

# **Digital Technology: A Catalyst for Financial Inclusion in Developing Countries**

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## **Abstract**

Financial inclusion, defined as access and use of formal financial services, is one of the main determinants of sustainable development as it enables the marginalized sections of the society to avail financial services like payments, borrowing, savings and insurance from formal channels. However, most of the people in developing countries use informal channels to fulfill their financial needs, which make them vulnerable to exploitation. In the recent years, digital technology and more specifically digital finance has proved a catalyst for enhancing access and use of financial services in many developing countries. However, some countries like Pakistan have not been able to capitalize this potential despite having digital access like internet connectivity and mobile phone ownership etc. This study attempts to find out the potential role of digital finance for enhancing financial inclusion in developing countries and what Pakistan can learn from their experiences to mainstream the financially excluded people.

Financial inclusion has been recognised as a priority issue for economic development. World Bank and G-20 have led an initiative for increasing financial inclusion in the developing countries, which has been supported by Malinda & Gates Foundation. Resultantly, last decade witnessed an increasing trend in the bank account ownership. The Global Findex database 2017 shows that 69 percent of adults now have an account, as against only 51% in 2011. However, nearly half of the adults still remain unbanked and most of them live in developing countries. There exists a huge gap and untapped market which the traditional banking sector is unable to fill due to higher risks associated with operational costs. However, digital technology like digital finance and mobile banking holds promising prospects for financial inclusion in future but their full potential has not been realized due to barriers which restrict use of financial services in developing countries like financial literacy, unemployment and informal economy. According to a decision tree analysis, both demand and supply size constraints restrict financial inclusion, however, the binding constraint for financial inclusion in Pakistan is informal economy which incentivizes use of cash to avoid taxes and regulation. Accordingly, the lack of demand for digital financial services does not allow full utilization of the available technology and infrastructure. A plausible solution may be increased use of digital finance for Government to People (G2P) and People to Government (P2G) payments, gender inclusion and documentation of economy to increase financial inclusion through mandatory use of formal financial services.

## **Introduction:**

Financial inclusion, in simplest terms, means access and use of financial services. It means that a person owns an account at a formal financial institution and use it for making payments, savings and borrowing. Globally, 1.7 billion adults are unbanked as they do not have an account at a financial institution and even a larger number is underbanked as they don't utilize their accounts for availing financial services. One billion unbanked adults already own a mobile phone and about half of them have internet access. Thus, there exists a huge potential and opportunity for IT companies to employ digital technology and penetrate in financial sector with better understanding of consumer behavior.

In the recent years, the digital technology has played a significant role for mainstreaming the marginalised people in financial sector. The use of mobile banking and financial technology played key role in extending access to financial services in Africa where mobile accounts have even exceeded 30%-40% of total accounts in some countries like Cote d'Ivoire, Senegal and Gabon. Since Pakistan has low financial inclusion and high presence of mobile phone & internet services in the rural areas, digital finance may be a potential way forward to address financial exclusion in Pakistan. This linkage motivates this study to analyse the impact of digital technology on financial inclusion in the developing countries and the lessons Pakistan can learn to mainstream the marginalized sections into formal financial services.

## **Statement of Problem**

The vast majority of unbanked / financially excluded adults live in developing countries. Financial exclusion complicates the inequalities faced by the marginalized and underprivileged as they have to rely on expensive and risky financial transactions from informal financial sector while transferring, saving and investing their earnings. Whereas, the formal financial institutions have their own reluctance to provide services to these segments due to higher risk and associated operational costs. Pakistan is one of seven developing countries with the highest concentration of unbanked adults. Recently, some countries of Africa have been successful to enhance their financial inclusion through use of digital technology and digital financial services. Pakistan may learn some useful lessons from these countries to utilize digital technology as a potential catalyst for financial inclusion.

## **Scope / Significance of Study**

The scope of this study is limited to analyzing the impact of digital finance for extending formal financial services to the marginalized people in the developing countries and the lessons Pakistan can learn from their experiences to enhance financial inclusion of the marginalized. This paper may help in formulating a policy to promote financial inclusion in Pakistan which is ranked among countries with

lowest access and utilization of formal financial services. Furthermore, this analysis may help to understand the role of digital financial solutions like mobile phone banking as a competitor or a facilitator for formal financial services.

### **Literature Review**

A study conducted in West African Monetary and Economic Union (WAEMU), to assess the role of digital finance on financial inclusion, suggests that mobile phone penetration and Internet usage and the joint use of both technologies played a significant role in financial inclusion in these countries<sup>3</sup>. Another study assessed the role of digital technology (ICT) in reducing poverty & inequality through financial inclusion. The findings of this study suggested that digital technology can be a potential catalyst for financial inclusion through the channel of digital finance<sup>4</sup>. Aziz and Naima (2021) developed a comprehensive framework to explain the mismatch between access and use of digital technologies for availing financial services. They concluded that digital services have made physical access to financial services easy. However, lack of financial literacy, digital connectivity and social awareness restrict their usage by the financially excluded people<sup>5</sup>. A study on accessibility of financial services through Fintech innovations identified them as game changers for financial inclusion. They also indicated that their role is widely accepted but still usage remains limited<sup>6</sup>. Digital financial inclusion is the buzzword in international development community for achieving inclusive growth through universal financial inclusion. The developing countries which lag behind in financial inclusion due to resource constraints are the real beneficiaries of the developments and innovations in the fintech sector.

### **Methodology**

In order to carry out analysis, both qualitative and quantitative data has been used from secondary sources. The quantitative data about financial inclusion has been taken from the World Bank's 2017 Global Findex database and report. The Findex database is obtained through a survey conducted in 143 countries, covering almost 150,000 persons worldwide. Furthermore, the qualitative data about experiences of other developing countries has been taken from the secondary sources like Journals, articles, magazines and websites. In person or telephonic interviews have been conducted with banking and financial sector experts to understand emerging trends about use of digital technology for extending financial services in Pakistan.

### **Organisation of Sections**

The rest of the paper is organized as follows: Section-I presents an overview of the use of digital technology for extending financial services; and how digital financial services have been utilised by some developing countries to extend outreach to the marginalised. Section-II presents an overview of the use of digital technology and

digital financial services in Pakistan and the lessons it can learn from other countries for extending financial services to the marginalized sections of society. Finally, the conclusion and recommendations will be discussed along with limitations for future course of action both for research and policy making.

### **Use of Digital Technology for Financial Inclusion in Developing Countries**

The use of digital technology in the financial sector has led to development of digital finance which is defined as financial service provided through electronic means like personal computers, mobile phones or any other digital payment systems. Digital finance offers affordable, convenient and secure financial services by increasing access and lowering costs. Financial inclusion is generally defined as the process of ensuring access to financial services like savings, borrowing, insurance and payment services to vulnerable groups at an affordable cost which enables people to plan their finances, save for future emergencies, make investment decisions and access credit for their business. Digital finance, with its potential to provide affordable and convenient financial services, has offered a window of opportunity for financial inclusion of the marginalized<sup>7</sup>.

Financial inclusion has increasingly become one of the top priorities of international development organizations. “It has been recognized as an important enabler for 8 of the 17 Sustainable Development Goals (SDGs)”<sup>8</sup>. The United Nations (UN) declared financial inclusion a priority for economic development by 2020. The World Bank and G-20 have led the initiative for increased financial inclusion in developing countries to help reduce poverty levels<sup>9</sup>. As a result of these efforts, there has been an upward trend towards financial inclusion in developing countries during this decade. The Global Findex database 2017 shows that account ownership has increased from 51 percent in 2011 to 69 percent in 2017, an eighteen percentage point difference within a short span of six years is a tremendous achievement<sup>10</sup>. However, 1.7 billion adults still do not have access to formal financial services and a vast majority of them live in the developing world. The extent of financial exclusion in some parts of the world can be visualised by the fact that half of unbanked adults are concentrated only in seven developing economies: China, India, Pakistan, Bangladesh, Indonesia, Mexico and Nigeria.

**Table 1 Distribution of Unbanked Adults in the world**

<b>S#</b>	<b>Name of country</b>	<b>Unbanked Adults (%)</b>	<b>Unbanked Adults(in millions)</b>
1	China	13	225
2	India	11	190
3	Pakistan	6	100
4	Indonesia	6	95
5	Nigeria	4	67
6	Mexico	3	50
7	Bangladesh	3	47

<b>Rest of world</b>	<b>54</b>	<b>920</b>
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Source, Global Findex database, 2017

### **Conceptual Framework: Financial Inclusion through Digital Finance**

Theoretically, how digital technology can be a catalyst for financial inclusion is based on the premises that majority of unbanked people have access to mobile phone and internet which can be used for access to financial services digitally at places where traditional financial institutions are unwilling or unable to extend services due to infrastructure requirements. Digital technology may offer access to financial services at affordable rates for the unbanked people. At the same time, it may work as an incentive for the banking sector to exploit untapped market at reduced costs while earning profits from the extended market<sup>11</sup>. Thus, it may be a potential solution for both supply side and demand side constraints on provision of financial services to the marginalised by reducing both business cost and consumer price.

According to International Telecommunication Union (ITU), 95% of the world population lives in areas which are covered by a mobile cellular signal and 63% of the world population are using internet services in 2021<sup>12</sup>. This suggests that there is huge potential to settle financial matters digitally. The potential of financial technology in developing countries is supported by several factors like young digitally savvy populations equipped with mobile devices; shortages of physical banking infrastructure; inefficient financial and capital markets; un-tapped market opportunities; and less stringent data protection policies and competition.

### **Digital Technology for Financial Inclusion in Developing Countries**

Many developing countries have implemented policies to exploit the potential of digital technology for enhancing outreach of financial services to the unbanked and financially excluded people. However, the results are mixed. Some countries succeeded to capitalize this potential while others still lag behind. The countries in Africa have been particularly successful in increasing financial inclusion through use of mobile phone banking and digital finance. The mobile accounts have even exceeded 30%-40% of total accounts in some countries like Cote d'Ivoire, Senegal and Gabon. For example, only 26.4% of adults had access to formal financial services in Kenya before introduction of MPESA in 2006 which has witnessed a tremendous increase of more than 300% within 11 years as it reached 82% in 2017 mainly due to penetration of mobile banking and its adoption by the local communities. In Tanzania, only 17.3% of adults had a bank account in 2011 which has increased to 47% in 2017. The Bank of Tanzania ascribed this rise to innovation in the financial sector and the use of mobile phones to access financial services<sup>13</sup>.

There are some success stories in South-East Asia as well. For example, Philippines

has succeeded in making 75% of payment and transfers electronically due to active efforts of the government to drive a cash-light society through the E-Peso project, 2020 and by making most Government to people (G2P) payments through digital channels. Similarly, Indonesia has succeeded to achieve 75% of its saving capacity through formal financial services mainly through mobilizing micro-savings and savings in rural areas as well as an aggressive drive to mobilize low-cost basic accounts via agent banking. Cambodia has been able to meet 70% of the credit requirements through formal financial services by evolving most-developed network of micro-finance institutions (MFIs). MFI penetration is 14.1% in Cambodia, compared to 0.8% in the wider East Asia and Pacific region<sup>14</sup>.

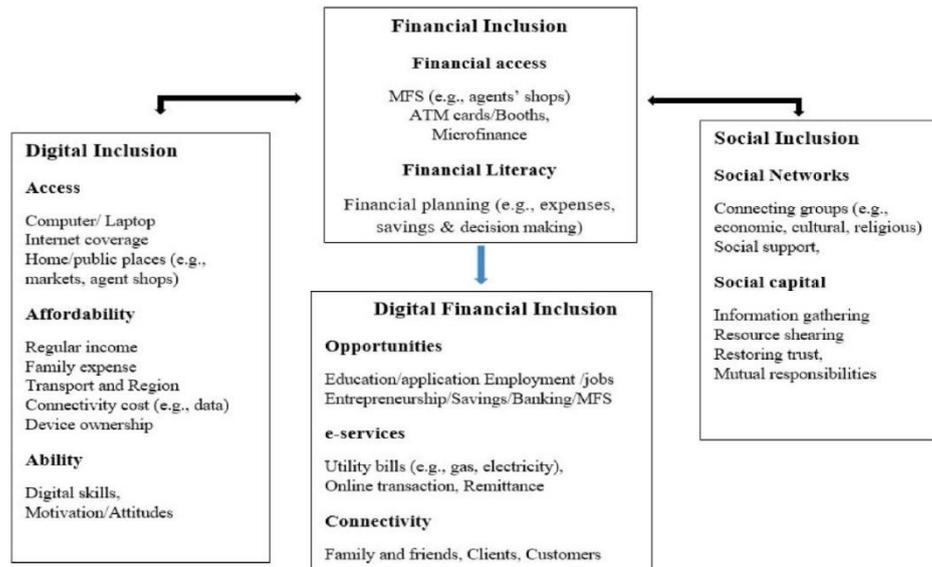
In South Asia both India and Bangladesh have used digital finance and mobile banking for expanding financial services and are considered leading success stories for financial inclusion through digital technology. India introduced 'Digital India' initiative to facilitate a transformation to a cashless economy. The demonetization process accelerated adoption of digital payment instruments through mobile banking, internet banking and other digital payment modes. It also used digital technology for bringing the poor in financial mainstream through country's flagship benefit transfer program and targeting farmers for cashless transactions.

Bangladesh witnessed a financial transformation with the launch of Mobile Financial Services (MFS) in 2011. The visible growth in MFS industry of the country enabled both banks and fintech companies to expand their services to the remote areas. No wonders, the country claimed a 50% of financially included population in 2017 out of which 17% have been included in the financial mainstream through mobile money accounts only<sup>15</sup>. Moreover, the projected worth of MFS market in Bangladesh amounts to 15 billion BDT. The country is the eighth largest recipient of remittances in the world and MFS has transformed the system of receiving remittance through digital finance. During COVID-19, the government's stimulus package was disbursed through digital financial services which resulted in opening of approximately 0.3 million new MFS accounts in April 2020 only. The government also took 'Nagad' initiative in collaboration with Bangladesh Post office to stimulate digital financial services.

### **Barriers Against Digital Financial Inclusion in Developing Countries**

There is a need to analyse the drivers and challenges of digital financial inclusion to understand why the tremendous potential of digital finance has not been capitalised by the developing countries despite providing affordable and readily accessible financial services. It implies that an exclusively supply-centric approach may not necessarily translate into financial inclusion. Rather a more comprehensive framework may explain this divergence between available digital and financial resources and their effective utilisation for financial inclusion. In this regard, a conceptual framework has been developed by Aziz & Naima which suggests that

digital financial inclusion is an intersection of digital inclusion and social inclusion. The affordability and access to digital devices coupled with digital ability enables and motivates a person to use services with help of a digital platform. Whereas, social networks provide access to the necessary information and help in overcoming hesitation and resistance to adoption of change. Therefore, digital financial inclusion requires a combination of digital device and digital skills; financial literacy and access to financial resources; and social networks to reduce the gaps between banked and unbanked people.



**Figure 1: Integrated framework of digital financial inclusion involving dynamics of digital inclusion to social inclusion<sup>17</sup>.**

The theoretical explanation has been validated by a cross-country study conducted by International Monetary Fund (IMF) to determine main drivers of digital financial inclusion in the emerging and developing countries (EMDEs), digital financial inclusion plays a significantly higher role in the countries where usage of banking services is high but access is limited due to supply side constraints. In such countries, the fintech actually fills the supply gap left by traditional financial sector. On the other hand, financial awareness and the trust of people on the financial system boost demand and use of digital financial services. The policy implications of these findings are that supply focused interventions can provide an enabling environment for use of digital finance. However, it cannot translate into financial inclusion unless there are demand inducing policies like financial literacy and cybersecurity which build their confidence on fintech services and remove their apprehensions about digital finance<sup>18</sup>.

In this study based on data from 52 EMDEs, the countries were compared on three indices namely traditional financial inclusion, digital financial inclusion and

comprehensive financial inclusion in order to analyse the impact of digital finance on financial inclusion. It was observed that traditional financial inclusion through banks remained largely unchanged while some countries experienced a decline between 2014 and 2017. On the other hand, most of the countries witnessed increase in digital financial inclusion in the same period on both dimensions of access and usage. This increase was particularly significant in countries of African region like Ghana, Senegal and Benin. Similarly, the comprehensive financial inclusion (combining both traditional and digital financial inclusion) was higher in the countries which used digital financial inclusion. An interesting comparison can be drawn between Myanmar and Senegal as both countries had same level of traditional financial inclusion but Senegal achieved higher comprehensive financial inclusion due to use of digital finance and mobile banking<sup>19</sup>.

In light of real life experiences of some developing countries like Kenya, Ghana and Bangladesh; theoretical framework linking digital financial inclusion with social networks and digital inclusion; and empirical studies which substantiate significant role of digital finance for enhancing financial inclusion, it can be inferred that digital technology has the potential to act as a catalyst for extending outreach of formal financial services through digital means like mobile banking and mobile wallets, internet and branchless banking and other innovative solutions. However, there exist both supply and demand constraints in form of digital divide, regulatory regimes, financial literacy and cybersecurity. Once these barriers are lifted through a right mix of policy and awareness, financial inclusion can play a significant role in achieving an inclusive and sustainable growth for reducing poverty and inequality as envisioned by the United Nations and other international development institutions.

### **The Use of Digital Technology for Enhancing Financial Inclusion In Pakistan**

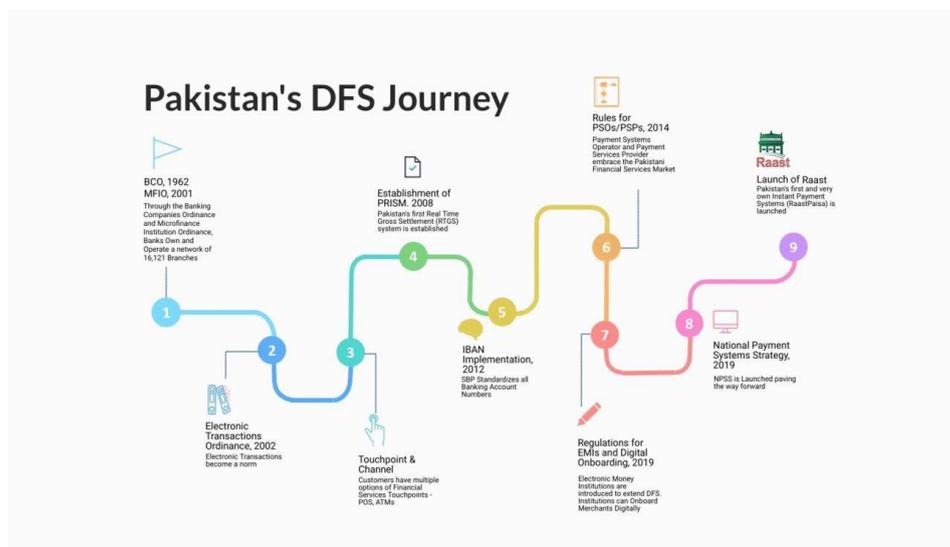
According to Global Findex 2017, Pakistan is one of the seven developing countries which house half of the world's unbanked adults who lack access to formal financial services. The account ownership in Pakistan is lowest even within South Asia. The account ownership in South Asia at 33% is dismally low when compared with 94% in high-income economies. However, a further country-wise analysis of the region shows that Pakistan is highly unbanked country with only 22% of adults own a bank account<sup>20</sup>. The neighboring countries like Sri Lanka (73 %), India (80%), Nepal (45 %), Bhutan (34%) and Bangladesh (50%) have comparatively higher rate of financial inclusion, according to Global Findex Report,2017. When making a comparison at global level, the situation becomes even more glaring as financial inclusion in Pakistan is low even compared to sub-Saharan Africa (34 %), Latin America and the Caribbean (51%) and overall developing countries o (51%). It shows that financial exclusion in Pakistan is severe and deep as it has higher proportion of financially excluded adults (78%) than the countries like India and

China which house highest number of unbanked people because of their sheer size, despite having reasonable account ownership rate.

### Pakistan’s Digital Finance Services (DFS) Journey

Like other countries, Pakistan has also taken many initiatives to increase financial inclusion through use of digital technology. In this connection, the State Bank of Pakistan implemented Financial Inclusion Programme (FIP) in partnership with DFID and launched a financial literacy program in collaboration with Asian Development Bank in 2012. Subsequently, a broader National Financial Inclusion Strategy (NFIS) was developed in 2015 which aimed to enhance formal financial access to 50 percent of the adult population by 2020. Recently, the Regulations for Electronic Money Institutions (EMIs), 2019 allowed issuance of e-money to some non-banking entities for specific purposes like online shopping etc. However, these developments have not shown any improvement in financial outreach as Pakistan’s financial inclusion level remained as low as 21 percent, as reported by Financial Inclusion Insights (FII) survey, 2020/21.

**Figure 2: Developments of Digital Finance in Pakistan**



In Pakistan, the traditional banks have allowed their customers digital access to accounts through internet banking and smartphone applications. Furthermore, the branchless banking offer mobile wallet accounts through partnership of banks and mobile network operators (MNOs). Since branchless banking requires banking license for providing financial services, two major MNOs, Telenor and Mobilink have entered into a partnership with microfinance banks. They offer Over the Counter (OTC) 22 and Mobile Wallets 23 services branded as ‘Easypaisa’ and ‘Mobicash’. Apart from this, regular commercial banks also offer branchless banking products like UBL Omni and HBL Express. The latest entrant in the market

is Electronic Money Institutions (EMIs) which are limited to offering mobile wallets for commercial transactions. Most recently, the ‘Raast project’ has been initiated as a joint venture of Karandaaz and the State Bank of Pakistan (SBP) to improve payment infrastructure. It aims to develop low cost and secure digital financial services as driving force for financial inclusion in Pakistan to facilitate people, businesses, and government entities to do transactions through digital platforms conveniently.

### Current Status of Digital Financial Services in Pakistan

According to State Bank of Pakistan (SBP), there are approximately 60 million traditional bank accounts which also includes dormant accounts. The estimates suggest that around 80% of the accounts, approximately 48 million, are active. Furthermore, there are 63 million mobile money accounts out of which only 60% are active. These numbers depict the penetration of mobile banking and digital financial services as they have been able to capture a big market within a decade. Though the value of transactions (5%) made through mobile banking is much lesser than their volume (14%) but the number of transactions indicate widespread use and their outreach to those segments which traditionally do not use formal financial services.

**Table 2: Supply side and demand side statistics regarding financial services**

S#	Supply Side Statistics		Demand Side Statistics	
			Percentage of Adult Population	A2FS (%)
1	Number of Banks and DFIs	53	A. Banked	1 6
2	Number of Branches	16,07 6	B. Other formal	7
3	ATMs	15,25 2	<b>Formally served (A+B)</b>	2 3
4	POS	47,56 7	Informally served	2 4
5	Branchless Banking Agents	437,1 82	<b>Financially served (A+B+C)</b>	4 7
6	Total No. of Accounts	57,57 1,046	Financially excluded	5 3

**Table 3 Pakistan’s readiness to adopt digital financial services in 201726**

S#	Key Indicators	Status (%)
1	Necessary ID	86
2	Mobile phone access (own/borrow)	78
3	Owens a SIM card	59
4	Ability to send and receive text messages	68
5	Financial literacy	14

6	Basic numeracy	99
7	Mobile money awareness	79

The above tables shows that 53% of adults are financially excluded as they do not use either formal or informal financial services. However, Pakistan's readiness to adopt financial services is higher on many indicators except for financial literacy but the utilization is sub-optimal. According to a survey, the top reasons for not using digital fiancé are given below.

**Table 4: Top reasons for not using mobile money**

S#	Key indicators	Status (%)
1	Prefer to use cash	37
2	Don't have enough money to make transaction	36
3	Don't need to send to money to anyone	33
4	Don't know what mobile money is used for	29
5	Don't trust mobile money	25
6	Don't have required ID and other documents	24

Pakistan, when compared with other developing countries on the availability of digital financial infrastructure and account ownership, has been observed to have lower bank account ownership than peer countries. For example, Bangladesh and Kenya have lower ATM access than Pakistan but much higher account ownership. Another comparison shows that Tanzania, Uganda and Pakistan have same levels of mobile phone subscriptions but mobile wallet registration is much lower in Pakistan. It suggests that Pakistan has digital infrastructure but the rate of adoption and availing financial services is lower due to some other constraints<sup>28</sup>.

An empirical analysis conducted to determine efficiency of financial inclusion across 137 countries suggests that Pakistan is ranked at 122/137 with a low score of 22.16 /100 on a financial inclusion efficiency performance index<sup>29</sup>. The study also determined which factors restrict efficiency and how it can be improved in each country considering its own dynamics. It suggested that financial inclusion in Pakistan is hampered by multitude of factors like shadow economy, inequality, corruption, rural population, and age dependency. In order to achieve fully efficient financial inclusion, these barriers need to be eliminated by 75-95% which is quite a gigantic task. The insights from this study are that Pakistan's problem are deep rooted which require intervention beyond demand and supply interventions.

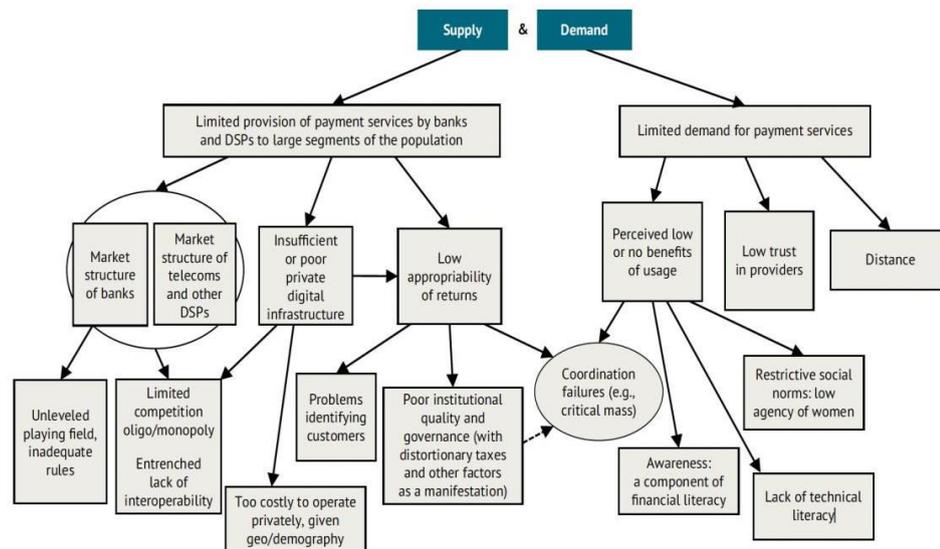
#### **Decision Tree analysis of Issues & Challenges**

Pakistan has improved its network of branchless banking and mobile money agents over the last decade. According to a decision tree analysis conducted under auspices of Centre for Global Development, Pakistan lags behind peer countries on many demand side indicators like financial & technical literacy, awareness about digital

finance and inclusion of women. However, the most binding constraint in usage of digital payment is the existence of a large undocumented and informal economy. Decision Tree analysis is based on four principles to find the most binding constraint:

- i. To compare the market and shadow prices with regional peers to see if there is a demand constraint or supply constraint.
- ii. Impact of relaxation of constraint on use of financial services to analyze whether removing the constraint would improve financial inclusion.
- iii. Evidence that consumers try to bypass the constraint to determine that there is a supply constraint as consumers want to avail service through other means.
- iv. Impact of relaxation of constraint on welfare of the consumer to see if the users of service are better off than non-users.

**Figure 3 Payments and transfers decision tree for Pakistan**



Source: Adapted from Claessens and Rojas-Suarez (2020).  
 Note: DSP = digital service provider.

A comparison of transaction fee for different categories of payments reveals that fees in Pakistan are on higher side for most of cash transfers and withdrawals which shows a supply constraint. However, the market analysis shows that competition in mobile banking is intense as evidenced by entry of new players and changing market share among companies. Furthermore, the level of interoperability among banks through 1link and mobile banking service providers at the level of mobile network, agent and platform is already there for the convenience of customers to make transaction across banks and different MNOs.

When it comes to regulatory framework, Pakistan was the first country to issue branchless banking regulations in 2008. The rules were also issued for Payment System Operators (PSOs) and Payment System Providers (PSPs) in 2014 which allowed them access to ILink and PRISM used by the banks. The Global Microscope on Financial Inclusion has described this access fair and non-discriminatory. However, issuance of e-money to non-banking institutions has been allowed only in 2019 before that even MNOs were not allowed to issue e-money which may have been a barrier for entry and operations for these companies. Pakistan's higher Initial Capital Requirements (IPR) and bank-led model of digital finance may have acted as a supply side barrier by discouraging new entrants.

Pakistan has also witnessed substantial increase in ATM availability from 2/100,000 in 2005 to 7/100,000 in 2018 and access to mobile phones from 8 subscriptions per 100 to 72 subscriptions per 100 during the same period. It has higher internet coverage and lower cost than Kenya and other peers. However, the use of digital finance is not commensurate with these developments which shows lower adoption rate and demand constraint. Similarly, 89% of financially excluded people hold a CNIC, therefore, documentation requirements of know your client (KYC) cannot be considered a significant constraint.

The major demand side constraints are perceived low benefit of usage as more than 60% of unbanked people see no benefit in registering accounts, lack of financial awareness as more than 40% people never plan their budgets as compared to only 10% such people in Africa. According to Global Gender Gap Report, Pakistan is 151/153 countries on an index of gender inclusion. There is a 18% gap in CNIC ownership and 38% gap in mobile ownership in 2020 and both are mandatory requirements for availing financial services. Furthermore, more than 50% women report dependence on male counterparts for financial decisions. All these factors combined suppress demand for financial services in Pakistan.

Pakistan is ranked 155/209 countries on government effectiveness, and 152nd on regulatory quality which shows that quality of institutions as a problem in Pakistan which affects digital financial inclusion by encourages informal economy and distortionary policies. According to a recent estimate, the size of Pakistan's informal economy is around 38% on average between 1995-2017 which employs 72% of non-agriculture workforce whose transactions remain outside of formal financial services. The informal economy also resulted in higher cash preference in Pakistan as compared to other economies of same size and also discourage use of digital financial services to evade taxes. It shows that informal economy and weak institutions are binding constraint on the financial inclusion in Pakistan<sup>30</sup>.

The results of decision tree analysis provide an insight on the issues and challenges faced by Pakistan in improving financial inclusion. There are some supply side constraints but demand side constraints prove more problematic due to existence of a large informal economy which employs a major chunk of workforce. The distortionary policies like withholding tax disincentivizes use of digital financial services which are perceived as a move to impose taxes. This analysis also supports the insights derived from comprehensive theory of financial inclusion and empirical findings of the efficiency analysis.

### **Conclusion & Recommendations**

Financial inclusion is one of the major challenges faced by developing countries which hinders the global vision of inclusive growth and development. The financially excluded people are mainly concentrated in the developing countries which lack physical infrastructure for extending outreach of financial services. Digital technology can be a way forward towards financial inclusion by reducing both costs for the service providers as well as reducing prices for the end user. However, the acceptability of digital finance as a secure medium for financial transaction and the capacity to use financial services independently without support from an agent remains a challenge due to deep rooted inequalities of education and opportunities.

Pakistan is among the countries with highest number of unbanked individuals and lower penetration of formal financial services even when compared with neighboring countries having similar socio-economic indicators. It suggests that people rely more on cash payments and informal channels for meeting their financial needs. In Pakistan, cell-phone penetration, internet usage, enabling regulations, and multiple branchless banking operators, digital payments are trending upward. However, it has not been exploited optimally due to lack of demand and low adoption of the innovative digital financial solutions. In order to enhance the usage of digital payments and create a behavioral shift towards adoption of digital financial services, there is a need of digital payments eco-system that allows people to make payments digitally from anywhere at any time. 'Raast' is a step in the right direction for creating such enabling environment.

One third of Pakistan's population lives below poverty line and their financial exclusion serves as a barrier to inclusive growth. The recent initiatives to provide income support to the women under Benazir Income Support Program through digital mode provide an opportunity to mainstream these communities in the formal financial system. India has been able to accelerate financial inclusion through G2P digital payments and engaging the rural community. They can break psychological barrier towards using digital finance as adoption of change requires a push or pull

factor to overcome the existing habits. Furthermore, the existence of informal economy and distortionary policies create advantage for cash preference and commercial transactions through informal channels to evade taxes. It hurts financial inclusion on one hand and revenue collection on other hand. Therefore, digital finance can also be away forward for a documented economy which provides more opportunities for inclusive growth.

The preceding sections highlights many constraints which hinder financial inclusion in Pakistan. In this context, the following recommendations can be helpful in achieving optimal financial inclusion in Pakistan.

- I. **Financial Literacy:** While there is a need to ensure availability of infrastructure in remote areas but lack of financial literacy and financial planning are major demand side constraints in making full use of existing infrastructure like ATMs network, internet access and mobile usage. It needs to be addressed through financial literacy workshops and media campaigns. An effort in this direction was earlier made by in collaboration with Asian Development Bank (ADB) in 2012. However, it requires a more consistent and constant effort to overcome this barrier.
- II. **G2P and P2G Payments:** There is a reluctance and hesitation among the people about use of formal channels for financial transactions, be it traditional banks or digital finance. Shifting large payment streams like G2P and P2G payments can be a push towards using these services. The steps like E-Pay Punjab and BISP cash transfers may have appositive impact on financial inclusion in future. Full automation and digitization of G2P and P2G can be a way forward to financial inclusion in Pakistan by creating a social network and support system.
- III. **Formal Economy:** The documentation of economy may disincentivize transactions through informal channels. However, it is a tremendous task given resistance by the vested interests to previous efforts in this direction. But digital solutions like Points of sale (PoS) integration and incentives for the compliance may create an enabling environment for a formal economy.
- IV. **Gender Inclusion:** Pakistan can only achieve universal financial inclusion if women have independence, incentive and social support for using financial services. BISP has already provided an impetus for gender inclusion by digitizing its financial support for women. The commercial banks and other financial institutions may provide incentives in terms of relaxation in fee on account registration and transactions by women.
- V. **Depth and usage.** Only 18% of adults use a bank account to receive wages and pay utility bills and just 27% of adults save formally and 11% borrow

formally. Most of the people rely on organized informal sector like committees, moneylenders, hawala/hundi money transfers, and so forth for these services. By enhancing the depth and usage of financial services other than payments / transfers can create an incentive for people to use formal financial services.

### **Limitations**

It is customary to highlight limitations of a study / research for guidance of the reader as well as future researcher. The main limitations faced while writing this paper were access to primary sources. The interviews conducted with some mobile banking and branchless banking officials could not provide substantial information from the perspective of financial inclusion as they remained focused on operational statistics rather than effect of their services on financial inclusion. Another limitation was availability of cross-country data. Initially, it was planned to estimate the effect of digital technology through proxies like mobile banking, internet access and branchless banking on financial inclusion across countries. But there were limitations of data as cross-country data for financial inclusion is available only for years 2011, 2014 and 2017. Such limited data would have resulted in biased estimates. Therefore, the focus remained on the secondary sources and qualitative data in this study. Any future effort may be directed towards primary sources and quantitative data to get more meaningful insights.

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