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Abstract

This thesis aims to contribute to the growing concept of Digital Financial Inclusion by exploring the challenges that Microfinance Institutes (MFIs) experience to provide financial services to the unbanked population in Bangladesh. Though there is an emergence of digital financial services provided by the commercial banks based on the infrastructural development initiative taken by the Bangladeshi Government's 'Digital Bangladesh' agenda, only a few MFIs are investing their resources in digital innovations to strengthen their activities. Therefore, the study's main objective is to identify the barriers within the organization and among the stakeholders when MFIs want to disseminate the benefits of digital technology. The research process applies a qualitative case study method where 11 MFIs and one Research Personal have shared their observation through answering questionnaires and semi-structured interviews. Roger's Diffusion of Innovations theory is used to analyze the data derived from both primary and online-based secondary resources to understand the impact of barriers on adopting digitization. The empirical findings reveal that a lack of organizational capacity, stakeholders' challenges, and regulatory gaps are among the main barriers for the MFIs. These barriers demotivate the MFIs towards advanced digital transformation though they have a greater willingness to contribute to digital financial inclusion.

Keywords: Microfinance; Digitization; Financial Inclusion; Digital Financial Services; Bangladesh; Diffusion of innovations; Organizational capacity; Digital innovations;

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This is for you, my dear wife Reem, and our little Angelina. This is also for you, my parents and sister – my home in Bangladesh. All your constant support, encouragement, love, and prayers made me pay off all these years of struggle in Sweden against all the odds. Also, my two brothers, Jonathan Bhai and Tithi, your friendship and constant motivation helped me stay on track. I am so blessed to have you all on this journey.

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পরিশেষে, ধন্যবাদ... সাদমান।

Abbreviations & Glossary

BDT	=	Bangladeshi Taka
DFA	=	Digital Financial Application
DFS	=	Digital Financial Service
DOI	=	Diffusion of Innovation
FO	=	Field Officer
GMB	=	Grameen Bank Model
IGA	=	Income Generating Activity
MFI	=	Microfinance Institute
MFS	=	Mobile Financial Service
MRA	=	Microcredit Regulatory Authority
VO	=	Village Organization

1. Chapter 1: Introduction

In their powerless state, the poor work for the benefit of someone who controls the productive assets. Why can they not control any capital? Because they do not inherit any capital or credit, and nobody gives them access to it because they are not considered creditworthy. (Yunus, 2003, p.140)

Around the world, historically, the governments and donors' agencies tried spending heavy resources in the name of economic development, aiming to help the poor and pulling them off from poverty; many of them resulted as examples of inefficiencies, corruption, and the impact of the money they spent could be seen nowhere but in reports; poor remained poor. Such generalization may not justify the effort fairly, but it also revealed many inequalities in our world. Poor people received many aspects of knowledge, charity, development tools, jobs, but also the door to commercial and formal banking system still stays closed for them. Just as Yunus (2003) mentioned in the quote above, the reason was quite simple: the poor people do not have enough financial capital for opening a bank account or do not own enough assets to show as collateral to get the loan. Well, this is where microfinance worked as an access to receive financial services for the unbanked and marginalized community. Obviously, like other practicing tools of development, Microfinance presents exciting opportunities for economic development and ways of advancing well-being; it is also criticized for fostering the vicious cycle of poverty. Despite having many scholarly debates over the impact of microfinance, whether how much good or bad it does to the poor, a significant portion of financially marginalized people, or being *commercially unprofitable* as the traditional banks often name them, is still using microfinance loans for Income-Generating Activities (IGAs), the savings-deposits for emergency purposes, and contributing remarkably to the economic development of their countries. Once the small idea of microfinance has now become an enormous banking model for the poor people, and this phenomenon just grew *out of experiments* in the low-income countries rather than adopting the commercial banking model, and one of the birthplaces of this modern model is Bangladesh (Armendariz & Morduch, 2005).

A half-century ago, when the modern microfinance model started functioning through microfinance organizations in Bangladesh such as Grameen Bank, BRAC, ASA, etc., loans were given based on the collateral-free ground lending model, only to the poor women; thus, empowering them with some capital to start their IGAs. Today Microfinance Institutes (MFIs) have expanded their services by offering different ranges of loan, savings deposits,

microinsurance, financial safeguards, aiming to bring the more unbanked population under their radar, ensuring financial inclusiveness. Financial Inclusion, critiques often call it as a ‘re-branding of modern microfinance’, contributes to the development by bringing in new practices, ideologies, theories of changes, and most importantly, inviting the deprived to the services as, “...different people have different financial needs — all have some — and society benefits from all these needs being met, via the right products at the right prices” (Mader, 2017, p.463). On the emergence of a *fintech*¹– *microfinance partnership*, by integrating digital innovations in their services, MFIs are now upholding the flag, named Digital Financial Inclusion, and creating scopes to achieve Sustainable Development Goals (SDG) (ibid; UNSGA, 2018).

Bangladesh is known as one of the top market leaders in the microfinance sector. Having more than 760 registered MFIs (and Grameen Bank), with more than 33 million borrowers, the microfinance sector has contributed significantly to the uprising economic development of the country (CDF, 2020; Mujeri, 2020). MFIs are offering a wider range of loan products to their borrowers for initiating IGAs. They also offer various savings and microinsurance schemes and empowering, especially their women borrowers as the main service receiver of their activities (Mia et al., 2019). Concurrently, the Government’s aim towards ensuring digital connectivity by integrating all the financial and development activities through a robust Internet & Communication Technology (ICT) network country-wide known as the ‘Digital Bangladesh’ initiative, has also opened scopes for MFIs to reach and provide services to their current and potential borrowers more quickly and efficiently as well as, thus, facilitate digital inclusion (Islam & Grönlund, 2011; Chowdhury, 2020)

Acknowledging the infrastructure development due to the Digital Bangladesh initiative, commercial banks in the country have been investing heavily and developing the technology by partnering with fintech firms to achieve efficient operation, easy and secured client access, and quality services (Aziz & Naima, 2021). However, despite having many opportunities to connect the country-wide clients digitally, MFIs are still lagging in adopting the digitized way of offering their services, or digital microfinance (Mujeri, 2020). Though most of the MFIs do have some degree of internal digitized operation (computer and software-based activity), only a few large and mid-sized MFIs are on a course of experimenting the advanced digital

¹ Financial Technology or Fintech companies integrates technological tools to drive financial activities.

technology such as developing portals for the digital payment system, real-time data handling, mobile/tab-based loan origination, and collection activities, etc. (UNCDF, 2019; LightCastle, 2019). Several research articles discuss opportunities for the MFIs, globally and locally, to bring their borrowers inside digital inclusion, and suggest pathways to be transformed digitally. However, when it comes to the potential challenges that any MFI might face to spread the benefits of their digitized operation, scholarly discussions are limited.

1.1. Purpose and Research Question

Though there is a significant number of digital technology available for the financial sector in Bangladesh, very few MFIs are availing of these technologies. Therefore, the thesis aims to understand the rationale behind this phenomenon. Especially where every financial institute globally transforms itself digitally to achieve more clients by offering diversified products, almost all the MFIs in Bangladesh are still operating on their traditional system. Therefore, this study explores the potential challenges that constrain the MFIs from disseminating and connecting their clients digitally. Assuming that there are some challenges existing both within the organization and in stakeholders of MFIs that obstructs them to facilitate digital financial inclusion, the thesis aims to explore these challenges in the quest for finding the answer to the following research question:

What are the organizational barriers for Microfinance Institutions to facilitate Digital Financial Inclusion in a 'Digital Bangladesh'?

The thesis followed a qualitative case study approach where 11 MFIs participated as respondents through a cross-representative selection approach based on previous research recommendations, portfolio size (Large-Mid-Small), and geographical area of operation (National-Regional-Local). Assigned participants/departments from the responding MFIs participated and shared their professional experience and personal observation on the research topic in the context of Bangladesh. Moreover, internet-based authentic resources were used as secondary data to formulate analysis and empirical findings. The thesis aims to find the organizational barriers by exploring MFIs experience within the following scopes,

- Organization's capacity to adopt an innovation
- Challenges within the innovation platform and communication channel
- Perceived barriers from MFIs stakeholders in the microfinance context

1.2. Delimitations

It is important to note that the thesis aims to look at the organizational barriers based on the experiences and observation given by the respondent MFIs. MFIs' perception of adopting certain digital technologies and their challenges during the process of serving their client has been taken into consideration. Therefore, the thesis does not look at clients' experience directly; rather, it focuses on how the MFIs perceive their clients in the context.

Moreover, the thesis also limits itself by considering Grameen Bank as a MFI participant as according to the Grameen Bank Act, 2013,² the Government of Bangladesh is authorized and keeping ownership to take decisions and change rules for any aspects of the organization.

1.3. Thesis Outline

The thesis is grouped into six chapters, and the outline of it is as follows. In chapter 1, the purpose of the thesis, research question, and delimitations of the research is presented. Chapter 2 gives an overview of Microfinance and Digital Financial Inclusion, followed by a brief on the evaluation of microfinance in Bangladesh. Chapter 3 introduces the readers to Diffusion of Innovation (DOI) theory and how it is applied as a theoretical lens for the thesis. Chapter 4 includes all the research methodological approaches, followed by chapter 5, which contains empirical findings and discussions based on the primary and secondary data analysis and, therefore, attempts to answer the research question based on the adopted theoretical grounding. Finally, chapter 6 reflects the research question by summarizing all the findings, and the thesis ends with a concluding remark with the future scope of the study.

² Grameen Bank Act, 2013 bill was passed in the parliament in November 05,2013 to replace the Grameen Bank Ordinance,1983 (Daily Star, 2013).

2. Chapter 2: Transformation of Microfinance towards Digital Financial Inclusion in a ‘Digital Bangladesh’

2.1. Microfinance and Digital Financial Inclusion

While most of the formal financial institutes are entirely profit-driven by having both middle and upper segments of the society as their clients or beneficiaries, often it is the poorest segment of the society, most likely the majority living in developing countries who do not get proper access to these institutions due to lack of required collateral requirements (Mia et al., 2019) This segment often tends towards informal tools to meet their financial needs due to vast availability of such tools (lightly or unregulated money lending, borrowing, mortgaging) and lack of both presence and access to the formal credit market in the rural areas of these countries (Bolnick, 1992). Small credit activities, more specifically microfinance³, offer access to a wide range of financial services for them by delivering core financial services. The basic model of microfinance was initiated and developed during the period 1950-80, pioneered by ACCION International, SEWA Bank, and Grameen Bank, who provided small loans to the unbanked borrowers with minimum possible collateral (Sundarean, 2008). These marginalized borrowers, especially women, were the core target group of the initiatives interested in driving small-scale projects with the loan money and were capable of ‘chalking up excellent payment records’ (ibid, p.4). Scholars have also pointed the role of microfinance in touching two dimensions; economically, it accumulates capital through savings and credits, and borrowers can invest them for productive purposes, and socially, it enhances human capabilities to improve their quality of life (Nussbaum & Sen, 1993). MFIs have transformed from group-wise microcredit operations to individual micro-enterprises throughout the years, nurturing their clients with more comprehensive IGAs. Over the decades, the contribution of MFIs in Bangladesh has been remarkable in terms of how they have been expanding their services to the poor and low-income household; it (microfinance to the poor women) is often treated as a virtuous, efficient, and valuable tool for assisting the marginalized group, therefore, eradicating poverty from countries (Mujeri, 2020).

On the other hand, critiques point out that many MFIs are over-concentrated in the same area and now targeting both poor and non-poor clients, excluding the poorest ones (only a few

³ The studies on Microfinance sector made a distinction between *Microfinance and Microcredit*. Microfinance includes a wider range of financial services to the unbanked community by providing savings opportunity, micro-insurance services, skill based entrepreneurial trainings, advocacy, etc. besides various loan products; Microcredit only deals with regular small credits (Abed, 2000; Elahi & Rahman, 2006)

unique, specialized programs reach to the poorest such as BRAC's *Targetting the Ultra Poor* program); tending towards commercialization and setting up performance indicators on their field staff which leads to encouraging clients for bigger loans and then mistreating indebted clients in public with both psychological and physical threats; charging comparably higher rates of interest for the loan from the poor than subsidized rates of government rural credit program and similar social safety net initiatives (Hulme & Arun, 2011). Though the high interest rate for loan repayment is positively seen as a self-selection process or rationing mechanism through which only those who can earn enough to repay the loan; the real scenario gives adequate evidence and moral hazard problems because the poor can take the loan out of desperation, and thus fall into the *vicious cycle of poverty* (Banerjee & Jackson, 2017). According to Bateman (2010), when borrowers take loans to create business or IGAs and then fail, or use the loan to pull up the failing business, microfinance does not help them to recover due to its higher interest rate and shorter repayment procedure; resulting their loans making them even poorer. At the same time, one of the core purposes of microfinance is to empower the marginalized community (especially women from developing countries surrounded by different scales of social norms and power relations), various forms of domestic violence also occur due to the struggle from over-indebtedness and repayment of the loan, and often the women of the household become the victim of that (Nawaz, 2019). These critiques exist and go side by side with the positive impacts of microfinance as a tool for developing economics. However, the capacity of microfinance to reduce poverty needs to look through the lens of an economic-wide framework. Policy-makers must realize that microfinance is a rather short-term *eradicating poverty* solution as its primary target group (poor households) own either a minimal asset or nothing at all and is highly vulnerable to most socio-economic challenges.

Financial Inclusion is a concept that has become a catchphrase for economic development since the *Maya Declaration*⁴ and G-20 Financial Plan (Demirguc-Kunt & Klapper, 2012), which refers to two common phenomena: creating *access* to a range of financial products and letting the customers *use* the economic benefits (Aziz & Naima, 2021). It is a process that brings poor people into the formal economy by providing access to a range of services through an affordable financial system and empowers them with knowledge of financial literacy (Sarma & Pais, 2011; Aziz & Naima, 2021). For a developing economy, its

⁴ Maya Declaration is a global initiative taken by the member of Alliance for Financial Inclusion (AFI) at their 3rd global policy forum in Rivera Maya, Mexico on 28-30 September 2011. The main aspect of the declaration was built upon 17 commitments to create a "Global initiative for responsible and sustainable financial inclusion that aims to reduce poverty and ensure financial stability for the benefit for all." (AFI, 2021)

role as a transformative agent can potentially contribute to poverty reduction by bringing them under the umbrella of economic development (Sassi & Goaid, 2013).

In *Digital Financial Inclusion*, both services and access to financial products are delivered to the target group through digital and innovative approaches. Digital financial inclusion represents the common core of both financial, social, and digital inclusion. Digital inclusion refers to the three interrelated components as accessibility, affordability, and digital ability (digital literacy) (Helsper, 2008; Aziz & Naima, 2021). A person can only have access to a digital device when he or she has financial affordability. Thus, the person gains the skill and motivation to adopt the digital activities; the person achieves the digital ability and fits inside the digital inclusion. Social capital concerning social network theories addresses individuals' role to share resources and information, but lack of accessibility to these leads further towards marginalization (Portes, 1998; Aziz & Naima, 2021). Social capital and social network enable accessibility for the marginalized community by sharing financial information and resources, ensuring social inclusion. Connecting these three inclusions together reflects that when the marginalized people in society get nurtured with digital financial accessibility with required digital literacy (digital inclusion) by maintaining their social capital and network, the scope of digital financial inclusion thus appears (Aziz & Naima, 2021). Lack of digital ability, which is also the crucial reason for the digital divide, also exists among the organizations in the market. Some organizations have less financial capital or a lack of resources, or even both compared to competitors in the field. So, they face strong challenges or show unwillingness to join in the journey of digital financial inclusion. Adopting digital payment systems through digital platforms, using internet-based money transferring system and mobile app-based digitized transaction, and integrating operational activities through software and cloud module has strengthened the concept of digital financial inclusion by ensuring the economic development of our modern society through shaping daily financial activities (Demirguc-Kunt et al., 2018). Bill Gates remarks about the emergence of digital financial activities through the mobile phone in his annual letter from 2015, and signifies the contribution of digital financial inclusion as one of his *Four Mega Bets for 2030* and predicted that:

In the next 15 years, digital banking will give the poor more control over their assets and help them transform their lives. The key to this will be mobile phones. [...] By 2030, 2 billion people who do not have a bank account today will be storing money and making payments with their phones. And by then, mobile money providers will be

offering the full range of financial services, from interest-bearing savings accounts to credit to insurance. (Gates, 2015)

Digital technology will not be effective for increasing financial inclusion if there is a lack of physical infrastructure, appropriate and vigorous regulations-safeguard approach for both demand and supply sides (Demirguc-Kunt et al., 2018). At the same time, whether the approach is digital or traditional, all the financial services should be tailored by assessing the needs and skills of the marginalized group for inclusiveness (ibid).

Microfinance is deeply connected with the SDGs through its contribution to empowering women in the unequal and patriarchal society by providing them financial support to improve their health, make their own decision, and reduce the gender gap (Weber & Ahmad, 2014; Loewe & Rippin, 2015; Mia et al., 2019). Though the titles of SDGs do not overtly confirm the presence of financial inclusion, it becomes more evident that the details of several single targets present the significance of financial services and access to them as one of the crucial enablers to reach the goals (Ferrata, 2019). Ozlii (2020) emphasized four reasons why financial inclusion creates curiosity among scholars and policy-makers, considering it a vital strategy to achieve SDGs; it facilitates the impact of social inclusion; it can reduce poverty and deliver socio-economic benefits. According to UNSGA's compendium (2018), digital financial inclusion can significantly ensure fast growth progress to the overall Agenda 2030. A synthesis is drawn (See Annex A) on the role of digital financial inclusion in some SDGs based on different financial services provided by MFIs.

2.2. A Socio-economic Scenario of Bangladesh and 'Digital Bangladesh'

As of 2020, Bangladesh has an estimated population of 164 million with an estimated growth rate of 0.98% and 74.3 years as life expectancy (CIA, 2021). In Bangladesh, 24.3% of the total population lives under the national poverty line (\$1.90 purchasing power parity a day), and 12.9% is considered extremely poor (BBS, 2019). The national unemployment rate is 4.2%, where 49% of the population are in between the working-age group and more than 62 million people are economically active (ibid). The median age of the country's population is 27.8 years. In 2018, the national adult literacy (aged 15+) rate was 73.9%. The urban and rural literacy rates for both sexes were 81.7% and 67.3%, respectively. The female literacy rate was 79.2% in urban areas and 64.4% in rural areas (ibid).

According to the World Bank's global financial inclusion index, 50% of the total country population (aged 15+) had an account with a financial institution such as banks in 2017, and 21.2% had a mobile-money account (The World Bank, 2021b); however, it is as listed one

of the 35 countries where 73% of the global financially excluded people live. As of January 2021, Datareportal states that Bangladesh has roughly 21.35 million individual internet users (any device), covering a penetration of a total of 15% of the current population (Kemp, 2021). The country, however, crosses over the number of mobile connections of its total population; there are about 165.8 million mobile connections; though many of them have the same ownership (ibid).

Bangladesh is one of the most emerging countries in South Asia with robust economic progress, having a gradual increase in Gross Domestic Product (GDP) by 8.2% in 2018 (Aziz, 2020; ADB, 2020; BBS, 2019; CIA, 2021). Such rapid growth pushed Bangladesh to achieve the lower middle-income country status in 2015, and now it is on the course of graduation from the UN's Least Developed Country (LDC) list in 2026 (The World Bank, 2021a). Despite making significant progress on the outcomes of Human Development Indexes and fulfilled several targets of UN's Millennium Development Goals (MDG), and progressing towards achieving SDGs, the country is suffering from the severe socio-economic problem where constraints are visible in employment, income inequality, gender discrimination, corruption, and political instability, as well as being in high risk of climate-vulnerability (Aziz, 2020; Williams, 2018).

Digital Bangladesh is a part of the principle vision named 'Charter for Change' and also an electoral pledge initiated by the ruling party, Bangladesh Awami League, before the national election in 2008 to transform the socio-economic situation towards an inclusive and poverty-free society by 2021, which has eventually become a buzzword, branding, and driving manifesto of Bangladesh's socio-economic development over last decade (Aziz, 2020; Chowdhury, 2020; Islam & Grönlund, 2011). There is no clear definition of the title in the election manifesto; however, this catchy slogan was able to take the modern progressive young population's attention by framing to establish widespread access to digital information and minimize the digital divide. National ICT Policy, 2009 (NIP) is considered as the premium guideline of the Digital Bangladesh concept with ten key objectives, 56 strategic themes, and 306 action items (time-wise) which are assigned to different ministries (Islam & Grönlund, 2011). To respond the Covid-19 pandemic, the Government of Bangladesh has also utilized its digital infrastructure by providing online education to millions of students, enabling telemedicine, and distributing different types of a social safety net (cash support) to the needy people; uplifting the core of Digital Bangladesh (Chowdhury, 2020). The ICT industry in Bangladesh over the decades has achieved significant growth with the rapid expansion of e-

commerce, enabling mobile financial services for both formal and informal economic activities; however, there is a significant gap between urban and rural in terms of accessibility and affordability of facilities and services as well as there exists lack of knowledge and digital literacy (ibid).

2.3. Evaluation of Microfinance in Bangladesh

History provides evidence of microfinance as an informal money lending system that is based on trust, partnership and without any physical collateral and being modernized over the centuries (more than 200 years) of significant trial and error attempts, success, and failure stories (Hassan, 2002; Seibel, 2003). According to the Microfinance Barometer editorial, the year 2018 witnessed almost 140 million borrowers received MFIs’ services, where 80% are women, and 65% live in rural areas (Convergences, 2019). Bangladesh, often seen as the ‘heartland of microfinance’ (Hulme & Arun, 2011), has one of the mature microfinance industries in the global financial sector, which disbursed a total amount of \$1.8 billion to more than 33 million borrowers in 2018-2019 (CDF, 2020; Hulme & Arun, 2011).

The microfinance model has been transformed from its initial foundation of providing credit access to the poor (formally unbanked and socially deprived) in the last five decades. Mia et al. (2019) has adopted Life-Cycle Theory (LCT) to illustrate a map of the historical development of microfinance in Bangladesh over the last five decades on ten years basis (figure 1), and the stages are briefly discussed below:

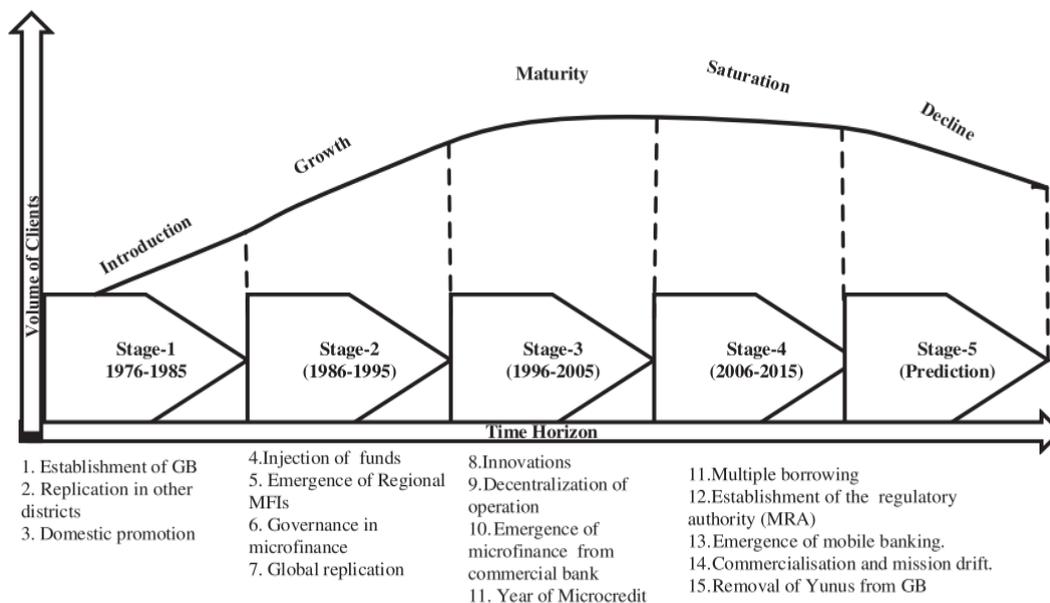


Figure 1: Evaluation of microfinance in Bangladesh based on product life cycle theory (Mia et al., 2019, p.710)

2.4.1 The arrival of Microfinance (1976-1985): With a devastated economy after the War of Liberation in 1971 and 80% of people living below the poverty line in Bangladesh, amidst the mid-'70s, the Grameen Bank Model (GBM) initiated by Muhammad Yunus which provided access to loans with reasonable terms to the villagers and lent \$27 to 42 women in 1976 (Yunus, 2003; Levin, 2012, Hossain, 2014; Mia et al., 2019). Grameen Bank was officially established in 1983 as an independent but government-legislated bank with 'Grameen Bank Ordinance-1983', with a typical branch of having seven-eight groups following the Grameen Classic System (GCS) initially (Yunus, 2003). MFIs such as BRAC, ASA, Proshika were influenced by the GCS model and started microfinance activities (Hassan, 2002). The introduction stage was only confined to group-based loans, and the savings functions were still in the development process (ibid).

2.4.2 The growth of Microfinance (1986-1995): During the mid-80s, Bangladesh witnessed the expansion of a handful of MFIs by *franchising* their new Branch Offices (BO) country-wide. Some of the MFIs redesigned their core principles and started innovating different financial services such as variation in loan products and providing financial literacy and entrepreneurship skill-trainings to their borrowers (primarily female) (Khan & Ashta, 2013; Mia et al., 2019). Microfinance during this decade started getting recognition as an effective tool to eradicate poverty by policy-makers globally, and due to lack of comprehensive and supervisory regulatory framework, MFIs in Bangladesh experienced significant growth in their portfolio (Conroy & MacGuire, 2000). Zaman (2004) pointed out factors like leadership, feasible staff incentives, and MFIs' adoption of *learning by doing* fueled this industry's rapid growth during this phase. On the other hand, social and financial challenges within the group-based lending method GB and other MFIs remove joint liability schemes in 2002 and focus more on individual lending (Hisaki, 2006; Mia et al., 2019).

2.4.3 Microfinance started exploring (1996-2005): MFIs during this decade focused on formulating strategic, capacity development, and monitoring initiatives to make the institutions more sustainable and started operating in some Asian and African countries (ibid). Significantly, the industry showed a mature transformation by adding comprehensive savings and microinsurance products, reviewed and improved loan attributes, and increasing their financial viability. It attracted some commercial banks to initiate microfinance activities; they started financing small and medium-sized enterprises on a smaller scale, especially financially sound entrepreneurs (Mia M. A., 2016). BRAC initiated the *Targeting Ultra-Poor* program in 2002 through which BRAC drove *asset transfer* initiative besides conventional loan system

with a hope to pull out the poorest of the poor and marginalized women from the extreme poverty (Mair & Marti, 2009).

2.4.4 Competition led MFIs towards saturation (2006-2015): A significant number of national and local/regional MFIs started their operations in the earlier stage of this phase; resulting in almost every village in Bangladesh came under their network (Mia et al., 2019). Such a competitive environment impacted the indicators as the new MFIs started taking the share from large MFIs total loan outstanding and clients. As a result, the MFIs started facing *multiple borrowing/cross membership*⁵ which also unleashed the harsh reality that such borrowers with multiple loans fall into the ‘debt trap’ and could no longer be able to escape from the vicious cycle of poverty (Faruqee et al., 2011; Mia et al., 2019). Also, MFIs started adopting *Commercialization*⁶ to survive in the market. To tackle such problems arising from a highly competitive but saturated market, the government established a regulatory authority, ‘Microcredit Regulatory Authority (MRA)’, which formulated a ‘Microcredit Regulatory Act 2006’ (Mia et al., 2019). From 2012 till 2015, the MFIs sector became relatively stable, considering that it reached the saturation point (ibid). Meanwhile, BRAC started exploring the mobile banking system in Bangladesh and pioneered *bKash*⁷ in 2011 and gave an initial local presence of bKash’s by offering its service to BRAC beneficiaries (BRAC, 2011).

2.4.5 ‘Traditional to Digital’ Microfinance (2016- present): Several state development policies, fund crises, and commercial and state banks’ access to poor’s financial activities through agent banking are the main reasons behind MFIs slowdown in growth in this phase (Mia et al., 2019). To sustain this situation, MFIs are now exploring innovative ways of increasing operational efficiencies and providing a better service to their clients by widening the radius of financial inclusion digitally or adopting Digital Microfinance (LightCastle, 2019).

Digital Microfinance or digitizing microfinance operational activities is relatively a new concept for MFIs in Bangladesh. Reasons such as the absence and higher cost of digital infrastructure and low consumer adaptation kept them performing in their conventional method until the earlier years of the last decade. They have the significance of adopting digital technology in their operation to provide the need for both supply and demand-side with the

⁵ Multiple borrowing/cross membership is when one or more members from the same household could take loans from one or more MFIs simultaneously due to both smooth loan process and lack of checking credibility (Faruqee et al., 2011).

⁶MFIs tend towards larger loans with fewer risks, increasing interest rates, exploring different operational options with less cost (Mia et.al, 2019)

⁷ *bKash* is as a Digital Financial Service (DFS) to provide essential financial services via mobile phones such as Cash In, Cash Out, and Send Money (BRAC, 2011).

emergence of technological innovation (Mujeri, 2020). BRAC started initially to test digitized transactions by collecting the savings deposit through MFS providers (using mobile money transfer system⁸) (LightCastle, 2019). Then few large MFIs started investing their resources to build an infrastructure mainly in two of their primary operations: loan disbursement and loan repayment, and piloted them in some selective branches, mainly depending on project funds. Presently, 16 Mobile Financial Service (MFS) providers are operating, and in 2020, there were more than 92 million registered MFS users where almost 43 million accounts were active (ibid; Biswas, 2021). This MFS sector is heavily dominated by *bKash* (a BRAC bank DFS initiative), owning almost two-third of the market share, followed by *Rocket*, *MyCash*, *Ucash*, *SureCash*, and the rest; however, *Nagad* (DFS service of Bangladesh Post Office, started in 2018) has recently gained much popularity due to its variation in the services offered and becomes a solid competent of *bKash* (ibid). The role of these MFS showed a remarkable potential during the Covid-19 pandemic when both government and non-government authorities provided emergency financial relief through them. Besides exploring the digitized transaction system through DFS, MFIs are also digitizing⁹ their internal operation to bring more efficiency in time management, branches' operational cost, document processing, monitoring and controlling malpractices, and most certainly, to ensure a better client service (LightCastle, 2019; UNCDF, 2019).

⁸ Mobile money is a technology which allows its users to receive, save and spend money, in other words, to perform pay-as-you-go digitized transactions at low cost, fast and convenient by creating a secure electronic fund registered with users verified mobile number. Often the Digital Financial Service (DFS) providers give their clients opportunities via their Mobile Financial Service (MFS) to perform in-store purchases, bill payments, peer-to-peer transfer etc. (IMF, 2019)

⁹ Some of the notable digitized initiatives are Branch Automation, Installation and Development of a central Enterprise Resource Planning (ERP) System, Providing smartphones and laptops with an internet connection to the Branches, Geo-tracking of field staff and branches for immediate crisis response with register management, mobile-based Financial Advisory Services (FAS) for clients, Digital Passbook, Digital claim process Cash-back facilities as a customer loyalty program, assisting clients in opening Mobile Wallet, Client Interaction Points (CIP) in commercial areas for quicker transaction services through MFS, Partnership with commercial banks to conduct Agent Banking, etc. They are also providing skill-based training to their field staff on these initiatives (Sources:information collected from interviews).

3. Chapter 3: Theoretical Grounding

Many MFIs have adopted a fully integrated digital transformation in the developing world by following successful navigation to complete the required organizational approach (Mujeri, 2020). Though the emerging digital transformation of the financial sector in Bangladesh has provided MFIs scopes to deliver a comprehensive range of services, only a few MFIs avail these scopes (ibid). The thesis explores the factors involved in digital transformation to understand the potential challenges that work as barriers for MFIs to adopt any current and advanced technology (or even starting). Therefore, this thesis articulates the main components of Roger's Diffusion of Innovation (DOI) theory to understand how these factors interconnect to each other.

3.1. Roger's Diffusion of Innovation

Diffusion of Innovation, or DOI, is known as one of the most popular sociology theories developed by Everett M. Rogers. Scholars have used this theory for more than fifty years to explore different ways of disseminating diverse innovation in agriculture, public health promotion, education curriculum development, policy innovation, and political reforms (Rogers, 2003; Oldenburg & Glanz, 2008; Sampaio et al., 2012). The theory looks upon how different IT or digital innovations migrate from the origin to the clients when organizations want to adopt them (Zhang et al., 2015). Roger's DOI theory talks about various patterns existing across cultures, innovations, and the target groups. The theory explains how it impacts social changes, which is a significant basis of human processes. Organizations can use this theory to address challenges, and it is a useful framework for spreading their strategic decisions due to its ability to justify innovations and set pathways to transmitting them through cultures or their potential target group. It studies various characteristics of innovations such as relative advantage, compatibility, complexity, trialability, and observability, making the theory a handy tool to facilitate decision-making for both the innovation and its diffusion within the environment. (Rogers, 2003; Makovhololo et al., 2017).

Diffusion can be defined as a particular type of communication (where the messages are about new ideas) done through specific channels where innovation(s) is disseminated to the members of a social system over time (Rogers, 2003). It is also the direct or indirect outcome of disseminating the innovations, making them more widely available through a planned and systematic design. It initiates changes in society by altering the system's components (structure, function); it can occur in both planned and spontaneous ways. Thus, four main

components can be derived from the given definition: *Innovation, Time, Communication Channels, and Social System*. This thesis implies these four components on the MFIs to understand how factors such as internally, organizations' capacity, funding, workforce; and externally, service platforms, regulatory body, government, etc. are connected with them, and any inefficiency within these factors weakens the components and thus create barriers to the digitalization of MFIs (Rogers, 2003).

Rogers (2003) also pointed out some significant criticisms in the diffusion research, such as bias towards pro-innovation and blaming individuals, recalling adoption time, and the inequality surrounded while diffusing the innovation. He referred to pro-innovation bias as the situation when it is considered that "an innovation should be diffused to and adopted by all members of a social system, that it should be diffused rapidly, and that the innovation should be neither re-invented nor rejected" (p. 133). Similarly, blaming individuals for their problems rather than blaming society opens some grey areas for diffusion research. Moreover, there is a probability where respondents may provide inaccurate answers on their adoption time. A wide socio-economic gap may also create among the members of society as not everyone can be included under the umbrella of digital inclusion of technological innovation (ibid).

The following sub-sections will briefly discuss the attributes of the major components in the diffusion process.

3.1.1 Innovation: An innovation is considered a new idea, practice, or object by individuals' perception or adoption of knowledge, sentiment, or decision (Rogers, 2003; Zhang et al., 2015). Innovations are also part of an organization's business strategy, which transforms ideas of improving goods, services, or processes into values, stimulates the improvement process, brings efficiency in internal processes, and remains competitive. (Rogers, 2003; Miranda et al., 2016). Technological innovation creates an influence on the social process, which minimizes the uncertainty in the cause-effect relationships inside the consequences; however, usually, the benefits from such innovation are generally not apparent to its intended potential target group (Rogers, 2003). Rogers (2003) argues that the individuals' experience in the existing technology influences others to adopt it, and diffusing the technology in a social system is interdependent. Moreover, both individuals and their social systems' characteristics determine the innovativeness or nature of their adoption.

3.1.2 Time: The inclusion of time is considered one of the most substantial factors in diffusion research as Rogers sees the involvement of this dimension into three stages and

involved in all other components (ibid). Firstly, how much time may require an organization or a client to pass through the innovation-decision process. An organizational innovation-decision-making process is complex because of several individuals' involvement; thus, it can be taking a longer time (ibid). Secondly, the diffusion process looks upon individuals' *innovativeness*, which shows how earlier they adopt the innovation compare with the other participants. Finally, the diffusion process looks at the rate of adoption in the system, measured by the amount of time required for a particular portion of a society's members to adopt the innovation. Besides, an innovation may have different adoption rates in different social systems as societies influence the diffusion process through individual behavior and social norms or similar qualities (ibid).

3.1.3 Communication Channel: Diffusing any innovation needs a medium through which information of a new idea is shared to build a mutual understanding. Looking at the alternatives of different communication channels, Rogers (2003) classified them into mainly two – Mass Media and Interpersonal. While mass media are often considered the quickest and effective way to inform the target group about innovation, interpersonal channels work efficiently to spread the message through a face-to-face approach between two or more individuals from similar socio-economic environments having similarities in education (ibid). Diffusion requires the involvement of interpersonal communication relationships, especially if it takes place in a social system. Besides those two, today's world observes a new interactive digital communication method (Mobile services, Digital platforms, Artificial Intelligence (AI), Social media, Augmented Reality). The spread of new ideas significantly impacts knowledge gain, attitude reforming, and behavioral changes (ibid). Interactive communication allows the participants to be independent and, therefore, have control over their mutual discourses such as timing, content, sequences of a required task among choices (William et al., 1988)

3.1.4 Social System: The diffusion process's final component is a social system where a group of interrelated actors are binding the system together (they can be individuals, groups, organizations, government agencies, etc.) to cooperate to solve some common problems (Rogers, 2003). Every social system is limited within certain boundaries, and they influence the fate of the diffusion. Such boundaries can be known as the influence of social structures and norms, attitudes of opinion leaders and change agents towards the innovation, variations in decision-making, and consequences of the innovation (ibid). These boundaries define the relationships of the social system and diffusion. The social structure represents a social relationship pattern within a society where the formal structure consists of hierarchical

positions among individuals, and informal structure is based upon interpersonal communication; altogether, social structure is a type of information. Social structure is one of the critical role players in diffusion study. Without some contextual knowledge of a society, any diffusion will not function and fail to fulfill the purpose (Katz, 1962). Similarly, norms within a social system significantly impact the adoption rate as they represent society's behavioral pattern, often as a set of behavior that should perform in that society (Rogers & Kincaid, 1981).

Organizations are one of the incubators of diffusing innovations. Once the organizations are ready to deliver their innovations to their clients, the *innovation-decision*¹⁰ process takes place (Figure 2 illustrates the Five Stages of the process). During the process, organizations go through *Authority Innovation - Decision* phase where few individuals (in this case, the organization's top management, technical experts) have the authority to adopt or reject an innovation (Rogers, 2003).

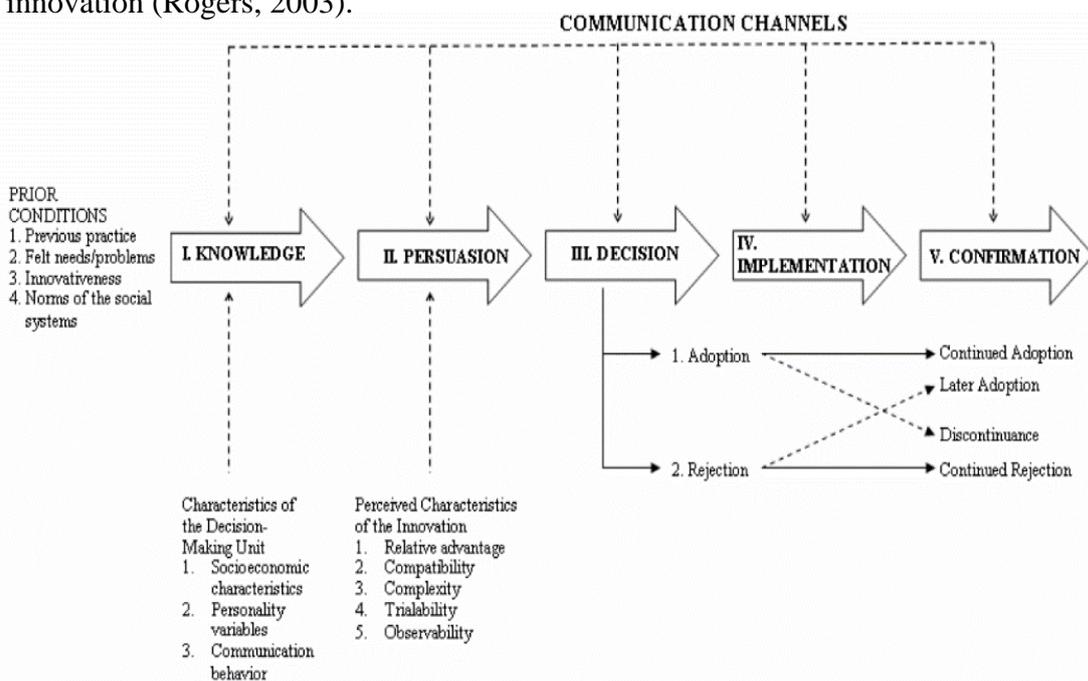


Figure 2: A Model of Five Stages in the Innovation-Decision Process (Rogers, 2003, p.165)

Individuals within the organization may show resistance to changes, but innovation is still a fundamental process in every organization for sustainability. Besides, centralization influences an organization to implement the innovations once the decision is made. In most

¹⁰ During the innovation-decision process, any individuals, or organizations (decision making unit) start by having knowledge of an innovation. Eventually they form their attitude towards it and decide whether to adopt or reject it followed by implementing the new idea into use, and finally confirm their decision after passing through reinforcements to make the final call (Rogers, 2003). This model is known Five Stages model of Innovations-Decision Process.

cases, the organization's operational staff have less or no power over the choice as they are organizationally bound to implement the decision; however, organizations also tend to provide skill-based training to the implementing workforce (ibid).

Rogers(2003) emphasizes that the adoption rate of an innovation is heavily interconnected with the values, beliefs, and past experiences of everyone living in a social system, depending on interpersonal networks that put more weight on the diffusion of innovation as a social process than a technical one. It is necessary to understand how the perception of such innovations defines the rate of adoption in a social system. Firstly, relative advantage establishes the perception level by looking at factors such as economic, social prestige, convenience, satisfaction; to summarize, how good the innovation is for the individual. Secondly, a compatible innovation defines to what extent the innovation is consistent with the present values, experience, and answers to its target group and how easily the innovation can be presented to them to understand and use it. Rogers also emphasizes trialability, where he says that the new ideas, when tested on a pilot or limited basis, have quicker adaptation and less uncertainty to its potential group. Finally, an innovation's results should also have easier observability as the users can make decisions based on what they can see from the innovation (ibid). Rogers also considers economic motivation as one of the main thrusts for an organization's adoption of an innovation. An organization can only afford a certain degree of advanced innovation if the organization's context, such as resource size, profit generation, nature of the activity, etc. motivates the decision-makers to adopt and sustain the innovation (ibid). For a long time in diffusion research, researchers thought that the innovation was changeless as it spread. During the 1970s, diffusion researchers introduced the re-invention or a level to which users change or modify an innovation to adopt and implement in their system. A re-invented innovation often achieves quicker diffusion and therefore gets rapid and sustained adoption (ibid). Simultaneously, each innovation comes up with any type of desired and undesired, direct and indirect, anticipated and unanticipated consequences to any individuals (ibid).

Rogers (2003) considers change agents (organization's human resource) as professionals with academic qualifications and a high level of expertise on innovation and works to facilitate the flow of innovation and influence his or her clients' decisions in a direction desired by the change agency (organization). When change agents approach the clients with the innovation, they appear to be more technically sound than their clients. It can be seen as a vital means of diffusion because when individuals have similar technical attributes,

there is nothing new to exchange; in other words, diffusion becomes very weak. In the diffusion process, the change agent intends to secure the adoption, but he or she may slow the process if there is a lack of willingness or required tailoring (ibid). Therefore, it is essential to have such change agents who have the capacity to transmit the information of innovation by understanding the needs of the clients.

In the DOI theory, Rogers describes the factors that can affect the diffusion process, and he categorizes them into three broad sets of variables. During the diffusion phase, organizations look at each innovation's set of pros and cons, specific attributes of their clients, and finally, the impact of the social and political context within their service area (Rogers, 2003; Dearing & Cox, 2018). Usually, the potential adopters naturally assess some specific attributes of innovation if they think the innovation has essential significance for them or those they serve. Monetary, time, or other resource expenses to adopt and apply the innovation; how much efficient the innovation is than its ancestor; simplicity and compatibility of the innovation; or even to what extent the adoption decision can be reversible – such characteristics forms the set of pros and cons (ibid). Besides cost-benefit assessment, individuals also observe how others perceive and seek advice from them or early adopters if any innovation appears promising and consequential. The social authority creates regulated pathways for the organizations to control other stakeholders' influence on the innovation. Together, innovation's attributes and social influence can act as psychological and sociological barriers for the individuals, which demonstrates as no or very slow diffusion (ibid).

This study develops and utilizes the illustration in figure 3, which shows how some aspects of different digital initiatives of MFIs are interconnected with the major components of the DOI theory. Narratives from responding MFIs and secondary data sources have been used in this study to understand the challenges lying within these aspects, which might potentially affect or disrupt the previous or ongoing innovation diffusion process. Some of the aspects also fall under two different components; for example, DFS providers are considered both an element of communication channel and social system as they are the essential platform for digitized transactions. Similarly, FO's role in the diffusion process has been seen through innovation's implementation strategy, delivering the innovation to the clients through proper communication, and their capability of roleplaying as change agents. Therefore, to address the organizational barriers, emphasis has been given to explore the challenges of the elements within these DOI components to understand how Rogers underlines those challenges as barriers for diffusion.

Innovation

- Internal Digitalization & Sustainability (Central and Branch Automation, Loan Management Software, Management Information System)
- Digitized Transaction (Disbursement, Installment & Saving collection, Savings return through mobile money)
- Digital communication (Collection through tab, SMS based information, Digital Passbook)

Time

- Time to make the decision
- MFIs Adopting new or advanced level of previous innovation

Communication Channels

- Interpersonal relationship among change agents (Field Staff) , opinion leaders & clients through VO
- Interactive communication between change agency (MFIs) & clients through DFS and SMS.
- Trustworthiness (MFS agents and Clients) among each other

Social System

- Regulatory Body & Government
- DFS Providers
- Local Infrastructure
- Digital ability (for both Field Staff & Clients)
- Social structure & Norms (Gender & Empowerment)

Figure 3: Connection of MFIs' digital initiatives (see footnote 9) to main components of DOI theory (Source: Author's interpretation based on Rogers, 2003)

4. Chapter 4: Research Methodology

4.1. Research Philosophy

The core aim of this study is to understand the challenges that MFIs face while facilitating their digitized transformations towards digital financial inclusion. Therefore, a significant part of the research is to explore the local field by looking into different activities or innovations that MFIs have taken or are intending to apply shortly and how their respective workforce is observing and facing the challenges from an organizational point of view. Philosophically this study is derived from the observations from both in-depth interviews and secondary data sources, in other words, the knowledge already there in the field. Process-wise, this philosophical approach is a component of epistemology which is "... concerned with providing a philosophical grounding for deciding what kinds of knowledge are possible and how we can ensure that they are both adequate and legitimate" (Crotty, 1998, p.8). According to Saunders et al. (2016), the study falls into *Constructionism* as here the reality (innovation/inclusion) is constructed where the engagement of social actors (change agents and clients) exists, and they generate partial meaning and reality together. Theoretical perspective wise, the inductive study is based on *Interpretivism*. Here the case is unique, focusing on narratives, perceptions, and interpretations from the social actors to explore the phenomenon (Saunders et al.,2016).

4.2. Research Type

Using digitized innovation is one of the main components of facilitating digital financial inclusion for MFIs – this phenomenon can be defined as a case for development. Cases like these often deal with multi-dimensional boundaries imposed by several actors as together they create challenges, and it is also essential to analyze the experience of them to create a strong base for the study to achieve a naturalistic perception of the theme (Gomm et al., 2000; Rohlfsing,2012). Mesec & Lamovec (1998, p. 383) defined a case study as a "description and analysis of an individual matter or case [...] with the purpose to identify variables, structures, forms and orders of interaction between the participants in the situation (theoretical purpose)". Based on a critical review of various scholastic definitions, a case study can be defined as an in-depth exploration to identify various complexity and uniqueness of cases such as projects, initiatives, policies, organizations, programs, or systems in real life (Simons, 2009). Therefore, Flyvbjerg (2006) argues that the case study is instead a selection of explored attributes than a specific method. The individual cases can be explored through

quantitative, qualitative, or both perspectives. Though scholars have different arguments on whether a case study is a qualitative research type or a qualitative research method, Starman (2013) frames case study as “more than just a type of” qualitative research as it allows researchers to explore “unknown within well-known borders” (p.31). Individuals’ interpretation of how they construct their reality in an *Ideographic* approach connects qualitative research more naturally to the definition and characteristic of the case study (ibid). Therefore, the use of the case study helps a researcher develop different views of reality based on interpreting samples’ experience and context-dependent experience. Furthermore, as the thesis adopts DOI theory to understand how these individual characteristics and experiences are connected with the challenges, using analytic induction will make this study a *Disciplined Configurative* case study based on the theory formation (George & Bennett, 2005).

4.3. Research Process

4.3.1. The Rationale behind Selecting Organizations as Respondents

The sample (organizations) is selected for this study based on their degree of involvement in this context. Each sample may have the same experience or slightly different but still within the same phenomenon (Mesec & Lamovec, 1998). The organizations that have participated in this qualitative study are chosen based on internet-mediated based research, mainly looking for the different digitized initiatives which they have taken towards financial inclusion. According to the research report jointly conducted by MicroSave Consulting and UNCDF’s SHIFT¹¹ program, among the 746 licensed MFIs, only a few MFIs (Large: BRAC, ASA, Shakti Foundation, BURO Bangladesh; Medium: SAJIDA Foundation, Rural Reconstruction Foundation)¹² have digitized their transaction or piloting some innovations presently (UNCDF,2019). Another report conducted by LightCastle (2019) on the digital state of Bangladesh shows that BRAC, SAJIDA, and BURO are the pioneers in the sector for digitizing microfinance. Including them, I communicated a total number of 22 MFIs through email, LinkedIn, and contact information provided by the gatekeepers based on a cross-representative selection approach (considering both large-medium-other and national-regional-local level) to be respondents and share their experience on the context of the study. Only 11 of them confirmed to be participants, and therefore, the study includes only those MFIs as

¹¹ The Shaping Inclusive Finance Transformations (SHIFT) program is a regional market - facilitation initiative by of United Nations Capital Development Fund (UNCDF) to provide a framework to improve livelihoods and eradicate poverty in South Asian Association for Regional Cooperation (SAARC) countries by 2021 which aims to stimulate business investment, innovation, regulatory reform and encourage women to be active agents in formal economy (UNCDF, 2019)

¹² Credit Development Forum ranks MFIs by large-medium-small/other size based on their total outstanding, number of loan and borrowers, total disbursed amount, total savings amounts, etc (CDF, 2020)

respondents. The table below provides the list of MFIs confirmed during the study period, and annex B provides their latest basic information.

No	Name of the Organization ¹³	Responding Authority/ Dept.	Respondent (Key-informant) ID
1.	ASPADA	Director – Microfinance	K.I - 1
2.	ASROY	CEO – Microfinance	K.I - 2
3.	BASA Foundation	Principle Manager-Software	K.I - 3
4.	BASTOB	Loan Coordinator	K.I - 4
5.	BRAC	Digital Cluster- Microfinance	K.I - 5
6.	BURO Bangladesh	Digital Financial Services	K.I - 6
7.	GRAMMAUS	Executive Director’s Office	K.I - 7
8.	RDS	Finance Director	K.I - 8
9.	SAJIDA Foundation	Business Analyst & Operations	K.I - 9
10	SANGRAM	Dep. Ex. Director – Microfinance	K.I - 10
11	YPSA	Chief Executive	K.I - 11
12.	InM	Research Fellow	K.I - 12

Table 1: List of respondents

Besides the MFIs, I also sought the expert opinion of a research fellow from the Institute for Inclusive Finance and Development (InM) to understand the challenges from an academic perspective. InM is a non-profit organization established as an initiative of one of the government’s apex development bodies, Palli Karma-Sahayak Foundation (PKSF). In this study, comprehensive insights on the digitization of the microfinance sector from InM’s perspective are also considered an expert opinion.

4.3.2. Data Collection

I collected data for this study in two stages. Primary data was collected directly from the selective organizations’ respondents. In the later stage, secondary data was collected via internet-based research to gather original data to provide evidence to answer the research question (Salmons, 2020). I facilitated several semi-structured in-depth interviews and surveyed questionnaires with the organization’s respective department/key informants to collect the primary data. The rationale behind initiating semi-structured interviews is that it allows the researcher to include both predefined thematic and follow-up questions as each respondent can talk about their unique experiences (Mason, 2017). Though the initial plan was to collect these data from the field, the primary data collection was later conducted through internet-based communication. Gatekeepers from my interpersonal and professional network

¹³ Organization’s name such as BASA Foundation, BURO Bangladesh and SAJIDA Foundation are written as BASA, BURO and SAJIDA respectively in the empirical findings chapter.

have worked as a bridge where they utilized their professional network and organizational resources to contact potential key informants from the selected organization (Hammett et al., 2014). Besides, knowing and building a relationship with gatekeepers will also help the researcher add more private individuals or organizations to the participant list who can eventually provide knowledgeable insights and reduce the limitations in the field (Musante & DeWalt, 2011).

I approached every organization with a formal email invitation with a brief explanation of the study purpose, tentative working plans, and a survey – questionnaire to give a possible idea of the areas/challenges that I was interested in hearing about their opinions. All the participants in this study initially provided their responses through the survey-questionnaire, and five of them participated in in-depth interviews. Upon their confirmation, I sent a zoom-based secured interview invitation with the interview guide (See Annex C) and consent form (upon request) to the probable respondents from the organizations (for five in-depth interviews). The participants gave their opinions based on both organizational and personal experiences. All the interview guide questions were covered during the zoom sessions allowing more conversational flow; in most cases, they lasted for an hour. Organizations that participated in the in-depth interview have shared some public organizational data beforehand. The rest of the organizations also contributed to the study by providing their written opinion in the survey questionnaire (See Annex C: Questionnaire). The interview guide and interview guide questions were formulated based on the functions of DOI theory's components.

A total number of 11 MFIs and one research institute confirmed their participation, and 16 key informants participated individually and teamwise (respective dept. of the organization) in different stages of interview and answering the questionnaire. Both interviews and questionnaires were conducted in their mother tongue (Bengali) to ensure respondents' linguistic comfort. The answers were then selectively translated and transcribed in English to adopt the analysis as a “selective process reflecting the theoretical goals and definitions” (Ochs, 1979, p.168).

For secondary data, information has taken from OPTIX's *Pioneering Cashless Microfinance in Bangladesh* (see OPTIX, 2018), UNCDF's study report on *Digital Transformation of MFIs in Bangladesh* (see UNCDF, 2019), BRAC's report on *Emergency cash transfer through digital wallets during COVID-19 pandemic* (See Azad et al., 2021), working papers on MFIs published by InM, annual reports of respondent MFIs and newspaper

articles on MFS for this study. Separate emails were also sent to the respondents in case of any further clarification needed for their responses.

Recorded and transcribed interviews were processed for analysis through NVIVO 12 software which performs qualitative data analysis. Data analysis was done by coding meaningful or relevant patterns found from the interviews, email responses, reports, working papers, project documents (Creswell & Poth, 2016; Yin, 2014). Some of the findings were coded and interpreted based on the theoretical framework, while the other findings were formulated based on information from the respondents.

4.4. Ethical Considerations and Self-Reflection

Ethical considerations keep a researcher away from the disapproved and inappropriate ways of doing research, affecting individuals' vulnerability, and leading them towards marginalization (Creswell & Poth, 2016). Moreover, according to Research Ethics Framework (2005), it is essential to inform any conflicts of interest or bias prior to conducting any academic conversation with the respondents (Silverman, 2010). Therefore, throughout the study, I maintained a rigorous level of ethical consideration by keeping anonymity, confidentiality, informed consent, and informing my prior work experience to all the respondents (Mason, 2017). All the respondents were briefed with the research aim and transparency of the study during the initial communication and at the beginning of the in-depth interviews and survey questionnaires. Therefore, instead of using personal identification, the empirical findings chapter uses the organization name as key-informants to ensure data sensitivity. Besides, only the public information of the organizations was taken into account in the case of sharing organizational data.

Since it was a qualitative case study based on organizational perspective, any internal information was given with proper consent through a Non-Disclosure Agreement (NDA) when the organization required (See Annex D: Consent/NDA Form). Both verbal and written permissions were taken while storing the in-depth interview recorded for the core purpose of transcription, and respondents were reminded of their voluntary participation. Documents and reports that were received from the organization were processed with confidentiality. Further on, I took extra care on using politically and organizationally correct language and terms by adopting academic terminology, using neutral pronouns, and avoiding reinforcing stereotypes. Throughout the thesis, the academic writing style has been used, such as the Harvard referencing system, to acknowledge sources and ideas to avoid plagiarism.

According to Tracy (2012), self-reflexivity is vital to qualitative studies, which refers to the researchers' thinking on their demography and experiences influencing different stages of research. Acknowledging myself being an origin from the global south, studying in the global north, and my experience working in the microfinance sector in the country where I was born and grew up, I gained certain contextual advantages. It impacted and created inclusive thinking on the choice of the theme, approach, and analysis. Therefore, I took extra attention to put myself in a less biased position and used my learnings (operational and technical) from work while communicating with the respondents of organizations and conducting the interviews (Hammet et al., 2014). I used my contextual knowledge while going through the process and informed the respondents about my previous involvement in this sector and being an international post-graduating student, aiming to contribute to the development sector. It motivated them to provide more insightful observations.

Furthermore, my interest in mobile technology and the accessibility of exploring various databases and e-libraries through constant internet connection also allowed me to explore different aspects of this case study. As the study also involved a certain degree of technical knowledge, I reviewed the interview guide, questionnaires, and follow-up questionnaires (both questionnaires were offered in Bengali) to seek specific process-related answers from the respondents. Besides, looking at the diversity of the respondents in terms of the organization's size and their respective departments, I changed my approach of asking them questions accordingly throughout the interviews. Speaking in the native language was also helpful for me to connect them with the study and set up a friendly environment. However, NVIVO 12 could only offer English as transcribing and coding language for the responses. During the interviews, I encouraged the respondents to refer their observations with their field experience and kept the room open for follow-up questions. In terms of theoretical grounding, my understanding of the DOI theory's different components allowed me to look upon the actors involved in the theme from various aspects.

4.5. Limitations

The initial plan of the study was to include both supply (MFIs) and demand (clients) side of the microfinance sector. However, due to the Covid-19 restriction during the study period, it was hard to collect the data from the field physically. As a result, the focus of the study was shifted towards only the organizational perspective. Though various participants (Top to bottom hierarchy) have the possibility to contribute more inclusiveness and thoroughness in such case studies, I could only include the respondents from mid-level to top-

level management from the organizations. A proper field study would possibly engage the field staff through a face-to-face discussion and grass-root stakeholders. In this context, there were issues such as getting access and connecting them through e-interviews and assuming there is power dynamics within the organizations appeared as a hurdle to provide experience and created a limitation in data quality. Also, some respondents can be partial and biased due to their organizational role or inaccurate due to a lack of understanding of the concept (Hammett et al., 2014). Only three of the respondents during the in-depth interview and answering survey were women, so the study is also limited in balancing gender perspective.

Throughout the study, several attempts were made to connect relevant stakeholders (both MFIs and MFS providers) by approaching their organizations' communication channels. Therefore, the assurance of respondents' engagement in this study required several back-and-forth emails, phone calls, and influence from gatekeepers. Also, one of the respondents (who is also a gatekeeper) provided a contact list of 11 local MFIs, and upon contact with them via email, I received only five responses. However, some of them had not correctly filled out the questionnaire, and they provided a very limited response. Moreover, many of the MFIs or even relevant stakeholders do not have updated websites, and there was a lack of relevant information in their publications.

5. Chapter 5: Empirical Findings and Discussions

According to Roger's innovation theory, when an organization wants to adopt an innovation and deliver that to its client, it facilitates the diffusion process through four elements. According to Rogers (2003), diffusion barriers, whether from the organization's internal aspect or all the participating stakeholders, are all interconnected to each other, and these barriers affect the diffusion process individually or collectively, resulting in a very slow or even null diffusion if the organizations fail to address them and redesign the strategy accordingly. In this chapter, the empirical findings are discussed and analyzed based on the narratives from responding MFIs and secondary data such as policy papers and reports to explore the organizational barriers within the Innovation, Communication Channel, and Social System based on their digital inclusion initiatives.

5.1. Challenges in Adopting Innovations

Organization's innovativeness is considered in this study as the degree to which MFIs are *relatively earlier* in adopting any specific innovations in their operational activities and giving their services to the borrowers (Rogers, 2003). In this study, MFIs' innovativeness can be classified into the *ideal types*, which means innovation within their internal operations and services could be compared based on the observations of reality (ibid).

Looking at how MFIs in Bangladesh have integrated the innovation, we can categorize that into two stages. MFIs have started using a computer-based *Automation* system starting from their central to branch offices in the first stage. In the automation system, MFIs use Loan Management Software (LMS) to perform loan applications and transactions with clients, update their information, print VO-based collection sheets, and financial book-keeping (UNCDF, 2019). The later or the advanced stage of innovation includes using DFS for loan transactions through mobile money, mobile or tab-based collection approach and providing digital passbook, updating clients about their loan information through SMS-based service, setting up ERP and digitized portals (ibid). Almost all the MFIs in Bangladesh have connected themselves with the first stage of innovation, but only a few of them are now exploring the second stage on either a functional or pilot base.

However, many small local MFIs still have limited or no digital means of resources (K.I – 12). So, here the overall difference is quite significant in terms of MFIs engaging themselves in the innovation-decision process. A study conducted by UNCDF (2019) on the digital transformation of MFIs in Bangladesh reported that most of their surveyed small-sized

MFIs' senior management do not have a proper understanding and awareness about Digital Field Application (DFA) for loan origination and collection and intend to stay in the current traditional system.

When an organization participates in the decision process where it should adopt or reject any (new) innovation or shift from the existing one to an advanced one, the decision gets influenced by various economic, sociological, organizational, and even psychological factors (Butler & Sellbom, 2002; Rogers, 2003). These factors also may act as barriers to adoption as well. The respondents were asked about their opinion on potential internal organizational barriers that affected the rate of adoption or even the decision to adopt any innovation. Their emphasis on the factors imposing as internal barriers of their organizations to adopt the innovation is discussed briefly in the following sub-sections.

5.1.1 Low affordability to technology: MFIs in Bangladesh, in the first innovation stage, due to lack of in-house IT capability, purchase the technology such as automation and LMS (one-time) from software developers and pay a certain amount of service charge periodically (UNCDF, 2019). One of the reasons that MFIs claim to justify the high loan interest rate is that the operational cost is also relatively high. Also, MFIs are dependent on commercial bank loans to disburse the loan money to their clients. So, to pay this additional cost for automation technology, all the MFIs have to rely on their profit. To some extent, this is perhaps possible for the MFIs with relatively high client numbers and outstanding. However, the small MFIs often struggle with client numbers and loan repayment, so financially, they struggle to afford such expensive digital automation technology.

To adopt the advanced stage of digitization, organizations need to develop and strengthen their internal infrastructure's capacity to manage the process. It requires heavy monetary and time investment. In order to perform desired digitized transactions, MFIs are required to integrate several internet-based portals to ensure a proper communication process with the MFS providers (K.I – 5 & 6). Therefore, MFIs must invest and develop the required technical infrastructure within their system. K.I-6, therefore, reinforces,

Such capacity build-up takes a long time. Technical infrastructure here needs to be built. At the same time, we need to look at the system's capability. So if the system is not robust, then it will not be easy to manage the transactions. (*Author Translation*)

Rogers (2003) connects such affordability with the organizational portfolio, calling this *Organizational Slack*. Organizational slack defines the uncommitted resources available to an

organization and directly influences the organization's leaning towards advanced innovation, higher in cost. Rogers says in his DOI theory, "Perhaps one reason why organizational size is so highly related to innovativeness is that larger organizations have more slack resources" (ibid, p. 361). Opinions were found both for and against this thought during this study. For example, one of the respondents pointed out their organization's willingness and management's vision to involve a team of experts dedicated only to advanced digitized innovation developed via their research and development unit.

On the other hand, UNCDF (2019) found it quite the opposite as one of their surveyed MFI said: "The cost of implementing DFA is high. The cost of hardware such as a mobile phone or tablet will be too high for us. Purchasing it for all the frontline workers will be a huge cost for MFIs" (p.26). However, MFIs such as SAJIDA also provide loans (BDT 15,000 / \$ 178) to their front liners to purchase and Android phones for efficient operation (K.I – 9).

5.1.2 Discontinuance: Though respondent MFIs have shown their willingness to attain digitization, most of them address their dependency on the donors and how the fund crisis does not allow them to explore furthermore. Financial stability is an essential key factor for them that decides the sustainability of any adopted innovation. Rogers (2003) defined sustainability as the change that continues even after the organization's initial resources end.

Respondents in this study confirm the tendency of mid and small MFIs asking for the extra fund or grant from donors to cover the required cost for adopting the technology. Therefore, if the innovation decision is based on some project-based strategies, the sustainability of the innovation becomes vulnerable due to limited time and resources (ibid).

Moreover, sustainability is related to re-invention (ibid). If an organization experiences some unexpected problems that point out the core purpose's inefficiencies, such innovations face the fate of discontinuance (ibid). SAJIDA's cashless microfinancing through OPTIX Program had to discontinue after three years of running, even after getting a remarkable response from the clients' side. SAJIDA marked financial unsustainability and infrastructural obstacles as the primary reasons (OPTIX, 2018; K.I – 9). Some of the respondents also mentioned their concern on how the project management set up a temporary mindset on project-based innovative initiative instead of integrated the innovation with the daily activities, which influence many donors denying to funding for such project, for example, PKSf's one of the main strategies is not to provide any innovation fund for a limited time-based project (K.I –12). K.I – 12 mentioned PKSf's strategy regarding this matter as,

The real scenario is when the MFIs take innovative initiative, either donor-funded or project-based or even both; once the project period is over, the initiative also stops. For this reason, PKSF has decided not to give any funds for the project-based innovation initiative to its MFI partners. Therefore, it aims to motivate them to integrate such innovations into their daily activities (*Author translation*).

It has been more than a decade that the MFIs started experiencing the innovations; however, the transformation rate is relatively slow when transforming from the earlier stage to the advanced digitization. MFIs usually generate their profit from the service charges (interest rate) for each loan. MRA has fixed this rate (27% declining rate) for every MFIs in Bangladesh, so the only variable which defines the profit for them is the number of loans disbursed (Rezaul, 2019). According to CDF (2020), the top 3 MFIs disbursed 48.48% of the total loan disbursement in 2018-2019. At the same time, PKSF finances 278 regional and local MFIs (PKSF, 2020). Looking at the borrower numbers, the top 3 MFIs have at least 2 million more than the total number of borrowers these 278 MFIs have (CDF, 2020; PKSF, 2020). In such a competitive market, most mid and small-sized MFIs cannot afford the innovations. At the same time, high dependency on funds pushes these MFIs away from self-sufficiency, explaining the reason behind such adoption nature.

5.2 Challenges inside Communication Channel

The role of communication channels for the MFIs in this study is interpreted as both interpersonal and interactive communication where the MFIs can disseminate their digital innovation to their clients via their field staff (clarifying and providing additional information) and through the DFS platforms (a medium to utilize the innovation) (Rogers, 2003). However, glitches within these two types of communication channels impact diffusion proportionally. Both primary and secondary data addressed some existing challenges within these communication channels discussed briefly in the sub-sections below.

5.2.1 Distancing from the central model of Microfinance: From the beginning of microfinance activities in Bangladesh, one of the core concepts to reach the unbanked and marginalized people is to form a group of borrowers as Village Organizations or VOs (for small loans) (Mia et al., 2019). The significance of these VO meetings is not only confined to just loan-related activities; MFIs also see the VOs as a place to talk about their development ideology, reinforcing loan repayment; in short, VO is the center of microfinance, admitted by all the respondents in this study.

A common generalization is that adopting any innovation would bring beneficial results for both organization and clients – according to Rogers (2003), it is pro-innovation bias consequences. Consequences are difficult to measure, and they are often confounded with other effects such as values, ideologies, purposes, etc. (ibid).

Therefore, operating microfinance through mobile money transactions threatens the necessity of these VOs. When clients pay their installments through their mobile wallet or MFS agents, it gives them flexibility from attending VO meetings. As a result, interpersonal communication between the client and the field officers gradually becomes weak, impacting clients' tendency to save deposits and loan repayment. When SAJIDA conducted their cashless microfinance program in some selected branches, female microcredit borrowers appreciated the flexibility of paying the installment in their convenient time, but as FOs were no longer physically conduct the VO meetings, so some members saved less than their usual; resulting in 15% savings dropped in nine months at one pilot branch (OPTIX, 2018). The absence of VO will make small MFIs more vulnerable to loan default, and continuous loss in savings deposits will make the money circulation hard for them. All the responding small-sized MFIs consider strongly to keep the VO as a communication channel between them and their clients; thus, such consideration pushes them back from adopting digital transaction technology.

To conduct a loan procedure, we have to go to our microfinance clients. Our VOs play an important role in our daily operation, and through VO, our clients get a strong influence to pay their loans properly. Therefore, in the context of Bangladesh, it will be very hard to conduct a digitized transaction to operate microfinance activity. (*Author translation, K.I – 11*)

5.2.2 Lack of Digital Competence among Field Staff: Rogers (2003) looks at the role of change agents as someone who can create need of innovation among their clients by influencing them with the existence of desirable new ideas through their interpersonal relationship. In reality, most change agents consider the operation of principle-knowledge is out of their competence, and therefore, often face problems to commute the innovation to the desired clients (ibid). So, in this case, their quality of interpersonal communication with the client becomes essential; however, digitized transactions reduce the opportunity to meet with them. Therefore, the role of a field staff becomes more like a trouble-shooter and recovery staff.

The range of minimum education qualifications among the respondent MFIs to apply for a FO position is from finishing higher secondary schooling to completing a bachelor's

degree. It means that the qualification of the FOs also varies among the size of the MFIs. However, none of the MFIs require a certain level of digital literacy while recruiting FOs. As a result, FOs as change agents hardly understand the benefits of the innovation, rather become afraid of consequences due to such change management (Rogers, 2003). So, to increase the quality of digital competence among FO, small-sized MFIs often struggle to provide tailored skill-based training due to a lack of financial and material resources. As a result, FOs with comparatively lower digital skills and older age groups show indirect resistance to technology adoption.

Some of the respondents also observed a ‘portfolio increment’ concern among some of the FOs, acknowledging the situation that the digitized transaction would reduce the manual work pressure, thus divert the pressure towards increasing the number of clients and performances in the portfolio, creating a higher demand for staff efficiency. In such cases, they seek help from their most responsive clients to get more potential clients. It creates a wider socio-economic benefits gap among clients as well as compromises the quality of the loan.

5.2.3 Challenges with DFS Providers: The interactive communication quality of new technology makes interdependence between organizations and their clients. The critical mass point is where an interactive innovation becomes self-sustaining which has enough individuals in the system who have adopted it (Rogers, 2003). A critical mass of individuals must use the innovation before it has enough utility for others to adopt. Therefore, the technology must commute through a medium that is affordable, accessible, and provide the desired service to both organization and clients. An interactive innovation also becomes vulnerable to discontinuance if it fails to re-invent and attract potential adopters (ibid).

Besides adopting digitization within the organization, MFIs work with DFS providers to deliver the digitized transaction service to their clients through mobile money. However, it is a complex system, and therefore the role of DFS providers is crucial as an interactive communication channel. Among the respondents, only BRAC, BURO, and SAJIDA conduct the cashless transaction through MFS providers. There are currently 16 MFS in the market, but bKash is among the largest and old ones and gets an advantage because of the first move. BURO is developing their payment portal for all the MFS providers where BRAC is currently providing service through bKash (K.I – 5, 6 & 9).

Figures 4 and 5 (interpreted by the author based on respondents' interviews and secondary data sources) provide brief illustrations of how these MFIs conduct digitized transactions (Loan disbursement/Savings refunding and loan repayment/Savings deposit) through the MFS platform.

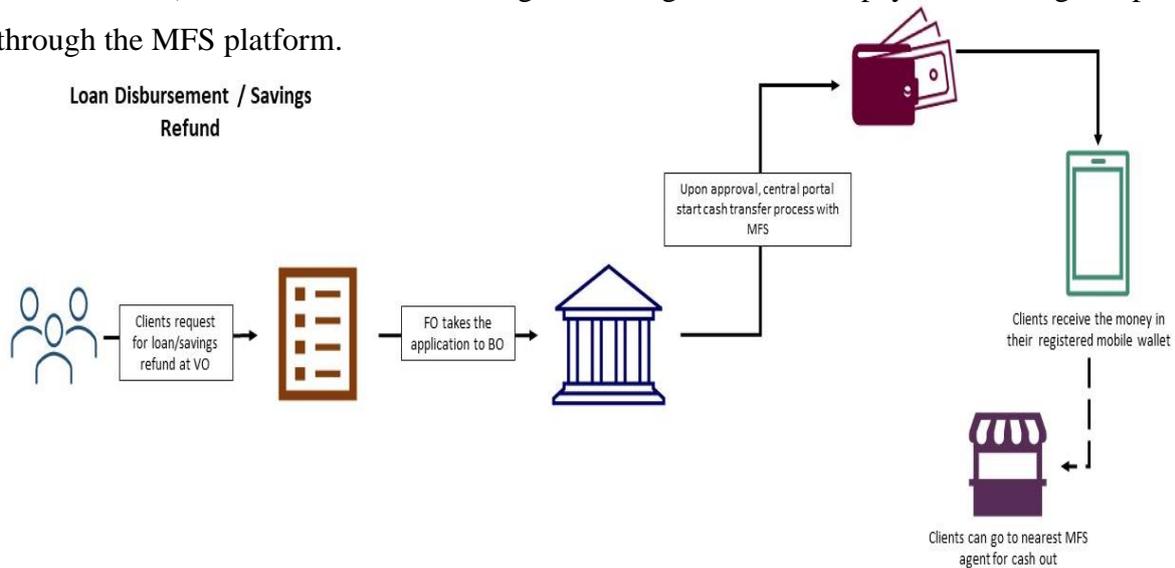


Figure 4: Microfinance Loan disbursement/ Savings refund process through MFS (Source: Author's interpretation; UNCDF, 2019; LightCastle, 2019; Azad et al, 2021)

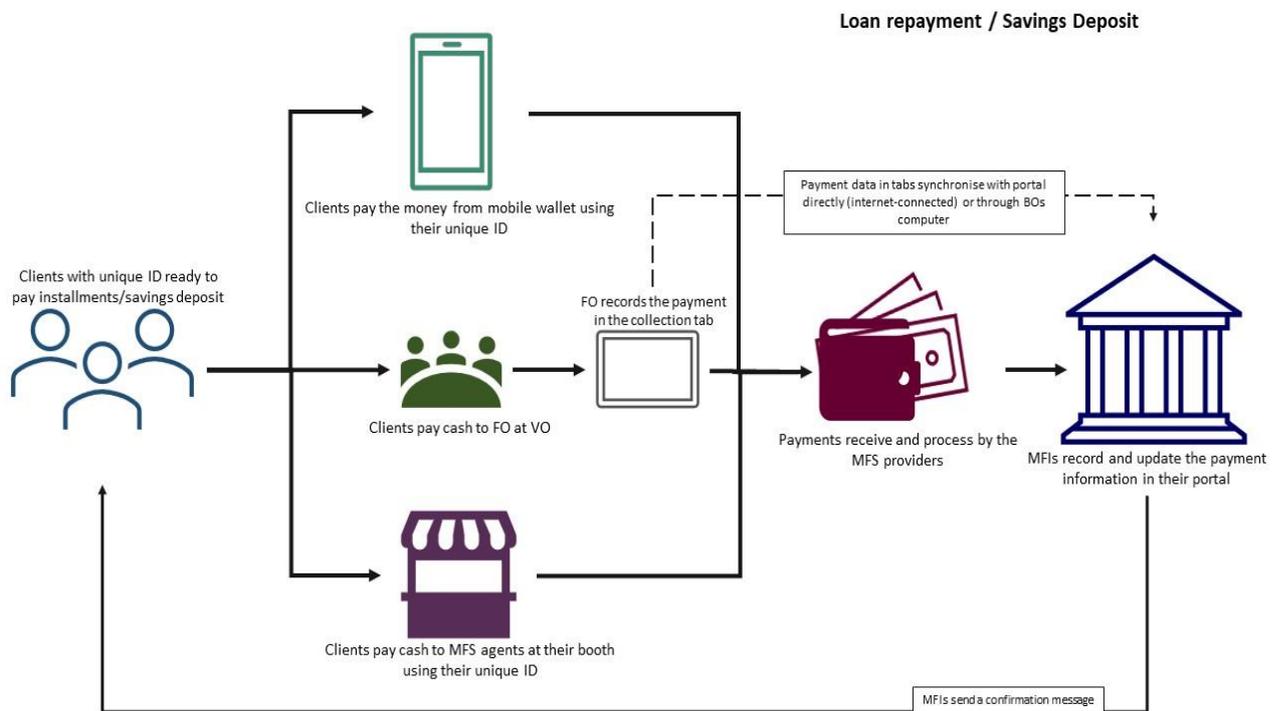


Figure 5: Microfinance Loan Repayment/ Savings deposit process through MFS (Source: Author's interpretation; UNCDF, 2019; LightCastle, 2019; Azad et al, 2021)

The affordability of using the service of these MFS providers is quite expensive and challenging. They charge BDT 14 - BDT 18.5 (US 17 cents – 22 cents) from their registered users to cash out every BDT 1000 (\$12) that has not changed or reduced since the beginning (Uddin, 2021). So, if the MFIs want to disburse the loan through MFS, borrowers will not get the total amount of loan they desired to cash out from their mobile wallets. As a result, many of them prefer to come to the branches and take the cash from there directly. However, cash in for the mobile wallet is free of cost. Another challenge is concerned with the transaction charge; for example, if a client wants to pay according to the repayment plan, MFS providers charge 1% of the total amount for each transaction. Though paying from their mobile wallet is a convenience for the borrowers who are engaged with services or business, economically the transaction cost is however considered the extra cost for them to avail the service. Some of the poorest borrowers may find it difficult for them to manage this extra cost. For BRAC MF clients, the payment is free of cost (BRAC pays the entire transaction fee to motivate the clients towards digitized transactions). The respondent from BRAC mentioned during the interview: “So far our organization is quite sustainable and earning profits, so we are always putting our focus on how to improve our client service and motivate them to use the innovation.” (*Author translation*, K.I -5) On the other hand, both BURO and SAJIDA offered zero transaction cost for the initial users as a part of the campaign or during the pilot phase; however, the result showed that this extra transaction raised their overall operational cost, and in order to balance the cost, for example, they compromise with services (OPTIX, 2018; K.I – 6 & 9).

The customer will pay the charge to bKash. As per our regulator, we are not allowed to charge anything extra from our clients. If the client is willing to pay through bKash, bKash charges the additional amount, currently 1% from the client. We are currently negotiating about that with providers as the issue creates an obstacle for both clients and us, But if you consider that BURO should pay it, it will cost us a lot. (*Author translation*, K.I – 9)

Accessing the MFS agent is quite easier for the clients due to enough penetration of MFS agents in the area. A study conducted by BRAC in 2020 reported that the average distance to agents was 14 minutes from the client’s house (Azad et al., 2021). However, due to the Bangladesh Bank’s imposed limit on the daily and monthly transaction so the client cannot be able to cash out the full loan money at one time; clients require to go to the agent several times or several agents, which is a hassle for the clients (UNCDF, 2019; K.I – 9). Moreover, agents also keep a limited amount of cash with them for security reason,

Small-sized MFI respondents in this study confirmed that they do not have any organizational arrangements with any DFS providers; however, they receive proposals to adopt the technology in collaboration with them, but due to expensive operating cost, they are still observing and waiting for some initiatives taken by the regulatory body. However, they also reported that some of their FOs have received installment money from the clients in their mobile wallets and adjust with the accounts. However, they acknowledge that there may be cases of mishandling the amount, but they do not have the required monitoring structure to solve them.

Different communication channels are crucial as they are involved in all the five stages of the innovation-decision process (see Figure 2). Therefore, Rogers (2003) points out the fate of innovation diffusion has a major dependency on how effectively it can be delivered to the intended user. Therefore, when MFIs want to spread their innovative services among their clients, both interpersonal and interactive communication must complement each other. It is also very important to clearly understand the innovation and predict the possible consequences, thus preparing the change management based on compatibility (ibid). Only a few MFIs in the country have (or investing) proper research and development units to navigate the communication channel by inventing compatible innovation. In contrast, most of the others lack competent resources.

5.3 Challenges in Social System

The role of technology or innovations in a social system can be studied through the *Social Construction of technology* which argues that social factors shape the technology, and norms and values of the social system influence the functionality of the technology (Rogers, 2003). Therefore, certain attributes within these factors shape the diffusion result. Based on the data, this study observed that the MFIs experience challenges within the regulatory body and their clients' social attributes such as literacy rate and gender gap, which influences the innovation-decision process. Similarly, the availability of proper and affordable infrastructure and communication tools is essential for the organization. These actors, all together, in the social system of Bangladesh have a crucial influence on the fate of diffusing any digital innovation by MFIs.

5.3.1 Regulatory Gaps: UNCDF (2019) pointed out some of the regulatory gaps which affect the digital transformation of MFIs in Bangladesh. While Bangladesh Bank has a certain set of regulations for commercial banks on digital payment systems, digital credit, and

DFS providers, MRA has yet not developed any IT policy or guidelines related to digital payment or using digital technology, protecting client data, ensuring cybersecurity, recovery and disaster management plans that should be followed by MFIs (UNCDF, 2019). Only BRAC and BURO are developing their payment portal to enable payment systems for their clients (together, they have 22% of all MFIs clients). It is quite an expensive capacity development for the MFIs, and they do not get any financial support from the donor or the government. Moreover, there is no clear direction from MRA about who should pay the transaction cost for loan repayment through MFS. Furthermore, MRA does not have any specific guidelines for DFS providers especially tailored for microfinance activities (ibid).

According to Rogers (2003), when an innovation enters into the social system, it passes through some regulations from the central authority (such as government) where the authority governs the innovation through a set of ‘do’s and don’ts’, and it can function and collaborate with other mechanisms to encourage or discourage adopting the idea. On the contrary, if the authority does not update the regulations or predict the future impact of innovations, the diffusion process comes to a lengthy standstill. Organizations should have a clear understanding of regulations made for every digital solution by the authority. Due to the lack of MRA’s vision and proper guidelines, MFIs with limited financial resources often find it very difficult to negotiate for innovation from the third party, resulting again a push back on them from adopting digital technology (UNCDF, 2019).

Unlike traditional and commercial banks, MFIs do not have access to the National Identification (NID) database. Consequently, client verification has become very challenging; loan repayment becomes vulnerable due to multiple borrowing (ibid). However, around 25 MFIs are now collaborating with Bangladesh Bank to form a disciplined and automated Credit Information Bureau (CIB) database (K.I – 5, 6, 9 & 12).

5.3.2 Constraints from Clients: More than 90 % of the MFI borrowers are women in Bangladesh, and 65 % of the microfinance operations are based in rural areas (Mujeri, 2020). Though microfinance increases the status of women in their family as the access to a loan when it comes to the ownership of the loan, it is their husband who is the decision-maker, depending on the context, situation, and also the nature of the patriarchy (Banerjee et al., 2015). According to Azad et al. (2021), Bangladesh has a significant gender gap for mobile phone ownership and usage of mobile wallets, 61% and 11% for women while 86% and 30% for men. As a result, women provide their husbands’ mobile wallet registration numbers for digital loan purposes in

most cases. They do not go to the agents to cash out their loans; usually, the loans are withdrawn by the male member of their household. As a result, though the innovation reaches potential clients, it fails to meet one of the core values of the MFIs' which is to empower women by giving them financial access and decision-making authority (Yunus, 2003).

Organizations, to diffuse their innovations, also target a specific group or community with certain possibilities of adopting the innovation. However, the innovation must have compatibility, which means the potential adopters perceive the innovation based on their existing values, social norms, and needs. The innovation should also be affordable, accessible, and trustworthy to achieve acceptance from the clients (Rogers, 2003). When innovation is also incompatible with cultural values, its adoption becomes affected.

To address MFI clients' perception against opening the mobile wallet for DFS activities, most of the respondents emphasized on their observation that their rural clients are not aware of such technology; they do not feel that the technology is useful for them. It is risky to use, and that they do not need the wallet because their income is low – such an approach raises the concern that the MFIs do not have enough client's demand.

“There is a lack of promoting Digitalization on the client stage. Therefore, clients are not aware of its demand.” (*Author translation, K.I-3*)

“Clients do not want to take the responsibility of paying extra for digital services” (*Author translation, K.I-11*)

Another concerning factor that the respondents addressed was that due to lack of awareness and accurate information sharing knowledge, rural clients are mistreated by fraud MFS agents and spam calls. Considering MFS agents are the promoter (change agents) of MFS service, clients often trust them more than they trust the innovation; in short, they create a trust-based relationship with the MFS agents (Rogers, 2003). Sometimes, clients share their PIN of the mobile account with agents in public and end up getting harassed or losing the money, according to the respondents. The victims thus exchange their experiences with others in society. As the social system is a collective learning system, such negative experiences from earlier adopters transmit through their interpersonal network, affecting the adoption rate (Rogers, 2003). Though the DFS providers and MFIs are constantly providing financial and security awareness to their clients, the number of mistreated cases is quite remarkable.

During the analysis, the DOI theory's *Time* component is considered a secondary factor as it courses through all the other three components of DOI theory. While asking the respondents regarding the long adoption rate, they addressed the challenges discussed, affecting the adoption rate directly and indirectly. Another challenge of the analysis is the quality of the data provided by some of the respondents. Interpreting such data was complicated; therefore, only the response reflected the in-depth understanding of the challenges was considered and mirrored during the analysis.

6. Chapter 6: Concluding Remarks

Digital financial inclusion brings the unbanked and marginalized people of our society under the big umbrella of economic development with the advancement of digital technology. Concurrently, it is a topic that needs further attention, both to improve its impact and further adoption; otherwise, the digital divide is waiting at the doorstep. The impact of technology, the way it spread within a social system, is more than a technical matter; it transforms society and brings changes in the social process. Change agencies, therefore, play a vital role in driving the diffusion of innovations. Thus, they set the canvas where the elements of the society can see the significance, choose either adoption or rejection. Therefore, this thesis aimed to explore the challenges that the change agencies, or the Bangladeshi MFIs in this case, experience while setting up the canvas, presenting the innovations in front of their beneficiaries. Components' study of Everett Rogers's Diffusion of Innovation theory applied on the observations to understand how the challenges are obstructing the spreading of digital innovations, blocking the pathways of MFIs to bring the poor, unbanked population under their service radar through digital microfinance.

So, what are the organizational barriers for MFIs to operate digital microfinance? To summarize the empirical findings, the thesis finds out most MFIs cannot adopt advanced digital innovation such as digital transactions through mobile money due to high operational cost, lack of required funds, donor crises, etc. Due to a lack of digital skill and educational qualification, the field staff of MFIs hesitates with technology. Most of the MFIs do not have the required material and financial resources to train them. Furthermore, the platforms available for delivering digital services challenge the affordability of both the MFIs and borrowers. Though the Bangladeshi government is injecting the concept of 'Digital Bangladesh' in every development aspect since 2009, the regulatory body for MFIs is yet taking time to realize it and develop a supportive attitude, meaning that it does not have an IT policy or guidelines for MFIs on digital services. Respondent MFIs have also raised their concern on the core microfinance model, as digitization makes it vulnerable to the quality of loans as it creates distance between them and their clients. Lastly, it's the social construction where most of their borrowers still live under patriarchal norms, have low digital ability and ownership on the digital devices, and do not feel secure paying their hard-earned income through something that they cannot trust properly.

MFIs, globally and in the context of Bangladesh, are contributing significantly by including the unbanked and marginalized people and creating scopes for income generation. With this digital way of doing microfinance, MFIs can also include themselves in many aspects, where directly and indirectly, they have now the opportunities to contribute to the country's SDG progress. Therefore, the challenges found in this thesis have the possibilities to be addressed collectively both to the regulatory body and the government, creating the scope for future studies. In fact, many of these challenges can be solved by the government's long-term intervention of developing uniform digital payment infrastructure, providing financial subsidies to local and regional MFIs for capacity and infrastructure development, encouraging the MFIs towards a digitized working environment, setting up specific policies for MFIs and DFS providers to make their collaboration effective, etc.; all the respondent MFIs have shown a high level of willingness towards digitization, but they also believe that they cannot do it alone without the help of government being a promoter to digital initiative. Probably this where the future scope of this study continues, to advocate the government for creating inclusive digital facilities for all the development stakeholders. At the same time, it is also necessary for MFIs to prepare their clients through effective financial literacy advancement with the essence of digital tools, empowering them with digital inclusion.

To some extent, the Covid-19 pandemic appeared as a reality check for the MFIs and set a tone for the future of digital payment in Bangladesh. In the midst of the pandemic, Bangladesh experienced a prominent appearance of mobile money transactions. MFIs who already were experimenting, exploring the pros and cons of digitization, pushed themselves to the top gear, scaling up the digitization nationally, just to ensure balanced loan repayment. Unfortunately, the scenario was quite the opposite for the rest; they risked their workforce, and had to go door by door, borrowers by borrowers, to get portions of their salary.

Now, let me take a step back, and I would like to reconnect my experience as a microfinance worker to understand the consequence of microfinance being digitized. On 13th May, Prothom-Alo (2021) published a report where it said, prior to the Eid festival, both bKash and Nagad, the country's leading MFS providers, experienced transactions worth BDT 2 billion (\$23.61 million) per hour. It shows that the Bangladeshi people are making digital payments as a part of their daily life. It also indicates the direction for MFIs to the future and concerns me at the same time. The core of microfinance is the relationship between MFIs and their borrowers, and it lies at the VOs. A digital payment system also requires a holistic approach;

on the one hand, ensuring the total approach limits MFIs-Borrowers' regular socialization. On the other hand, only a certain use of the system increases the manual workload for the FOs.

Moreover, total transformation towards such digitization certainly increases efficiencies but questions the need for VOs, making MFIs nothing but another commercial banking unit. It also leads toward the declining quality of the loan. As the field staff knows their borrowers better than anyone else as they regularly meet, they also motivate them to utilize loans properly.

Obviously, the thesis can see the sole purpose of such digitized advancement is for quick and efficient operation and client service, and it makes the unbanked financially inclusive, but I would also like to raise a couple of concerns; firstly, can MFIs be able to sustain their legacy of such inclusiveness in a very competitive financial market where the commercial banks are now more targeting the microfinance clients? Secondly, even if the MFIs use digitization to increase their portfolios, will they be able to re-model their ideology as one of the promoters of serving the marginalized with both financial and social well-being development tools as they may not see their client more often like before? Isn't it such a dilemma of taking advantage while giving away the identity?

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Annexes

1. Annex A: Roles of Digital Financial Inclusion and Scopes of MFIs in SDGs

	Role of Digital Financial Inclusion and Scope of MFIs
Goal 1 <i>End poverty in all its forms everywhere.</i>	Using digital financial systems to get access to financial services such as savings, loans, microinsurance, etc. can help the under-served population to eradicate poverty
Goal 2 <i>End hunger, achieve food security and improved nutrition, and promote sustainable agriculture.</i>	Access to digital finance allows farmers to attain agricultural financial services (agriculture loan, govt. relief) needed for their activities, building stable and sustainable enterprises.
Goal 3 <i>Ensure healthy lives and promote well-being for all at all ages.</i>	Through digital financial services, clients can have quicker access to their savings during unexpected moments. They can also apply and pay for their micro health insurance benefits or premium or apply for the medical loan product.
Goal 5 <i>Achieve gender equality and empower all women and girls.</i>	Microfinance can use digital finance to empower their women clients on their economic resources with greater control, safe and discreet access to the banking system, and better creditworthiness assessment for all the women-owned enterprises.
Goal 8 <i>Promote sustained, inclusive, and sustainable economic growth, full and productive employment, and decent work for all.</i>	Microenterprise and service (job-holder) loans boost entrepreneurship and employment productivity where respected clients can minimize the time for loan regarding activities.
Goal 9 <i>Build resilient infrastructure, promote inclusive and sustainable industrialization, and foster innovation.</i>	Digital financial inclusion enables MSMEs to grow by providing access to digital financial services in their supply-chain payment processes and engaging their customers with the digital economy.
Goal 10 <i>Reduce the costs of remittances and promote economic opportunity and social inclusion for all.</i>	Digital finance for the MFIs clients (through new loan products and micro insurances) can be an impactful tool that will provide them access to new economic and social opportunities and increase their income and financial resiliency.

Table 2: Role of Digital financial Inclusion and scope of MFIs in SDGs (BRAC,2020; Nations,2021; Ferrata,2019; UNSGA, 2018)

2. Annex B: Basic Information of the Respondent MFIs

#	Organization Name	#Branch	#Staff	Minimum Education Qualification	#outstanding borrowers
1.	ASHROY	154	244	Postgraduate/ Masters	13264
2.	ASPADA	42	349	Undergraduate / Honors	75881
3.	BASA Foundation	73	231	Higher Secondary	58181
4.	BASTOB	46	167	Higher Secondary	56047
5.	BRAC*	2272	48,284	Undergraduate / Honors	6,046,987
6.	BURO*	1027	9,782	Undergraduate / Honors	1,172,873
7.	GRAMMAUS	18	166	Undergraduate / Honors	42954
8.	RDS	25	212	Higher Secondary	28071
9.	SAJIDA Foundation	232	3,556	Undergraduate / Honors	271,801
10.	SANGRAM	50	176	Higher Secondary	41891
11.	YPSA	61	450	Higher Secondary	55728

*Source: CDF, 2020 (for the year 2018-2019); Others were given as of year 2021 in the survey-questionnaire.

3. Annex C: Questionnaire (in Bengali) & Interview Guide (Both English & Bengali)

Digital Microfinance

Survey Questionnaire in Bengali

প্রতিষ্ঠানের নামঃ

উত্তরদাতার নাম এবং পদবীঃ

দয়া করে আপনি আপনার প্রতিষ্ঠান সম্পর্কে নিম্নে প্রদত্ত প্রশ্নগুলোর উত্তর প্রদান করুন। আপনার লিখিতমতামতসমূহ সন্মিলিতভাবে অন্যান্য মতামতের সাথে থিসিস এর কোয়ালিটিটিভ ডাটার অংশ হিসেবে উপস্থাপন করা হবে। উল্লেখ্য যে, আপনি এবং আপনার প্রতিষ্ঠানের যদি কোন তথ্য প্রকাশে আপনার অপরাগতা থাকে, সেক্ষেত্রে আপনি আমাকে জানালে সমস্ত তথ্যের গোপনীয়তা রক্ষা করা হবে।

১। প্রতিষ্ঠানের তথ্যঃ

১.১	ব্রাঞ্চ সংখ্যাঃ	
১.২	প্রতিষ্ঠানের মোট কর্মী সংখ্যা	
১.৩	মোট ক্ষুদ্রঋণ গ্রহণকারী মেম্বার/ সুবিধাভোগী সংখ্যাঃ	
১.৪	মোট ক্ষুদ্রঋণ গ্রহণকারী সংখ্যা— মহিলাঃ	
১.৫	মোট ক্ষুদ্রঋণ গ্রহণকারী সংখ্যা — পুরুষঃ	
১.৬	ক্ষুদ্রঋণ প্রদানকারী কর্মী সংখ্যাঃ	
১.৭	ক্ষুদ্রঋণ প্রদানকারী মাঠকর্মীর ন্যূনতম শিক্ষাগত যোগ্যতাঃ	
১.৮	ক্ষুদ্রঋণ প্রদানকারী গ্রাম-ইউনিটন-উপজেলা-জেলা সংখ্যা	

২। ক্ষুদ্রঋণ কার্যক্রম বিবরণীঃ (এ সংক্রান্ত আপডেটেড তথ্যসমূহ যদি আপনার প্রতিষ্ঠানের ওয়েবসাইটে উল্লেখ করা থাকলে উত্তর/বর্ণনা করার প্রয়োজন নেই)

২.১। আপনি (প্রতিষ্ঠান) কী কী ক্ষুদ্রঋণ কার্যক্রম পরিচালনা করেন সেগুলো নিম্নে সংক্ষেপে উল্লেখ এবং বর্ণনা করুন।

২.২। আপনি (প্রতিষ্ঠান) কী কী সঞ্চয় কার্যক্রম পরিচালনা করেন সেগুলো নিম্নে সংক্ষেপে উল্লেখ এবং বর্ণনা করুন।

২.৩। আপনি (প্রতিষ্ঠান) কি বর্তমানে গ্রাম সংস্থা (ভিও/ Village Organisation) এর মাধ্যমে ক্ষুদ্রঋণ এর সঞ্চয় আর কিস্তি গ্রহণ করেন? ব্যবসা জনিত ক্ষুদ্রঋণ এর কিস্তি আর সঞ্চয় কি গ্রাহক আপনার ব্রাঞ্চে এসে কি লেনদেন করে থাকেন?

৩। মাইক্রোফাইন্যান্স অটোমেশনঃ

৩.১। আপনার প্রতিষ্ঠান কি ঋণ সংক্রান্ত যাবতীয় কার্যক্রম কোন অটোমেশন বা ডিজিটালভাবে করে থাকে?

উত্তর যদি হ্যাঁ হয়ে তাহলে দয়া করে নিম্নে প্রদত্ত প্রশ্নগুলোর উত্তর প্রদান করুনঃ	
৩.১.১	ঋণ প্রদান কিভাবে করা হয়?
৩.১.২	ঋণের টাকা কি গ্রাহকের কাছে মোবাইল মানির (বিকাশ/নগদ/অন্যান্য) মাধ্যমে প্রদান করা হয়ে থাকে (গ্রাহকের অনুমতি সাপেক্ষে) ?
৩.১.৩	এক্ষেত্রে কি প্রতিষ্ঠানকে কোন অতিরিক্ত চার্জ প্রদান করতে হয়, নাকি গ্রাহক পরিশোধ করে থাকেন?
৩.১.৪	কিস্তি এবং সঞ্চয় বর্তমানে কিভাবে সংগ্রহ করে থাকেন?
৩.১.৫	কিস্তি এবং সঞ্চয় টাকা কি গ্রাহকের কাছে মোবাইল মানির (বিকাশ/নগদ/অন্যান্য) মাধ্যমে প্রদান করা হয়ে থাকে (গ্রাহকের অনুমতি সাপেক্ষে)?

৩.১.৬	এক্ষেত্রে কি প্রতিষ্ঠানকে কোন অতিরিক্ত চার্জ প্রদান করতে হয়, নাকি গ্রাহক পরিশোধ করে থাকেন?	
৩.১.৭	। ঋণ প্রদান, কিস্তি এবং সঞ্চয় গ্রহণ করা ছাড়া অন্য কোন কার্যক্রম (মোবাইল/ট্যাব এর মাধ্যমে কালেকশন এর তথ্য গ্রহণ এবং নবায়ন, গ্রাহকের ঋণগত তথ্য সংরক্ষণ, ব্রাঞ্জসমূহের কার্যক্রম ইন্টারনেটের মাধ্যমে রিয়েলটাইম/ অন টাইমে পরিচলন এবং মনিটরিংকরণ, মাঠকর্মীর অবস্থান পর্যবেক্ষণ (জিপিএস ট্র্যাকিং), ইত্যাদি) কি অটোমেশন বা ডিজিটালভাবে করে থাকে? (হ্যাঁ/না)	

৩.২। আপনার প্রতিষ্ঠান কি ঋণ সংক্রান্ত যাবতীয় কার্যক্রম কোন অটোমেশন বা ডিজিটালভাবে করে থাকে?

উত্তর যদি না হয়ে তাহলে দয়া করে নিম্নে প্রদত্ত প্রশ্নগুলোর উত্তর প্রদান করুনঃ		
৩.২.১।	ডিজিটলাইজেসনে ভবিষ্যতে যাওয়ার কোন পরিকল্পনা হাতে আছে? (হ্যাঁ /না)	
৩.২.২।	কি কি কারণে ডিজিটলাইজেসনে এখনও আপনি (প্রতিষ্ঠান) যেতে পারেন নি? (কারণসমূহ সংক্ষেপে বর্ণনা করুন)	
	প্রাতিষ্ঠানিক অক্ষমতাঃ (ম্যানেজমেন্টের ভিশন/ইচ্ছা, কর্মীদের ডিজিটাল ডিভাইস প্রদান, নতুন ইনোভেশন এর প্রচার ইত্যাদি)	
	আর্থিক অক্ষমতাঃ (সার্ভিস প্রোভাইডারদের বিল/খরচ মেটানো, ডিজিটাল পোর্টাল ক্রয়, স্থাপন এবং রক্ষণাবেক্ষণ এর খরচ ইত্যাদি)	
	ফান্ড/ ডোনার ফান্ড ক্রাইসিসঃ (আলাদা কোন ফান্ড কিনবা ডোনার দের নিকট থেকে কোন প্রজেক্ট ফান্ড পাওয়া যাবে কি না ইত্যাদি)	
	কর্মী দক্ষতা এবং প্রশিক্ষণ অক্ষমতাঃ (দক্ষ কর্মীর অভাব ,কর্মীদের ডিজিটাল অক্ষমতা এবং অগ্রহণযোগ্যতা, প্রতিষ্ঠানের কর্মীদের ডিজিটাল ট্রেনিং দেওয়া র অক্ষমতা, ইত্যাদি)	
	গ্রাহকদের কম চাহিদাঃ	

৪। ব্যক্তিগত মতামতঃ মতামতঃ

৪.১।	বর্তমান প্রেক্ষাপটে মাইক্রোফাইন্যান্স কিংবা ক্ষুদ্র অর্থায়নের ডিজিটাইলাইজেশন করা কি জরুরী?	
৪.২।	মাইক্রোফাইন্যান্সের ডিজিটাইলাইজেশন করণ নিয়ে MRA এর কি কি করণীয় আছে?	
৪.৩।	আপনার প্রতিষ্ঠানের সম-সাময়িক অন্যান্য ক্ষুদ্রঋণ প্রতিষ্ঠানের মাইক্রোফাইন্যান্সের ডিজিটাইলাইজেশন করা নিয়ে কিরূপ মত ধারণ করে? তারাও কি মাইক্রোফাইন্যান্সের ডিজিটাইলাইজেশন চায়?	
৪.৪।	আপনার যদি এই পুরো বিষয়টির উপরে সামগ্রিকভাবে কোন মতামত থাকে তাহলে সেটি উল্লেখ করুন।	
৪.৫।	বিবিধ	

আপনি এবং আপনার প্রতিষ্ঠানকে আমার এই গবেষণামূলক থিসিস এর বিষয়ে মূল্যবান মতামত প্রদান করার জন্য আন্তরিকভাবে ধন্যবাদ।

বিনীত

আকিব মোঃ সাদমান বারী
ইন্টারন্যাশনাল ডেভেলপমেন্ট এন্ড ম্যানেজমেন্ট,
লুন্ড ইউনিভার্সিটি, সুইডেন।

Digital Microfinance
(Interview Guide – English)

- Capacity of MFIs
 - a. **Willingness** – To what extent the MFIs show their intentions to bring digitalization in their services to address financial inclusion?
 - b. **Infrastructure & Fund** – Are they capable of initiating or transforming their process into digitalization?
 - c. **Trained workforce** – How skillful are their field staff to work as a change agent for their clients and bring them under the digital inclusiveness? How are the MFIs preparing their field staff for such initiatives?
 - d. **Acceptance** – To what extent you think that the field workforce accepts such initiatives taken by their organizations? Do they consider it a burden or pressure to increase their portfolio and risk losing their job? Do you think that the general workforce is yet ready to be transformed into the digitalization process in the Bangladeshi context?
- Policies
 - a. **MRA** – Does MRA have any visible intention to amplify the digitalization and / or digital financial inclusion?
 - b. **Bangladesh Bank** – How Bangladesh bank is viewing the services and relevant charges provided by DFS providers? Any initiative to make them more MFIs and Client friendly in a balanced way?
 - c. **DFS Providers** – Are DFS providers yet capable enough to be the bridge between Digital Microfinance & Clients?
- Clients Perspective:
 - a. **Gender** – Who is more open to accepting such an initiative? If the ratio is leaning towards man, then what is the reason behind such imbalance?
 - b. **Empowerment**- Do the clients feel empowered, mainly if a woman client usually uses the services (paying the installment) or relies on her husband to do them? What is the rationale behind the second statement?
 - c. **Financial education** – What is your experience regarding clients' financial education? Are they still lacking behind, or is it time to transform them more towards digital literacy?
 - d. **Trustworthiness**- Do clients (regardless of gender) take such initiatives positively or take a more extended period or observe their neighbors so that they can decide on adoption/rejection of the service? Similarly, how do you observe their trustworthiness with the service providers (mobile banking agents)? Moreover, what can MFIs do or have they done to make their client participating in their initiatives?
 - e. **Benefits**- From your observation, do clients take such initiative as a beneficial instrument, or are they more comfortable with the traditional system? How do you think of their approach towards it?

Others

Digital Microfinance

Follow Up Survey- Questionnaire and Interview Guide (Bengali)

আপনার প্রতিষ্ঠান অটোমেশন ছাড়া অন্যান্য ডিজিটাল সেবা প্রদানের ক্ষেত্রে বর্তমান পর্যায়ে নিম্নে বর্ণিত কোন কোন সমস্যা গুলোর সম্মুখীন হচ্ছে? নিম্নে বর্ণিত কোন সমস্যার সাথে আপনি একমত হলে দয়া করে আপনার প্রতিষ্ঠান ভিত্তিক সমস্যাটির ব্যাপারে সংক্ষেপে আপনার মতামত প্রদান করুন,

১.১। ভিশন / ইচ্ছা: আপনার প্রতিষ্ঠানের ম্যানেজমেন্টের অটোমেশন এর পরের ধাপ তথা গ্রাহকদেরকে ডিজিটাল সেবা প্রদান করার ব্যাপারে কি নিকটবর্তী কোন ভিশন বা প্রকল্প প্রক্রিয়াধীন আছে?

১.২। আর্থিক অক্ষমতা: আপনার প্রতিষ্ঠানের অটোমেশন এর পরের ধাপ তথা গ্রাহকদেরকে ডিজিটাল সেবা প্রদান করার কি আর্থিক সক্ষমতা যেমন মোবাইল মানি সার্ভিস প্রোভাইডারদের বিল/খরচ মেটানো, ডিজিটাল পোর্টাল ত্রয়, স্থাপন এবং রক্ষণাবেক্ষণ এর খরচ, কর্মীদের কে ডিজিটাল ডিভাইস প্রদান করা, ইত্যাদি খরচ বহন করার সক্ষমতা আছে?

১.৩। ডোনার / ফান্ড নির্ভরতা: আপনার প্রতিষ্ঠান অটোমেশন এর পরের ধাপ তথা গ্রাহকদেরকে ডিজিটাল সেবা প্রদান করার জন্য কি ডোনার কিংবা বাহ্যিক কোন ফান্ডের উপর নির্ভরশীল? অথবা এখন পর্যন্ত কি আপনি এধরনের কোন উদ্যোগের প্রস্তাব পেয়েছেন? এ ব্যাপারে দয়া করে আপনার মতামত প্রদান করুন।

১.৪। কর্মী দক্ষতা এবং প্রশিক্ষণ অক্ষমতা: আপনার প্রতিষ্ঠানে অটোমেশন এর পরের ধাপ তথা গ্রাহকদেরকে ডিজিটাল সেবা প্রদান করার জন্য কি দক্ষ কর্মীর অভাব রয়েছে কিংবা বর্তমান কর্মীদের এ ধরনের সেবা প্রদানের অনীহা বা অগ্রহনযোগ্যতা কি লক্ষ্য করা যায়? প্রতিষ্ঠানের কর্মীদের ডিজিটাল ট্রেইনিং দেওয়ার ব্যাপারে কোন প্রকল্প কি রয়েছে?

১.৫। গ্রাহকদের চাহিদা: আপনার প্রতিষ্ঠানে অটোমেশন এর পরের ধাপ তথা গ্রাহকদেরকে ডিজিটাল সেবা গ্রহণ করার ব্যাপারে গ্রাহকদের চাহিদা কেমন? গ্রাহকরা কি এটাকে বাড়তি কোন ঝামেলা কিংবা খরচ বেশি হবার ব্যাপারে উদ্বেগ প্রকাশ করে?

কোভিড-১৯ চলাকালীন সময়ে গ্রাহকদেরকে ডিজিটাল সেবা প্রদান করার ব্যাপারে আপনার অভিজ্ঞতা কি?

আপনি এবং আপনার প্রতিষ্ঠানকে আমার এই গবেষণামূলক থিসিস এর বিষয়ে মূল্যবান মতামত প্রদান করার জন্য আন্তরিকভাবে ধন্যবাদ।

বিনীত

আকিব মোঃ সাদমান বারী

ইন্টারন্যাশনাল ডেভেলপমেন্ট এন্ড ম্যানেজমেন্ট, লুড ইউনিভার্সিটি, সুইডেন।

4. Annex D: Consent / NDA form

NON-DISCLOSURE AGREEMENT

This Agreement is entered into as of the 25-03-2021, Between Mr. **Aquib Sadman Bari (Interviewer)**, master's student at M.Sc in International Development & Management in Lund University, and Mr. / Ms. **XXXX (Interviewee)**, of **YYYY** institute/ organization regarding the student thesis on “**Addressing Organisational Challenges Towards Facilitating Digital Financial Inclusion In The Microfinance Sector Of Bangladesh**”.

I, **Aquib Sadman Bari**, hereby confirm that,

- Any information regarding the thesis topic received from Interviewee and **YYYY** institute/organization will be entirely used for thesis and study purposes. The confidentiality of the information will be maintained throughout the thesis process, and thus no information will be shared with any other third parties.
- Data that are available to the public will be used if needed.
- The operational experience of the Interviewee will be discussed during the interview to understand the general challenges. Please note that the thesis aims to find challenges on general background, and it is not a comparative analysis. Therefore, information received from the participants/interviewees is entirely for the analysis section.
- All the ethically sensitive information (if any) will be re-written in an anonymous approach and shared with the Interviewee (if any) before the submission of the thesis.
- The Interviewee has complete freedom to decide to which degree he/she wants information to be shared. Any information that he/she may consider as vulnerable can deny/refuse to provide.
- The entire interview session will be video recorded on Zoom only for transcribing purposes, and only the Interviewer will have access to it.
- The thesis student has the full responsibility to maintain confidentiality.

Interviewer's Signature _____ Date:

Print Name: **AQUIB SADMAN BARI**

Interviewee's Signature _____ Date:

Print Name _____