate, low cost, fair and safe financial products, and services from mainstream service providers, to certain consumers." Marginalized sections of the society such as small farmers, people residing in slums, ethnic minorities, the tribal, old age citizen, socially excluded groups, and minorities and primary women are usually affected by this grave "problem of financial exclusion." In short, financial illiteracy and lack of access to other social and economic resources hinder them from accessing formal finance. This access denial to financial and economic avenues and resources starts a perilous perpetuating cycle of exclusion that affects them for generations and, in macro terms, widening the gap between the upper and poor. To accelerate the problems faced by them, access to informal finance deepens their financial stability and condition.

There are some ways a democratic country can tackle these issues and challenges posed by financial exclusion. Many of these issues can be addressed by allowing the poor and marginalized section access to small bank accounts, microcredit, insurance schemes, credit cards, and health cards. Thus, they can also be brought under formal finance diaspora. However, these do come with their own challenges. Especially in a country like India, the foremost challenge is geographical access (Varghese and Viswanathan, 2018). As the rural population in India is highly overwhelming, responsible governments should take steps to ensure the rural population remains banked and is accessible to formal finance. Another challenge faced by India is wage and income inequality. As the rural population is exposed to a negligible income such as USD 1 per day, the cost of accessing finance exceeds the cost of financial exclusion. The problem of affordability is the main challenge, in short.

Another unique challenge in India is the lack of products and services which can cater to the needs which are structurally applicable to the excluded section. The banking, financial, investment, and insurance-related products are designed to keep in mind the urban and semi-urban population. Credit scores and loan history-based screening methods don't help historically, and structurally excluded people access formal financial facilities and schemes. Tailored products and services

peculiar and helpful to the financially excluded marginalized section must be designed and made available.

Another challenge is financial illiteracy. Financial illiteracy is the sum total of lack of awareness about financial schemes and wellbeing, financial education, and financial support. RBI has taken several steps to increase the financial literacy, but the effectiveness of the programs aimed at increasing financial inclusion is in doubt. RBI has also instructed all the banks (public and private) to design and implement financial literacy campaigns, which can help increase the financial literacy among the unbanked population.

FinTech in the post-pandemic era

A recent report by the International Monetary Fund (2020) sheds light on the possibilities of FinTech in improving financial inclusion in the post-COVID-19 era. The pandemic is viewed as a game-shifting event of many sectors in world history. The financial and banking sector is one such sector affected by the pandemic. One thing about this pandemic is that it accelerated the use of personal space digitally supported technology adoption among individual consumers. There are both advantages and disadvantages to financial inclusion if there is an uncontrolled migration to FinTech's post-pandemic era. The unhealthy acceleration of digital finance may be a negative challenge to financial inclusion. Uneven access to digital or technological infrastructure can negatively influence financial inclusion as the disadvantaged section can lag significantly without coping with the new world order of digital technology. Thus policymakers must keep in mind the underprivileged sections of the society before leaping into the unhealthy promotion of FinTech.

Technological advancements in the computing sector have characterized FinTech development. Compared to the 80's the processing power has significantly increased, more efficient programming facilities have been developed, and big data handling became more sophisticated and convenient. Also, technological developments like internet speed, blockchain, and AI fuelled this trend. When such computing techniques were being introduced in the initial days, it was an affair that involved heavy investment. Today, technology has been revolutionized to such an extent that a smartphone processor could handle technological needs sufficient for an individual to deal with its requirement. This technological advancement and revolution changed how banking and

finance could be run. Nowadays, banking and financial products are designed and developed in such a way that it involves some technology compulsorily. The influence of this current form of Fintech on banking and finance products is clearly visible in both developed economies and emerging economies. For example, the IMF report (2018) states that mobile money has flourished in Kenya recently. Latin America, the middle east, and Central Asia also witnessed a widespread increase in mobile-related financial products and services. Fintech also involves digital lending, which is a revolution in the lending instruments history. Digital money lenders take significantly lesser time to process loan applications as compared to traditional bankers. Thakor (2018) identifies that digital lending is characterized by more reach towards underserved sections and has a lower cost than traditional lenders.

Globally, there is a trend among big players in FinTech headquartered in developed economies like the US to expand their business in emerging economies. Big FinTech players often target niche market segments with innovative and cost-efficient products, thereby challenging the traditional banks. Vast chunks of cash available with these FinTech companies make it easy for them to capture the market with the intelligent application of technology. Customers using FinTech products and services have also reported greater consumer satisfaction which is another reason for this segment to boom. FinTech players' strategy is by starting with "payments" and venturing on to the "digital loans" segment. The Digital loans segment is already full-fledged in China, the US, and other developed economies but is rapidly expanding in the countries like India and some African countries.

The digital payments services offered by different players like Google and Paytm have fuelled financial inclusion worldwide. The main attraction of these payment applications is that the processor requirement is low; thus, low-priced phones can also be used to access these applications. Other benefits include reduced risk, convenience, and acceptability among a wide range of merchants. When a cost analysis is done, payment applications succeed as compared to traditional payment mechanisms. From a user perspective, the cost is absolutely nothing, and the technology used by these applications provides more convenience. The IMF has predicted that payment application turnovers will increase at least by 50 percent in the post-pandemic era from what is there at present. This is forecasted using anecdotal evidence gathered from the empirical

literature. Mobile payment applications have tripled during the period 2014 to 2020 in low-income countries. The lending scenario is also undergoing rapid change. The FinTech players have made advancements in technology to understand consumers' creditworthiness using advanced coding and Machine Learning. Thus there will be pre-approved credits available to consumers, and whether availing it or not will be the decision of consumers in this modern scenario.

There are various other benefits that are derived from digital financial inclusion. As mentioned above earlier, gender is a barrier to financial inclusion. This gender barrier is now being addressed by digital finance. As more women are now using mobile phones, including them in digital finance is not difficult now. The trend shows that the gender gap in financial inclusion has drastically reduced with the advent of digital finance. Thus digital finance should be seen as a revolutionizing mechanism rather than mere technological advancement.

Finally, we explore the factors that influence FinTech oriented financial inclusion. One of the critical factors that affect FinTech oriented financial inclusion is digital infrastructure development. Financial inclusion is positively associated with the digital infrastructure as measured by the internet reach and advanced mobile phone availability. Another important factor influencing the Fitech oriented financial inclusion is the efficiency of the conventional and regular banking system. If the conventional banking sector is not efficient, it can positively influence people adopting digital finance, thereby achieving financial inclusion.

The degree of banking usage also affects adopting digital finance. If more people in a country are active account users of a conventional bank, then there is a higher possibility that they may adopt digital finance too. Thus the degree of bank account usage is also an essential determinant of FinTech adoption. Another critical factor influencing digital finance or FinTech is the strength of regulations in an economy. If the economy possesses a superior governance quality, then digital financial inclusion is likely to boost that economy. Thus a robust legal framework and strong regulatory mechanisms are essential to financial inclusion by FinTech.

FinTech: can it be a solution?

World Bank group's The Global Findex Database (2017) throws light into the possibility of achieving financial inclusion through FinTech by using mobile phones as the primary medium. They build the proposition using the key statistics revelation that more than 2/3rd of the unbanked population worldwide owns a mobile phone. They also suggest a method on how to increase the number of account holders. It is by way of promoting government transfer of cash via bank accounts which comes under direct benefit transfer (DBT). Another way is to encourage the use of digital payment options for the payment of utility bills. Increased smartphone usage also opens the possibility of more digital banking opportunities, which can increase financial inclusion.

The International Monetary Fund (IMF) report on Financial Inclusion and FinTech (2020) states that Fintech has significantly increased Financial inclusion in most emerging economies. Especially in Ghana and Senegal, digital financial inclusion has been an enormous success. They also report that in countries like Zimbabwe, Nigeria, and South Africa, the entire real advancement of financial inclusion is through digital or FinTech channels. Digitalizing finance or Fintech must also be supplemented with proper and safer infrastructure and a legal environment. Covid-19 has to a more significant extent, impacted the FinTech revolution than it was before the pandemic. The speed at which people now adopt FinTech measures has increased significantly.

Conclusion

The paper has outlined what financial inclusion is and the problems and issues associated with financial exclusion. It was then followed by FinTech and unveiling its potential to boost financial inclusion. The challenges faced by a country like India and how to overcome those challenges by FinTech were explored. FinTech alone will not be sufficient for increasing financial inclusion. Fintech should be complemented by supporting infrastructure and a robust legal environment to be effective. RBI's must direct with proper regulatory policies, the commercial banks (both public and private) to increase financial inclusion with the help of FinTech. Covid-19 has created a suitable environment for increasing financial inclusion in a digitalized manner.

More attention is needed here, and the government should act immediately to achieve this golden goal towards maximum financial inclusion. At the same time, we should also manage the risks

efficiently associated with FinTech. FinTech can also negatively affect financial inclusion, especially in tough times like that of a pandemic. Widespread and uneven access to digital infrastructure can be detrimental and will start another chain of financial exclusion. This new cycle of financial exclusion will again be hitting underprivileged sections like marginal farmers, the poor, women, and other disadvantaged people. Idiosyncrasies related to machine learning and artificial intelligence coding errors can perpetuate the cycle of denying digital finance products and services to specific groups of people, leading to another form of financial exclusion.

Another challenge is to keep in mind is the procyclical behavior of Fintech players. The FinTech players can also behave in a procyclical manner which should be kept in mind. Now in this pandemic scenario, we may observe a boom, but after some time, after the end of the pandemic, we may not expect this trend to continue. It may lead to unhealthy lending practices or denial practices which will intensify the impact of slowdowns. Another risk is of the indirect nature that comes with FinTech. It is the impact on the business of traditional banks and MFI’s. People's attitude towards FinTech and lack of trust in digital finance can negatively impact financial inclusion. Problems associated with customer satisfaction, proper complaint redressal mechanisms, adherence to rules and regulations, and user protection policies adopted by FinTech players will also impact the financial inclusion through FinTech. One should keep in mind all these direct and indirect risks associated with FinTech.

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