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Rethinking Digital Financial Inclusion: Evidence from Bangladesh

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Abstract

A growing body of evidence is documenting the impact of financial inclusion and digital finance on marginalised populations. However, mainstream scholarship has not focused on understanding the potential drivers and challenges of digital approaches to financial inclusion. This study aims to investigate the mismatch between assumptions implicit in the financial inclusion discourse and ideas of access and use of digital technologies and seeks to move the discourse forward through a comprehensive framework for digital financial inclusion. Our study showed that the social dynamics of financial engagement with new technologies require a move beyond a simple individualistic adopter/non-adopter binary framework and ‘supply oriented’ financial infrastructure. We conclude that although digital services have eased and bridged the gap of physical access to financial services, such services have not been utilised due to lack of basic connectivity, financial literacy and social awareness. This article theoretically contributes to digital financial services adoption literature by offering a significant critical overview and a new perspective on both digital finance and financial inclusion mechanisms.

Keywords:

Digital financial inclusion
Digital finance
Mobile financial services
Digital inequality
Social inclusion
Bangladesh

1. Introduction

Ensuring financial inclusion establishes a more inclusive society. Economic growth by digital technology draws significant attention to academic discourse in business and economic research [1-3]. In recent years, the emerging digital financial services have attracted the attention of stakeholders as a potential passage for financial inclusion, particularly digital payment technologies through digital platforms. Internet-enabled money transfer systems utilize mobile phone technology and have made financial systems more accessible. The adoption and use of digital services may affect and shape daily financial activities that potentially contribute to ensuring the economic growth of a society. In many developing countries, financial inclusion appears to be a potential transformative agent that can lead to poverty reduction and ensure a more financially inclusive society [2]. In this context, commercial banks in Bangladesh have been investing heavily in technology infrastructure in order to achieve efficient transaction flow, better access to clients, quality products and services. Although financial inclusion is often viewed as a crucial key for development, Bangladesh still lags behind in ensuring access to wider context for financial institutions. Through the Universal Financial Access framework (UFA), the World Bank Group (WBG) has identified Bangladesh as one of the 25 countries where 73% of worldwide financially excluded people live [4]. A recent study of the Financial Inclusion Insights (FII) on Bangladesh shows that 47% of the population is financially included through mobile money (17%), bank (5%) and non-bank financial institutions (23%). It also reveals less than one-third of women (32%) uses a digital payment compared to 56% of men [5].

Despite the substantial growth of the financial sector, most studies have not focused their attention on the understanding of potential drivers and challenges of digital approaches to financial inclusion. Although the idea of digital financial inclusion is explored in the existing literature, the underlying aspects of digital divide and social inclusion in access to digital finance remain largely unexplored [see 6, 7]. Additionally, previous studies have explored the impact of digital and mobile financial services Bangladesh. For example, Yesmin, Paul [7] highlight how digital financial services and m-banking (i.e., bKash) create a new business phenomenon and their strategy of market penetration in Bangladesh. Drawing on the Information and Communications Technology (ICT) policy of Bangladesh, a recent study [8] has argued that the idea of digital inclusion is explicitly missing in the government digital projects and policy strategies. It therefore remains unknown whether digital financial technologies (fintech) and digital services ensure financial inclusion in the rural context of Bangladesh. In this context, we propose a holistic framework (see figure 3) that simultaneously undergirds the contemporary debate on the digital and social inclusion in the context of financial inclusion in the increasingly digitised Bangladeshi financial landscapes.

This study aims to critically investigate the challenges in adopting emerging financial technologies and explore the way inclusion is linked to the use of digital financial services, such as mobile banking in a rural context of Bangladesh. In this process, the objectives of this study are: first, to draw insights from rural and unbanked peoples' adoption of digital financial services; second, to investigate the mismatch between assumptions implicit in the digital finance and financial inclusion discourse and provide a comprehensive framework for digital financial inclusion. The study seeks to investigate these aims and objectives under one overarching research question. *What are the barriers accessing to digital finance and how digital and social aspects of financial services contribute to digital financial inclusion in rural Bangladesh?* The study employs a qualitative approach that allows a detailed methodological process to uncover a complex phenomenon in a social context.

The findings suggest that the utilisation of digital services among people in rural area will not result in digital financial inclusion unless they have access to required access to digital devices as well as a supportive social environment (such as social networks, social support) to adopt the financial service effectively. Finally, it summarises and offers some recommendations for financial service providers and policy stakeholders and guidelines for further study in order to enhance and promote digital financial inclusion in a rural context.

2. Theoretical and contextual background

In this section, we briefly define the digital finance and financial inclusions and outline how the idea of digital financial inclusion fits into this research stream.

2.1. Digital finance

The payment systems are the most basic financial service that are known as “the connective tissue of a financial system” [9]. Emerging digital payment technologies, combined with the ubiquitous mobile phone technology, enable re-engineering of financial systems which include the use of pre-paid cards, mobile financial apps, mobile banking etc. The Consultative Group to Assist the Poor (CGAP) proposes the major components of any such digital financial services: a digital transaction, payment platform, retail agents, and the customers' use of a device, most commonly a mobile phone, to transact via digital platform [10]. Exploring how digital financial inclusion looks like, Radcliffe and Voorhies [11] demonstrate the essential infrastructure and components for the digital financial platform. They show the interlinked infrastructural components of digital financial platforms which connect different groups of people with a range of services related to daily lives, such as utilities, government and social services. Digital financial services involve several financial platforms, products, financial businesses, as well as interaction with FinTech companies and financial service providers [12].

2.2. Financial inclusion

The concept of financial inclusion has garnered much interest in recent years since the commitment to the Maya Declaration and the G-20 Financial Inclusion Plan [13]. Academics and policymakers have drawn attention to financial inclusion for many reasons. Ozili [3] proposes four prominent reasons. First, being a strategy of United Nations' (UN) sustainable development goals [14]; second, in relation to social inclusion [15]; third, in reducing poverty level [16] and finally, connection to socio-economic benefits [17]. There is, yet a proper definition for the idea of financial inclusion. Most usage of the term refers to two crucial features of financial inclusion: “access” to the financial products, and “usage” of customers to avail economic benefits. As Sarma and Pais [18] have argued that financial inclusion as a process in which access and usage of formal financial services is ensured. It suggests that every individual of society should participate in the economy and use financial services based on their needs and demand at an affordable cost [19]. Many studies define financial inclusion focusing on poverty reduction, savings and making more accessible to financial services which have been left out from the conventional financial services [16, 20].

Delivering financial services through digital platforms may contribute toward poverty reduction and financial inclusion [3, 21]. In 2016, the G20 Global Partnership for Financial Inclusion (GPFI) has proposed a new set of High-Level Principles that urge governments to promote a digital approach to financial inclusion [22]. Over the emerging significance of digital platforms, in particular, through mobile phones, Bill Gates in 2015 has proposed one of his four mega bets for the next 15 years that signifies the idea of digital financial inclusion. He claims:

digital banking will give the poor more control over their assets and help them transform their lives....by 2030, 2 billion people who don't have a bank account today will be storing money and making payment with their phones [23].

In this perspective, digital financial inclusion can be recognised as an important tool for promoting inclusive financial growth and reducing poverty. As a result, the unbanked can attain financial services and break out of the poverty cycle [24].

2.3. The practice of mobile financial services (MFS) and COVID-19 in Bangladesh

With the idea of ‘digital Bangladesh’, the government of Bangladesh (GoB) has initiated digital initiatives which include citizen connectivity, human resource development, and digitisation of government services. To expedite digital infrastructure for promoting public and financial services, a number of digital enterprises have developed in collaboration with global aid agencies (such as UNDP and USAID) under the Public-Private Partnership (PPP) framework. To ensure financial services, one

of the prominent government's initiatives is the Digital Financial Service (DFS) Lab+. DFS Lab+ is a joint initiative by Bangladesh Bank (BB), the country's central bank that has been introduced in order to develop and expand digital financial inclusion [25]. Regarding digital financial inclusion, DFS Lab+ proposes some ideas, such as initiating 'rural e-commerce' initiatives, interventions for behaviour change communication and financial literacy, and reformation of policy and regulatory framework. [25].

There are around 57 commercial banks with more than 10,000 branches across the country. However, these bank services are more useful to the people in urban areas than the rural areas as most of the banks' customers live in urban areas. To ensure the reach of the banking services to the poor in rural areas, *Mobile Financial Services (MFS)* was introduced in 2011. The Dutch-Bangla Bank (DBBL) has been the first bank to provide mobile banking facilities (such as *Rocket*) through a wide range of mobile phones. Among other popular MFS offered by commercial banks are, *bKash* (BRAC Bank), *MCash* (Islami Bank Bangladesh Limited), *MYCash* (Mercantile Bank Limited), *UCash* (United Commercial Bank Ltd.), *IFIC Mobile Banking* (IFIC Bank Ltd), *Mobile Money* (Trust Bank Ltd), *OK Banking* (ONE Bank Ltd), and *Hello* (Bank Asia Ltd). Moreover, the total MFS market of Bangladesh is being projected as of amount 15 billion BDT while *bKash* (operated by the Brac Bank) has secured 75% of the market share, followed by *Rocket* at 18% [7].

Since the launch of MFS, Bangladesh has been witnessing a revolutionary financial transformation through MFS. Bangladesh has seen a substantial growth in MFS industry which is more than 8% of the total registered mobile money accounts globally [26]. Being the eighth largest country for remittance in the world, MFS has proved and revolutionised the digital finance in Bangladesh. While all these MFS are provided by the private and commercial banks, the government takes an initiative to provide digital financial services under the name *Nagad* collaborating with Bangladesh Post office.

In a COVID-19 pandemic-stricken Bangladesh, MFS providers perform a crucial role in mitigating adverse economic impact. In April 2020, around 0.3 million new accounts were opened by MFS operators to disburse the government's stimulus package for export-oriented industries [27]. From March 20 to April 20, 2020, 163,924 users donated more than TK 50 million to different charity organisation through *bKash* [28]. The comparative data of Bangladesh Bank (BB) shows how COVID-19 pandemic severely affect MFS experiences [29]. Primarily, after the identification of first Corona infection in March 2020, continual social distancing practices and lockdown forced a shift towards the increased adoption of digital payment platforms. However, from June 2020 and onward, MFS experienced drastic downward trends as people loses their jobs and start moving home from city during COVID-19 (see Table 1).

Table 1: Mobile Financial Services (MFS) comparative summary statement of July 2020 and August 2020. Source: Bangladesh Bank [29].

Serial no.	Description	Amount in July, 2020	Amount in August, 2020	% Change (July, 2020 to August, 2020)
1	No. of Banks currently providing the Services	15.00	15.00	
2	No. of agents	1,003,005.00	1,009,430.00	0.6%
3	No. of registered clients in Lac	925.73	929.37	0.4%
4	No. of active accounts in Lac*	426.78	405.73	-4.9%
5	No. of total transaction	310,442,380.00	269,697,875.00	-13.1%
6	Total transaction in taka(in crore BDT)	62,999.42	41,403.82	-34.3%
7	No. of daily average transaction	10,014,270.00	8,699,931.00	-13.1%
8	Average daily transaction (in crore BDT)	2,032.24	1,335.61	-34.3%
9	Product wise information	Amount (in crore BDT)	Amount (in crore BDT)	
a.	Inward Remittance	169.53	104.75	-38.2%
b.	Cash In transaction	17,058.80	11,463.77	-32.8%
c.	Cash Out Transaction	19,146.25	12,968.84	-32.3%
d.	P2P transaction	17,293.43	12,464.33	-27.9%
e.	Salary Disbursement (B2P)	4,586.97	1,063.60	-76.8%
f.	Utility Bill Payment (P2B)	878.93	908.78	3.4%
g.	Merchant Payment	1,134.24	1,060.27	-6.5%
h.	Government Payment	1,076.79	14.97	-98.6%
i.	Others	1,654.46	1,354.51	-18.1%

[1 lac = 0.10 million and 1 crore = 10 million]

The COVID-19 pandemic outbreak has forced many small businesses to wind up, leading to an unprecedented disruption of small entrepreneurs from retailers and street hawkers who mostly use the MFS for their daily transactions and send money to support their family and relatives who usually leave in rural area.

The rest of the paper is organized as follows. Following the introduction and theoretical background, section 3 introduces the conceptual framework which shapes the study. Section 4 provides a methodological approach. Section 5 presents results. Section 6 discusses the empirical findings of the study and proposes the extended framework for digital financial inclusion. Finally, section 7 concludes with recommendations and limitations.

3. Conceptual framework : Understanding digital financial inclusion

The following section proposes the conceptual framework, articulating the critical link between digital inclusion and social inclusion, which has informed our research approach. We developed a conceptual framework (see Figure 1) that emerged from the idea of digital inclusion and social inclusion to understand the sociocultural and economic drivers of financial inclusion [13, 21, 30, 31]. We argue that digital financial inclusion is the intersection of financial inclusion (financial access and literacy), digital inclusion (accessibility, affordability and ability), and social inclusion (social networks and social capital). In this perspective, this study places digital financial inclusion as the core point. In relation to

this, this study applies the idea of digital inclusion and social inclusion while exploring the interrelations between digital financial services and financial inclusion.

Digital inclusion. The concept of digital inclusion initially discussed in academic literature around 2003 [32]. It was first appeared in the UK in relation to its link to social inclusion in respect of different levels of income,(dis)ability, age, race, culture, location, gender, and education [33]. Recent studies in digital divide [34-36] argue that a use gap occurs even after providing digital technologies, such as computer, electronic devices and Internet. In resources and appropriation theory, Dijk [37] argues that categorical inequalities in society result in unequal dissemination of resources while inequality of resource causes unequal access to technologies. Consequently, such unequal dissemination of resources brings unequal participation in society which reinforces categorical inequalities. For example, personal categorical inequalities (such as age and gender) and positional categorical inequalities (such as job position, level of education, and household size) are often seen as influencing factors in the digital divide research. In a similar vein, Livingstone and Helsper [38] claim that inequalities depend on a nature of use and quality access. Drawing on recent literature of digital inclusion framework [see 8, 33, 39], we address the three interrelated components of digital inclusion; (i). accessibility, (ii). affordability and (iii). digital ability/skills. The access to digital devices is determined by affordability, (such as the costs or the financial capacity to adopt or use the (financial) technologies) which links digital ability (such as skills and motivations toward ICT adoption and digital activities) [39]. For example, people who do not own or can't afford any digital device, they are less likely to feel motivated to use it, hence the gap of digital access occurs.

Figure 1: A Conceptual Framework of Digital Financial Inclusion. (Source: Authors)

Social inclusion. In relation to the use and adaptation of digital financial services, we highlight some other sociocultural factors (such as religion, location) that are often overlooked. A social network usually includes a set of social actors (such as individuals, associations), sets of bilateral and interactive ties [40]. Research agenda in social network is often associated with the discussion of social capital [41]. Social capital theories have explored the role of individuals in bridging and linking ties within own communities and beyond in order to share resources and information [42, 43]. We argue that the

lack of accessibility to information may lead to further marginalisation thus, better access to information and resources may contribute to social inclusion of lower income and excluded individuals of society [44]. In the context of social inclusion, through social capital and social networks may reinforce sharing financial information and resources with the community or same group and beyond.

Financial inclusion. The term is usually measured by the ‘usage’ and ‘access’ (such as ATMs and bank branches). Cámara and Tuesta [30] argues that financial inclusion is measured by three dimensions: usage, barriers (i.e. quality) and access. We suggest that the process of financial inclusion can be measured with two distinct interconnected factors, such as financial access and financial literacy. This study defines financial inclusion which can bring poor into the formal economy and ensure financial connectivity with a range of services, such as utility bills, fees through the sustainable provision of the affordable financial system.

Finally, we argue that both owning a digital device as well as possessing digital skills facilitates access to financial resources and financial literacy. Additionally, social inclusion through social networks and social capital may potentially influence peoples’ motivation, attitude and skills in getting access to digital financial services. When people have required digital financial accessibility and digital financial literacy while maintaining social networks and social capital, then digital financial inclusion can be ensured. In other words, digital financial inclusion can be achieved when potential gaps between unbanked and underbanked are minimised with the combination of digital financial tools (such as mobile banking) with psychological tools (such as attitudes, financial literacy).

This study will substantiate the existing research in digital finance involving financial inclusion. While there is voluminous research on ICT for economic growth and financial inclusion [3, 6, 21], the underlying factors (such as digital inequalities, social exclusion) in relation to financial inclusion and access to digital finance remain an intriguing research idea. Given this backdrop, this study aims to fill the gap in the existing literature in several ways. First, it provides a nuanced understanding of the digital financial inclusion that incorporates the digital and social aspect of financial inclusion. Second, it attempts to expose rural and marginalised communities investigating the barriers to the use and adoption of digital financial services and its relationship with financial inclusion. In this sense, the empirical evidence of our study will inform policy stakeholders and financial service providers the need for a holistic approach to develop their financial services and policies.

4. Methodology

4.1. Sample and data

The research was conducted in Moheshkhali, a regional island of Cox’s Bazar district in the division of Chittagong, Bangladesh. Moheshkhali is also known as a country’s first ‘digital island’ [45], surrounded

by the Bay of Bengal and located along the southeast part of the country. Due to its strategic location, the island has gained significant attention for agriculture, achieving tremendous growth in vegetable production, especially in betel leaf and fish farming business. Recently, multiple mega-projects (such as a coal-fired power plant, the LNG terminal) are being implemented with the support of Japan and China¹. Therefore, this rural area was selected as a preferred site for this study, considering its versatile local mobility, digitisation and emerging business hub.

Data collection was gathered from December 2018 to April 2019. A combination of purposive sampling and snowball sampling has been utilised to include diverse participants and their opinions [46]. We approached around 55 prospective respondents from whom 30 were selected based on their interest to participate in this project. Primarily, the data collection process has begun with in-depth interviews with four participants who have served as key informants [47]. Two of them were commercial bank branch managers, and others were mobile banking agents who provide the MFS to the local customers. We have discussed with them to get a detailed idea about the practices of digital services, and other related mobile banking services, such as ‘cash in’, ‘cash out’. Then, based on their background information, we recruited other 26 participants from three different² local *bazar* (markets) in Moheshkhali; Kalarmarchara(KLM), Hoanak (HNK) and Matarbari (MTB) using the snowballing technique. The snowballing technique was utilised as it makes it easy to recognise a hard-to-reach and “hidden” population [48].

This study employs a qualitative approach to understand the social, cultural and economic drivers of financial inclusion, and the opportunities and constraints for adoption and acceptance of technology in a rural context. We developed a semi-structured interview guide which focuses on themes regarding participants’ experiences [49] of access and use of digital technologies for financial services. The main objective of these interviews was to gauge underlying causes of financial exclusion and how experiences regarding financial practice had affected, following the adoption and use of digital technologies. The semi-structured interviews were supplemented with participant observation and informal conversations with MFS customers whom the first author of this article had the opportunity to interact with them in three different bazars (markets). These conversations and observations ranged from informal meetings at weekly street markets, local shops of MFS agents. All interviews were conducted in mother language, Bengali. Interviews were audio recorded with the participants’

¹ These projects were faced massive protest across the country by environmental groups and climate activists. See for details, [https://www.gem.wiki/Maheshkhali_power_station_\(KEPCO\)](https://www.gem.wiki/Maheshkhali_power_station_(KEPCO))

² See the administrative map of Moheshkhali upazila

https://www.humanitarianresponse.info/sites/www.humanitarianresponse.info/files/documents/files/170711_adminmap_maheshkhali_id024.pdf

permission and translated/transcribed directly into English while 5 participants did not permit to record them. The interviews lasted between 30 to 40 minutes.

4.2. Data analysis

The process of analysis was both deductive and inductive. The initial categories of the conceptual framework (see Figure 1) were deductively emerged from the literature. The transcripts of the interviews were thematically analysed by two cycles of coding [50, 51]. From the interview questions and field notes, we observed patterns and themes, in this way; the coding process was occurred inductively. Once all interviews were transcribed and coded accordingly, we revised the data, merged and summarised the coding from all interviews, then linked codes to the different aspects of the digital financial conceptual framework for illustrating themes and findings. During data analysis, the second author consulted with MFS users and agents via online, who are currently living in Moheshkhali, where the fieldwork was conducted. The purpose of these consultations was to explore the practices of MFS and its impact on rural people during the unprecedented COVID-19 pandemic. We intended to ensure that the iterative process was properly being conducted in accordance with the interpretation of the interviews.

4.3. Ethical considerations.

Ethical considerations were of utmost importance. Due to perceived similarities and being familiar with the research area, the first author felt comfortable among the demographic that we were researching. We had also previously known with a number of opinion leaders, community organisers in these areas that helped us to gain easy access to our study's participants. In this way, we gained and maintained the trust of respondents whom we did not previously know. We deeply focused on our language (using the same dialect of participants) while communicating to reject any supposed power hierarchies (researcher vs. participant), which can greatly affect trust. Pseudonyms were used to protect their identity. Voluntary participation and verbal informed consent from all participants by clarifying the purpose of the study were ensured. Additionally, while most of the participants were approached by conducting street outreach, all interviews were conducted either in a single room or corner of a shop based on participants' preferences to avoid any noise and interference. Each respondent was entertained with light refreshments such as tea and cold drinks in a tea stall or restaurant paying courtesy to the local culture of hospitality. It also helped us to continue in depth discussion delving into social and cultural phenomenon [52] in a rural context.

5. Results

We present our findings under three interrelated themes, which illustrate the underlying factors and exclusionary process of digital financial services in rural area. Theme 1, *digital finance and resources*, illustrates the basic connectivity and access to digital financial services, such as Internet, digital devices, mobile banking and affordability of ICTs and Internet. Theme 2, *knowledge, skill and trust*, demonstrates the financial related skills to understand the digital financial services and knowledge of e-safety or digital security to avoid the risk of fraudulent transaction and digital fraud. Theme 3, *Connectedness of digital inclusion and social inclusion* highlights the significance of digital and social aspects to ensure the benefits of financial services and resources. Overall, these three themes propose a set of interlinked aspects of digital and social inclusion that enable digital financial inclusion to occur.

The demographic characteristics of the study participants (n=30) are summarised (see Table 2). They ranged in age between 28 and 43 years and the mean age of participants was 35 years (SD =0.79). Almost all participants are from the low-income group with a household average monthly income of less than 33000 BDT (around \$350 USD) depending on the seasonal farming and agricultural environment. Most respondents come from lower socioeconomic backgrounds and hardly go outside of rural areas. 26 respondents are found unbanked, while 4 respondents have bank accounts with commercial banks located nearby.

Table 2: Summary of demographic characteristics of participants from three different locations

Bazar/locations	Number	Occupations	Education	Sex
Kalarmarchara (KLM)	12	Retailer 3 Farmer 7 Fisherman 2	Primary 5 Secondary 7	Male 10 Female 2
Hoanak (HNK)	8	Retailer 4 Farmer 2 Fisherman 2	Primary 6 Secondary 2	Male 7 Female 1
Matarbari (MTB)	6	Retailer 2 Farmer 1 Fisherman 3	Primary 4 Secondary 2	Male 4 Female 2
Key informants	4	MSF agent 2 Bank official 2	Primary 1 Bachelor 3	Male 3 Female 1
Total	30			

5.1. Digital finance and resources

Securing access to financial service is considered as an indispensable part of life. Access to finance is now broadly recognised as means to meaningful inclusive growth and poverty reduction. The findings of this study disclose that the use of digital services to avail financial opportunities are crucial part of financial inclusion. The deposit and credit services are considered basic access to financial services. In

this respect, the outreach of the financial system, such as state of retail networks, including branches, ATM booths and agents of mobile financial banking are considered. For both deposit and credit services, majority respondents (85%) experienced using MFS for their transaction.

For basic connectivity, regular Internet connectivity remains a significant barrier to financial inclusion. In access to the financial services, participants were troubled with getting access to broadband Internet due to poor connectivity in the rural areas. Only four participants have a bank account in a local bank with the online services; however, cannot avail any service due to poor connectivity. Kashem (KLM), a 34-year-old farmer respondent said:

My bank has given me online access to my accounts anywhere if I am able to use Internet, but I live in a rural area where Internet connection is very poor. When I am at home far away from my workplace, I cannot access online banking and financial services because my village has a very poor net connection. Sometimes there is no Internet at all. Although whenever I use mobile banking, I need to go to the local market.

Similarly, Sayed (HNK), 33-year-old businessman expressed his inability to use Internet while paying the utility bills:

I know many of friends who are living in the city can pay electricity bill through online, while here in my village I cannot. I need to go to the local bazar (market) to pay for my utilities.

He added:

I think now everyone has a smartphone that is almost as productive as a computer or laptop. I always look for a cost-effective Internet packages for using my online banking. However, getting high-speed Internet remains a very significant issue where I live.

In some local areas, getting unlimited access to Internet among rural villagers depends on affordability. The results indicated that most of the participants do not have regular income and earn very little to afford a smartphone that is almost a luxury to them. Although some participants are aware of how Internet can ease their life, but financial condition did not allow them getting such benefit. Rashid (MTB), a 46-year old unbanked respondent expressed:

I am the only breadwinner of my six family members. Using a smartphone is a luxury while Internet connection bills will further excrete the cost for a low-income people like me. I do not have an account in either formal bank or mobile banking.

Moreover, poor people are excluded from the formal banking services for many reasons. For instance, transaction cost, minimum balance and service fees requirements primary barrier preventing poor people from accessing to formal financial services. Abbas (KLM), a 47-year old who is a small entrepreneur commented:

I do not have any account with a commercial bank because opening an account seems to me complicated. For example, signing papers and providing a lot of document for identification.

Ahmed (MTB), a 42-year old entrepreneur who has been involved with both agriculture and fishing farm for a long time spoke on the benefits of MFS:

For my business, I need to make a financial transaction with my customers every day. I use three mobile phone numbers registered with three different mobile financial services. Having multiple MFS accounts are not easy, but it helps me to ‘cash in’ and ‘cash out’ without visiting any bank branches. Because some of my clients cannot pay instantly, they asked me to open a mobile account for the due payment.

Similarly, Khaleda (HNK), a 37-year old housewife said:

Recently, I have opened a bKash account with my phone number to receive remittance sent by my son from Saudi Arabia. I need to go to any agent for ‘cashing it out’. It is easier than opening a bank account...it is convenient, I really like it.

5.2. Knowledge, skill and trust

Most respondents do not have access to formal banking system, while only four respondents have bank accounts with the commercial banks. Some previous studies argued that financial literacy remains one of the major barriers to gain banking and financial services [53]. This study found similar results in rural area. Ahmed (KLM), a 31-year old respondent expressed his experience with opening a bank account,

When I went to a commercial bank to open an account, I was asked to lodge my application with some required documents. I did not know how to collect them and understand the application process. It was quite confusing for me.

On the other hand, Munir (KLM) a 42-year old respondent who has a bank account with a commercial bank, but has no idea how to use ATM booth expressed with a surprise:

I know there is a machine in my bazar, but I never used it. I always travel to city centre (Cox’s Bazar) where I have opened my account. Is it possible to withdraw money using the machine (he does not know about ATM card)? If I visit the bank next time, I will ask about it.

MFS offers effective and affordable financial services, which include cash-in, cash out, utility payment, remittance, salary and government allowance disbursement, withdrawal through mobile phone etc. Moreover, some respondents have experienced of losing money to scammers, who use masked SMSs

(short message service). It creates mistrust and fear among the rural people who are not aware of security issues. Ashraf (MTB), a 46-year old unbanked said:

I do not feel comfortable with the mobile banking system. It seems to me complicated and risky. I know some people in my area lost their money. If I use it, I may also be a victim of fraudsters.

Similarly, Mahbub (KLM), a 36-year-old employee of a small shop who has been using MFS for long time has expressed frustration over the MFS:

A few days ago, I received a phone call telling me that some money has been mistakenly credited to my *bKash* (MFS provider) account. It would be nice if I could return the amount. I have also received an SMS from *bKash* that says my mobile wallet was added 3000 BDT. Then, I transferred the amount to the number. As a verification, I received an SMS from *bKash* confirming that the money had been transferred and even a transaction fee was deducted from my account. Later I discovered I was simply victimised through masked SMSs.

The interviewer asked him whether you had a suspicion when you have received an SMS? He argued, “the SMS was sent from *bKash*, so why should I suspect it? How can I differentiate which one is real and which one is fake? Now I am thinking to stop using *bKash*”.

Such fraudulent financial transaction creates a great risk for small and medium entrepreneurs, especially among who are less critical about financial scam. Responding to such behaviour, key informants who are familiar with such financial transactions said that the fraudsters use registered SIM cards, and MFS accounts (like *bKash*) while using their fake names, and addresses, which is associated with the SIM dealers and *bKash* agents. A recent report by The Business Standard (TBS) and the Daily Star reveal a security force has held a leader of fraud gang who used to target MFS users and agents. The gang used to collect the mobile number of mobile banking users from agents and deceit money by knowing secret code through several tricks. Some scam syndicate members were found to collect the mobile banking accounts by bribing the agents while corrupt mobile banking agents would promptly contact the gang if any big transaction takes place [54]. They used to trick ATM card users to know their CVV (card verification value) numbers and OTP (one-time password) of mobile phones [55]. While visiting the MFS agents' shops in KLM bazar, the first author raised issue of fraudulent MFS and risks associated with it, one agent felt uncomfortable to talk about it in front of the customers, frowningly replied ‘I am busy now, see me later.’

5.3 Connectedness of digital inclusion and social inclusion

Digital inclusion often refers to a way of strengthening social cohesion, and civic participation of the socially excluded individuals within the wider community [56]. The results show that the age

differences have impacted skill in adopting financial services. The younger generation had more skills and motivation in using it than the elderly. In this study, we found that people help each other sharing their digital resource and information in relation to financial services that enhanced the accessibility of digital financial services. The younger participants found to help others who are less skilled and knowledgeable that helped in developing greater financial inclusion.

Asif (MTB), a 31-year-old respondent who has fishing business and recently opened a bank account noted:

For my business purpose, I needed to open a bank account, but I did not know how to open it. Later, one of my friends helped me to prepare and lodge my bank account application. I also often seek his help when I need to use the ATM booth and debit cards.

On the other hand, Rashad (HNK), a 28-year-old business entrepreneur reported how he helped other:

I know some people who make their business payment through MFS. They often come to me if there are any issues regarding mobile banking. Because they do not have enough financial knowledge about how it functions.

Similarly, Akbar (KLM), a 34-year-old business entrepreneur who also works as an MFS agent, reported:

I have more than one MFS accounts. I regularly receive payment from my customers through *bKash*, *Rocket* and *Mcash*. Using my smartphone and personal computer, I buy monthly high-speed Internet package to work from home. Some people of my local area come to me to pay utility bills. I made payments on their behalf.

Additionally, people living in rural areas often express religious concerns regarding conventional banking. We found that social support may help to build trust and confidence in using financial services.

Kashem (KLM), a 36-year-old retailer said:

I know many people who do not go to bank because they fear of interest (usury) based transaction which is forbidden in Islam. However, they do not have any idea of banking system. When they come to my shop, we often suggest them to open an account with an Islamic bank to save their money.

Figure 2 : 1. A way out to shopping stores, where a *bKash* advertisement is displayed; 2 & 3, a convenience and retail shop of electronic accessories which also provide MFS to the local customers at Kalamarchara (KLM) *bazar* where customers were seen to send money and cash out (using their own or agents' mobile number) and pay utilities, such as electricity bills and recharge mobile phones (clockwise from top left). The first author took pictures with the permission of shops owners and customers. Source: authors' fieldwork.

During our fieldwork, we visited *hat bazar* (weekly street market) and fish market, a setting where many people from lower socioeconomic status come to sell products. Many people were seen attached to the MFS agents' shops making their transactions. Most transactions were related to 'cash out' either using their personal or agents' phone number. We found that the MFS agent shops in local bazar had been public places provide not only mobile banking and financial services (such as utility bills), but also provide a venue or meeting hub where people from diverse backgrounds meet each other and exchange information, ideas and experiences related to financial services.

6. Discussions

In this article, we investigated the extent to which rural people in Bangladesh are financially included and explored some of the potential factors underlying the current financial inclusion. The results demonstrate that although digital services have eased and bridged the gap of physical access to financial services and have grown more rapidly, the concerns related to the digital divide and increasing social inclusion need to be considered.

In relation to social inclusion (such as social capital and social networks), Davies, Wiley-Schwartz [57] have argued that public spaces may play a critical role as a means of developing social networks and community engagement at the local level. For example, libraries, marketplaces, and local shops often

contribute to social inclusion. These public places not only provide information, but they also provide a venue or meeting hub where people can see each other and exchange their financial choices, ideas and experiences from different perspectives. In our findings, we also found that how people require support to get information and help from other to avail the financial services. In this context, GoB's digital initiative known as Union Digital Centres (UDCs) could promote social interactions, improve accessibility, and increase participants' participation in rural area. However, such community technology centres have failed to target specifically disadvantaged citizen groups, as the powerless majority of the rural poor did not have access and use of facilities [58, 59]. In addition, people contact with different social networks and depend on 'moral guidance' for gathering information and resources [60]. A recent study [61] reveals how social support and formal and informal support-seeking patterns could influence and play a significant role in the adoption and use of digital technologies. Opinion leaders in society may motivate and train them with sharing financial resources and information. Therefore, in this study, we focus on social inclusion in the financial context as it relates to digitally mediated economic, social and cultural networks [38, 62].

MFS have drawn tremendous attention of vulnerable and underprivileged masses in rural area of Bangladesh. It has revolutionised the traditional money transaction process within the local and rural context across the country. With this response, BB has allowed 16 leading banks to offer MFS across the country. Even in COVID 19 pandemic and shutdowns, MFS and mobile money have gained its momentum among rural people. The government has allocated around BDT 74,367 crore (USD 8.77 billion) for safety net programs in the current fiscal year which was planned to disburse through MFS for hassle-free transactions [63]. However, such initiative was halted due to money theft (such as opening multiple MFS fake accounts) by the ruling party's political syndicate [64]. Although there is an increased demand for MFS, the findings of this study expose that mobile banking users are at risk of losing money that creates mistrust and fear of availing digital services. People living in rural areas are often unaware of these tricks and are susceptible to be financially exploited. To make users well aware of such misconduct and fraud, financial literacy and information sharing could play a key role among rural users.

Like many other developing countries, Bangladesh continues to face structural inequalities in respect to gender, income, education and social status. Bureaucratic corruption at all levels of government remains without control, and the unbalanced power dynamics have worsened the inequalities as all potential government services are controlled by the elites who have money and political power [8, 58, 65]. Although rapid industrial growth has shifted the country's economy to readymade garments and manufacturing industry, the economy generally remains reliant on agriculture [66]. Bangladesh Bureau of Statistics (BBS) reports the majority of population (constitutes around 66.2%) still live in rural areas, [67] while access to Internet is eight times lower in rural areas than in urban areas [68]. Therefore, the

role of financial institutions and policy stakeholders is crucial for the reconfiguration of ‘supply-side’ resolutions in order to enhance financial literacy, social awareness and reduce inequalities among socially and financially vulnerable groups [69].

We also found that participants were not able to use financial services either they do not have enough money to open a bank account and maintain it, or financial service providers are not trusted by them. These findings are similar to what has been reached in the analyses undertaken by Er and Mutlu [53] and Jouti [70]. Their findings show that idea of financial exclusion is lack of access to financial services and the idea of ‘self-exclusion’. It refers to people who may have access to financial system but avoid using them because either they have a lack of trust in financial institutions or religious beliefs. The *riba* (interest/usury) based practice of conventional financial institutions are not encouraged due to the fact that giving and taking *riba* is outlawed by the *Shariah* and as such it is a great religious concern within the Muslim community [70]. A key informant has explained that many people remain unbanked because they feel it contradicts with their Muslim identity as it is affiliated with the *riba* based financial system. Therefore, the main solution to bring the self-excluded people under the formal financial system can be introducing Islamic finance and creating awareness of financial literacy based on the underlying principles of *Shariah*.

Based on the findings and conceptual framework of our study, we provide a more holistic and integrated framework of digital financial inclusion (see figure 3). This framework foregrounds the process of successful digital financial inclusion with the alignment of technological and social appropriation [71]. Primarily, the framework links the factors of digital divide (such as lack of device) and social exclusion (such as lack of trust and supports) that may affect the access and use of digital financial services and the opportunities and constraints for adoption and acceptance of technology in a rural context. One of the significances of this framework is it challenges the dominance of ‘supply oriented’ traditional financial services and draws insights from rural and unbanked peoples’ adoption of financial services. We argue that access to digital technology can lead to social and financial inclusion through the development of social support and social capital, which can boost their confidence in a range of financial services. To ensure a better access to digital financial services, social networks and supports may potentially contribute to bridge the gap digital gap and share financial information and resources among excluded members of society. Therefore, it is required to build an effective and social network, and recognise barriers such as cultural, and social-economic issues in the context of societal challenges to ensure the digital financial inclusion.

Figure 3: Integrated Framework of Digital Financial Inclusion Involving Dynamics of Digital Inclusion to Social Inclusion.

Additionally, digital financial inclusion should yield tangible outcomes and contribute to the life of rural poor and marginalised communities including farmers, daily labours and small business entrepreneurs (such as street hawkers and retailers) at several aspects of their daily life, like *connectivity* (such as family and friends), *e-services* (such as utilities, online transactions) and *opportunities* (such as job application, bank services) and so on. We argue that those who are financially excluded, like the poor, unemployed, and underprivileged sections of society, are very commonly also those who are socially excluded. Hence, social inclusion is closely connected to financial inclusion. On the other hand, digital exclusion is itself a barrier to financial inclusion. Basic connectivity is, therefore, a crucial element for tackling financial exclusion. Importantly, the idea of digital financial inclusion should enable rural people including low-income earners, women, people with a disability, the unemployed or under-employed to use financial technology to ensure social and economic well-being across society.

7. Conclusions

The core purpose of our study is to identify the barriers which inhibit the rural people towards the usage of digital financial services, hence remain financially excluded. Our results demonstrate a robust connectedness of multidimensional aspects of inclusion in relation to digital financial inclusion. Our study also exposes the mismatch between assumptions implicit in the financial inclusion discourse and ideas of access and use of digital technologies and provides a comprehensive framework for digital financial inclusion. The integrated framework aims to bring more clarity and connectedness in the concepts and multidimensional aspects of inclusion with tangible outcomes among rural and marginalised people. An approach to the financial systems should not only be largely supplying financial services, but also needs to be localised in order to converge with local contexts. Therefore, the

framework provokes to rethink about realities and underlying factors and adopt a more holistic approach to digital financial inclusion. Additionally, a recent study [8] of the first author challenges the country's ICT policy and state sponsored digital initiatives and proposes policy suggestion for digital inclusion. His study is relevant for this research stream too as it aims to integrate and empower rural and marginalised community through the financial services. With this respect, we draw some key recommendations that will be crucial in helping to ensure digital financial inclusion.

7.1. Recommendations

First, for government and policy stakeholders

1. Financial inclusion is not given enough priority within the government policy framework. The government should investigate causes responsible for financial exclusion and put into practice a financial inclusion strategy;
2. ICT Policy is largely top-down and supply-centric, therefore, citizen-centric and pro-poor financial products/services are required;
3. Governments' policies (such as ICT and telecommunication policy) need to focus on digital inclusion strategies to ensure Internet connectivity (such as cost, speed) in rural area;
4. Government should focus on a digital skill and financial literacy-based approach to ensuring digital financial inclusion.

Second, for financial institutions/MFS providers

1. To introduce one-to one MFS agent mentoring program and target the vulnerable groups to teaches them basic skills for mobile and online engagement in order to control financial fraud and associated risks issues;
2. To lower transaction costs that reduce low income people in access to financial service;
3. To reconsider banking regulations based on the rural customers. Complicated banking procedure (such as identity documents, keeping certain balance in account) often inhibit the rural customers to reach potential financial services.

7.2. Limitations

Several significant limitations open rooms for further research. The main limitation of this study is the small sample size. Thus, it may not be possible to generalise from this study either within or outside the study area. Further study can be carried out by increasing the sample size and as well as gathering data for different parts of rural area. Hence it is suggested that future researchers consider other influencing factors associated with financial technologies, such as the way the levels of education, income and gender interact in the provision of digital financial inclusion in a rural context. A mixed methods, longitudinal study could ensure greater understanding of the causal mechanisms at play in the provision of digital financial services in rural areas. Finally, the article contributes a significant critical overview

to the growing body of research on digital financial inclusion and practices. The rapid digitisation of financial services, financial institutes and the banking industry in developing countries like Bangladesh requires the adoption of a more comprehensive approach in ensuring digital financial inclusion.

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