CHAPTER 7

Major Findings and Suggestive Framework

7.1 Introduction

This chapter deals with presenting the major findings of the study with regard to the demand and supply side. The findings in terms of savings, deposits, access, remittances, motives in opening bank accounts/problems faced, factors affecting sustainability in the use of bank accounts and borrowings are presented in section 7.2. The findings in terms of awareness and usage of FinTech services, factors influencing the adoption/non-adoption of FinTech, which was determined taking into account the constructs from the TAM model and other relevant constructs from the literature and the problems faced in using FinTech services are presented in section 7.3. In section 7.5, the factors identified as deterrents to the delivery of FinTech services for promoting financial inclusion in Assam are discussed. Section 7.6 deals with bringing out a suggestive framework in furtherance of sustainability in financial inclusion with reference to Assam.

7.2 Major Findings: Financial Inclusion

7.2.1 Savings, Deposits and Access

1. Majority of the respondents transact with only one bank account, besides only 12.4 percent of respondents have more than two accounts. Furthermore, 66 percent respondents have been using their bank accounts for a relatively long period, however, 3 percent of respondents have recently started using a bank account (i.e., 1 year has passed since they opened a bank account).

2. Majority of the households (53.7 percent) have 2-3 major members with a bank account. Contrary to this, in a majority of the households (64.6 percent) none of the minor members owned a bank account, and only 11.5 percent of households have 2-3 minor members with a bank account.

3. A considerable number of respondents have not taken assistance from others in opening their bank accounts. Nonetheless, among the respondents (17 percent) were assisted by bank officials, relatives, friends, neighbours, business correspondents and village panchayat officials in opening a bank account, the occupation of most of them were agriculturists (34.3 percent) and daily wage earners (42.9 percent).

4. Most of the respondents receive Direct Benefit Transfers under different subsidy schemes. Besides, it is worth noting that 1 percent of respondents in the urban areas have repudiated their LPG subsidy under the give up LPG subsidy initiative of the Government.

5. In terms of fixed deposit accounts, the picture is particularly grim in rural areas (29.9 percent) as compared to urban areas (72.6 percent). Excepting this, most of the respondents owning a fixed deposit account are investing their savings for a relatively long period i.e., above 6 years and the amount invested by most of the respondents (53 percent) is above Rs. 20,000. The reason behind this is as more than 30 percent of respondents of the study are businessmen/traders, self-employed professionals and Government employees, thus, the deposited amount in the fixed deposit account by the majority of the respondents is above Rs. 20,000. Besides, 6 percent of respondents have a fixed deposit between Rs. 5001 – Rs. 10,000.

6. As the majority of respondents in the study are from rural areas and it was observed during the survey that the majority of household heads in rural areas work in their respective villages. Consequently, a small proportion of respondents in the survey transferred money to their households. Among the respondents who transfer money to their family, the majority of the respondents prefer to transfer money through digital mode (63.5 percent) followed by bank-to-bank transfer (31 percent). In addition, even though the number is small but it is noteworthy that 4.1 percent of respondents prefer to pay the money by cash and 1.4 percent of respondents give the money to someone else known to them to pay on their behalf. The relation between the mode of money transfer/receipt and area of residence has brought to notice that the majority of respondents in urban areas than in rural areas transfer money to their family members through digital mode.

7. Majority of the respondents cited the distance of bank branches as an impediment to their frequent use of formal financial services. Taking into account the cumulative figures, 39 percent of respondents cited that the distance of bank branches is between 6 kilometres and more than 9 kilometres, which appears as a barrier to accessing banking services. It is also evident from the crosstab analysis between distance and area of residence that compared to urban areas, bank branches in rural areas are situated at a greater distance and more than a quarter of respondents in the rural areas have to travel greater than 9 kms to avail their banking services, which is more than the reasonable distance of 5 kms.

8. MFI membership has been found more among females. In terms of savings kept by the respondents, 80 percent keep their surplus in formal sources. Conversely, 20 percent of respondents save their surplus in informal sources i.e., ROSCA, friends and relatives. The preference for future financial security followed by safety serves as a catalyst to save in a formal financial institution. Besides, the rationale behind the respondents who save in informal sources includes receipt of finance during uncertainty, suggestion received from people in their locality to save in informal sources, saving relatively less amount of money i.e., a set amount to be paid in weekly or monthly basis and no requirement to stand in a queue. Moreover, unacquaintance with banking procedures and shyness due to financial illiteracy are also crucial grounds due to which some of the respondents opt to save in informal sources.

9. Majority of the respondents receive finance from friends/relatives and ROSCA during emergencies. Even though a significant portion of respondents was able to secure financing through more conventional channels in order to meet their plan requirement, receiving finance via informal sources such as ROSCA and through friends/relatives is also observed among a considerable portion of respondents.

10. Majority of the respondents (71 percent) own an insurance policy. In addition, by using a crosstab between insurance policy owned and occupation, it is found that the majority of the businessmen/traders, self-employed professionals and Government employees own an insurance policy as compared to only 55.4 percent agriculturists and 43.9 percent daily wage earners. Among the respondents who own an insurance policy, it is found that the majority of the respondents have a life insurance policy (34 percent), a motor insurance policy (29 percent) followed by health insurance (27 percent). Besides, the holders of home protection insurance, crop insurance and livestock insurance are very few. While determining the number of respondents' family members with life and health insurance policies, only a few respondents have their entire family insured with life insurance and most of the prime earner of the households have life insurance policies for themselves and not the other members of the family. In addition, it has been observed that a significant portion of respondents values other types of insurance more than health insurance, and that even among those who do have health insurance, just two family members are typically insured.

11. It has been found that 38 percent of respondents are insured under an insurance policy sponsored by the Government, among them majority are insured under Atal Amrit Yojana and Ayushmaan Bharat Yojana. Even though the respondents were enrolled under the scheme but it was found during the survey that many were not aware of the benefits provided under the scheme. Furthermore, among the respondents who do not have an insurance policy, most of the respondents cited unawareness and unaffordability as the prime reasons for not owning an insurance policy. A little less than half of the respondents who do not have any insurance policy consider insurance as a useless expenditure.

7.2.2 Factors Affecting Sustainability in Using Bank Accounts

1. The prime motive behind most of the respondents opening a bank account is to receive remittances and attain financial stability by improving thriftiness. However, the intent behind 12.4 percent and 16.1 percent of respondents to open an account in a formal financial institution is to only receive direct benefit transfer and use of bank account for documentation purposes.

2. While analysing the constraints faced in maintaining an account in a formal financial institution, it has been found that the issues faced by the majority of the respondents are inconvenience in availing credit followed by bank charges and higher transaction costs. Furthermore, the opportunity cost of lost wages and the transportation cost of coming to the bank are also acting as a barrier to the utilisation of bank accounts by the respondents.

3. While determining the sustainability in the use of bank accounts by the respondents it has been revealed that the majority of the respondents (81.5 percent) are making sustainable use of their bank account i.e., are saving /transacting using the bank account within a period of 1 year. Contrary to this, the accounts of 8.7 percent of respondents are marginally unsustainable (inactive) and of 9.8 percent respondents is unsustainable i.e., the account has become dormant.

4. The results of the Chi-square test revealed that demographic characteristics such as occupation, educational qualification, and age have a very strong association with the sustainable use of bank accounts. Crosstab results showed that in terms of occupational background, agriculturists and daily wage earners have the highest number of unsustainable (dormant) bank accounts. A little less than half of the illiterates and more than $1/4^{th}$ of the respondents with primary-level education have dormant bank accounts.

The account of cent percent of respondents in urban areas are sustainable in contrast to 78.6 percent in rural areas, the test results also revealed that there exists a strong association between the area of residence and sustainability in the use of bank accounts. Furthermore, gender and sustainable use of bank accounts showed significant results but shared a weak association.

5. Significant difference is observed to exist between motives in opening a bank account and the period of savings measured as sustainable, marginally unsustainable and unsustainable. The ANOVA test also revealed that the motive to open a bank account only to receive Direct Benefit Transfer (mean values of sustainable = 1.15, marginally unsustainable = 4.04, unsustainable = 4.46) and use of bank account for documentation purposes (mean values of sustainable = 2, marginally unsustainable = 4.42, unsustainable = 4.50) is highest among the unsustainable and marginally unsustainable groups.

6. Significant difference exist between constraints faced in maintaining accounts in a formal financial institution and sustainable use of bank accounts. The mean values of one-way ANOVA showed that the problems of the opportunity cost of lost wages, transportation cost, the distance of bank branches, higher transaction cost, bank charges and lukewarm response from bank employees were the reasons for the unsustainable use of bank accounts.

7. Majority of the respondents consider savings in banks to be the most convenient. However, saving in informal sources such as ROSCA and livestock was regarded as best suited to the needs of 8.3 percent and 9.4 percent of respondents respectively. Additionally, all the respondents i.e., 100 percent would continue using their bank accounts. When asked regarding the period for which they would continue using their bank account, the majority of the respondents are of the opinion that they would continue using their account always for a better financial future. Besides, even though the number is small but 11.4 percent and 11.7 percent of respondents prefer to continue using their account until they get the gas subsidy and till a specific scheme-related period.

7.2.3 Borrowing from Formal/Informal Sources

The analysis of the borrowing habits of the respondents revealed that the majority of the respondents have borrowed or taken a loan. A large section of the respondents (51 percent) borrowed from informal sources such as friends/relatives with or without interest, ROSCA

and moneylenders, besides, 49 percent borrowed from formal sources including banks, small finance banks, formal self-help groups and MFIs. The prime reasons to borrow from informal sources include the non-requirement to provide collateral security, weekly/fortnightly repayments, provision to borrow a relatively small amount of money, and availability of loans with less documentation and without any burdensome process. Additionally, lack of credit score is also an important reason for respondents' borrowing from informal sources. Besides, the reasons cited by most of the respondents to borrow from banks/small finance banks are that banks have a standardised procedure, trust in banks, affordable interest rates and higher credit scores to obtain loans from banks. Furthermore, independent samples t-test group statistic results showed that mean scores for loan taken from banks/small finance banks is higher in the case of urban areas and the test result is significant at 0.05 level of significance thereby revealing that significant difference exists in terms of loan taken from banks and area of residence. Thus, borrowing from ROSCA/informal self-help groups and friends/relatives is much more popular in rural areas than in urban areas.

7.3 Major Findings: FinTech

7.3.1 Awareness and Usage of FinTech Services

1. Majority of the respondents are aware of PayTm (83 percent) and Google Pay (80 percent) followed by the UPI-based BHIM app (38 percent). Only 13 percent of respondents are aware of Lendingkart and the awareness regarding other types of lending-based app is particularly grim. Besides, a little less than half of the respondents are aware of policy bazaar (an insurtech app) and only a few respondents are cognizant of other insurtech apps. In the mobile baking space, most of the respondents are aware of State Bank of India's Yono app (45 percent) followed by Axis mobile (36 percent) and HDFC bank mobile banking app (34 percent). The awareness regarding internet banking (71 percent) and debit/ATM cards (100 percent) is satisfactory.
2. Slightly fewer than 3/4th of the respondents (69.3 percent) use FinTech services. The usage of UPI-based FinTech services such as Google Pay (42 percent), Phonepe (23 percent), PayTm (18 percent) and BHIM (14 percent) is found among the majority of the respondents. A large number of the respondents use internet banking (49 percent) and debit cards (100 percent). In terms of mobile banking, Yono app is the most used among the respondents (11 percent) followed by the

iMobile app (7 percent). Besides, the use of lending and insurtech-based FinTech services is remarkably low.

3. Majority of the respondents were utilising FinTech services prior to the pandemic. It is worth noting that 3.8 percent of respondents resorted to the use of FinTech services amidst the pandemic. Furthermore, the frequency of use of FinTech services in the midst of the pandemic increased among 64.7 percent of respondents. Thus, the pandemic hastened the use of digital financial services among the respondents.
4. Majority of the respondents use FinTech services at least once a month. Considering the cumulative figures, it is observed that a significant percentage of respondents are high-end users (76.2 percent) of FinTech services i.e., are using FinTech service at least once a week, bi-weekly once or at least once a month.
5. While determining the association between socio-demographic characteristics and usage of FinTech services, it is found that age, occupation, educational qualification and social group share a very strong association with the usage of FinTech services. In terms of the social group, FinTech service is found to be mostly used by the respondents belonging to the general category as compared to the respondents from scheduled tribe, scheduled caste and other backward classes. Significant difference in usage of FinTech services is also observed between gender and area of residence (strong association). The majority of the respondents dwelling in urban areas use FinTech services as compared to the respondents in rural areas. Furthermore, a significant and moderate association between religion and the usage of FinTech services is observed.
6. The purpose for which the majority of the respondents use FinTech services is to transfer money, recharge from telecom service providers, shop in stores and purchase products from e-commerce companies. The use of technology-based financial services to purchase flight/railway/bus tickets and payment of utility bills are found only among 35.2 percent and 35 percent of respondents respectively. Payment of school/college fees through FinTech-based applications, is found to be very low (15.2 percent). Furthermore, 35.2 percent of respondents use debit cards to withdraw cash and not to make an online purchase or transfer through PoS machines.

7.3.2 Factors influencing the adoption/non-adoption of FinTech services in Assam

1. Perceived Usefulness, Trust, Govt. support and Social Influence have a significant positive influence on the attitude towards FinTech services. Thus, the efficiency provided by technology-based financial services in performing banking transactions/business operations, and the trust towards such services that the personal information is secured influences the respondents' attitude towards digital financial services. In addition, the support from the Govt. pertaining to the growth of payment infrastructure, the launch of the Unified Payment Interface, Aadhaar Enabled Payment System, Digital India Initiative and network externalities such as influence from friends, relatives, etc., positively affect the attitude towards FinTech services. Besides, Perceived risk such as proneness to cyber-attacks, loss of financial and personal information and technical glitches while performing a transaction, negatively affects the attitude towards FinTech services. This indicates that the incidences of cyber-frauds have generated a negative feeling among some of the respondents towards digital financial services.
2. Consistent with TAM, it is found that Perceived Ease of Use has a significant positive effect on Perceived Usefulness i.e., user-friendliness of FinTech-based applications resulted in increased usefulness among the respondents (increase in benefits felt). Besides, Perceived Ease of Use positively influences Behavioural Intention to use FinTech services but has no influence on the Attitude, which means that the ease of using digital financial services results in the respondents' intention to use such services and indirectly affects actual usage through Behavioural Intention.
3. Self-efficacy is an important predictor of Perceived Ease of Use but does not have any significant influence on the Attitude and Intention to use FinTech services. The effect of Self-efficacy has been narrowed down by the necessity arising in using digital financial services amidst the pandemic. Many respondents especially Generation X and Baby Boomers look for assistance from their family members and other known persons to perform transactions digitally.
4. Government support plays a salient role in fostering confidence and escalation in trust towards FinTech services. Convenience such as the time-saving, easy and fast way to make payments also have a positive effect on trust towards FinTech services. Besides, Perceived risk has negative effect on trust, thus, sturdy

encryption techniques, proactive navigation of risks through cyber drills and digital literacy are required to build up the respondents' trust towards digital financial services. Furthermore, it is worth mentioning that the resilience in performing financial transactions, Government support and Convenience has narrowed down the effect of Offers such as discounts and cashback on trust towards FinTech services.

5. Perceived Usefulness, Perceived Ease of Use, Social Influence and Attitude are important determinants of Behavioural Intention to use FinTech services and Attitude has the highest level of influence on Behavioural Intention. Congruous to TAM, Behavioural Intention has a significant direct effect on actual usage of FinTech services i.e., all other variables indirectly influence actual usage through Behavioural Intention.

7.3.3 Problems Faced in the Use of FinTech Services

1. Connectivity is posing constraints in the impeccable use of FinTech services. The majority of the respondents face the problem of poor internet speed (32.1 percent) and transaction failure (25.9 percent). It is pivotal to note that 15.2 percent of respondents have faced cyber-vulnerabilities such as fraudulent calls, fake messages and malicious mails, which also resulted in financial loss among some of the respondents. These type of fraudulent activities lowers trust and generates a feeling of worry or unease in using FinTech services. This makes it imperative to combat cyber vulnerabilities together with upgrading the customers' comprehension of how they can save themselves from such illicit activities.
2. Independent samples t-test showed that there exist a significant difference between the issues of poor speed of internet, unawareness, transaction failure, the conception of cumbersome navigation and area of residence. The above-stated problems are faced more in rural areas as compared to urban areas. Thus, the issues of cyber-vulnerabilities, unawareness regarding technology-based financial services and connectivity require attention, especially in rural areas. Furthermore, problems faced in using FinTech services does not significantly differ across gender.

3. ANOVA test between problems faced in using FinTech services and age category revealed that significant differences in terms of issue of high service charges, unawareness and cumbersome navigation process exist between different age groups. Post hoc analysis revealed that the respondents from the age category above 50 years consider the service charges to be high. The reason is, respondents belonging to the age group 50 years and above are found to mostly use debit cards, which involve certain charges and most of them do not use UPI-based FinTech applications. Mostly the respondents between the age bracket 40-50 years and above 50 years face the problem of unawareness, which necessitates the furtherance of digital literacy thereby reducing the digital divide.
4. Agriculturists and daily wage earners mostly face the problem of unawareness in using FinTech services. Furthermore, most Government, private employees and businessmen/traders face the problem of transaction failure. Since such respondents are active users of technology-based financial services, transaction failure due to technical glitches and network issues can negate the digital transaction experience among the users.

7.4 Additional Observations:

i. Multiple sources of account: It has been observed that there were some respondents who opened their account to receive a job card from the gaon panchayat, however, their accounts are lying dormant. Many people in rural areas became involved in new ROSCA groups even though they already have a bank account. Preference to save money in ROSCA is due to the non-requirement to travel to their bank branches and lose daily wages, saving in informal groups in small weekly/monthly instalments of Rs. 50 to Rs. 100, loan facility and convenience of money collected from the residence.

ii. Financial literacy: Lack of financial literacy has been observed especially in the tea tribe-populated villages. Many respondents belonging to the tea tribe do not borrow from the MFIs but instead borrow from friends/relatives/moneylenders. It is staggering to note that the defaulter in paying the loan within the stipulated period would have to return double the principal amount of the loan. Financial and digital literacy campaigns were also very few in such areas and even the respondents do not turn up to such literacy campaigns because of disinterest and loss of wages.

On the positive aspect, it has been observed that the SHG Bank Linkage Programme has empowered the women members of the family to improve their savings habits. Additionally, Bandhan Bank has taken initiative for ameliorating digital literacy among women. In the 12 villages under Tamarhat Gaon Panchayat (Dhubri district), 25 educators (termed as 'Financial Literacy Educators' as informed by one of the educators during the survey) were trained by the bank officials to further upskill other women in the villages (only those who possess a smartphone) regarding Pan-Aadhaar linkage, digital transaction, etc.

iii) Agent issues: Instances of commission charged by the business correspondents for filling the withdrawal form and deposit form, especially in rural areas was also been observed. Furthermore, delay in the withdrawal of money from the banking agents by 2-3 days has caused discommode among the respondents in a few areas. When enquired the Common Service Providers/bank mitra/business correspondent of that area regarding the issue, the reason cited was the failure of the bank's server and liquidity crunch, which caused the limitation in the timely provision of the services.

iv) Non-utilisation of services offered in post offices: In a few areas it has been observed that the respondents refrain from using the banking service provided by the post office in their locality, as many locals did not receive their money after the maturity of their deposit account. This led them to travel to town or other banking access points for conducting their financial transactions. However, they use the service of post office only for the delivery of documents such as Aadhaar, pan cards and for other documentation works.

v) Access to ATMs: It has been observed from the field study that ATMs in a few areas were located approximately 28 kms away, however, access points such as Digital Seva Kendra (Common Service Centres) and business correspondents were available. Moreover, a commission of Rs. 100 charged by business correspondents to withdraw a higher amount (above Rs. 10000 as informed by the respondents) has been found.

vi) Unawareness about USSD and UPI123: Respondents in rural areas who do not possess a smartphone mostly use ATM/debit cards and the awareness about feature phone-based payment services like Unstructured Supplementary Service Data (USSD), UPI 123Pay is low. On a positive note, some respondents in rural areas

pay their electricity bills in online mode through assistance from Digital Seva Kendra (Common Service Centres).

vii) Connectivity: The connectivity issue causes an ordeal experience especially in rural areas while conducting digital financial transactions. In a few areas, it was found that the network bandwidth is very low after the evening hours, which creates delays in performing digital financial transactions. Furthermore, the issue of poor connectivity in terms of the network is found especially in the rural areas of all the districts. Unresolved issues (such as the amount not credited back) in terms of digital transactions due to technical glitches/network issues created a feeling of unease in using digital financial services among some of the respondents.

viii) Cyber vulnerability: Both urban and rural respondents received fake messages relating to cyber vulnerability, malicious links and fraud calls. Incidents of financial loss by fraud calls claiming to be from the bank or telecom service provider resulted in a negative perception of FinTech services mostly among low-income and less tech-savvy people.

7.5 Supply-side Factors Identified After Interviewing the Officials:

Below are the factors identified as the deterrent factors affecting the supply of FinTech services for fostering financial inclusion in Assam. These include

7.5.1 Low Aadhaar Penetration

User involvement with digital transactions has been restricted and frequently poor due to low Aadhaar prevalence in the state. As a result, where the majority of the Government subsidy payments are handled by India Post Payment Bank in other states, Assam and other North Eastern states have a smaller ratio of Government subsidy payments. Additionally, even though there was no impact on regional demand for products/services but the operational performance was affected during Covid because of lack of acceptance infrastructure.

7.5.2 Lack of (Cash-in Cash-out) CICO Infrastructure

Even though the service providers have taken initiatives by partnering with white-label ATM operators and the use of mobile van facilities to augment the ATM infrastructure in the state. However, the skimpy performance in terms of acceptance infrastructure significantly affects the seamless functioning of the banking operations in the state. The

bank incurs costs when a customer uses a deposit slip, stamp, cheque leaf, etc. This shows the officials' concern for minimisation of queue and promoting digital and seamless banking experiences for customers. Incidences of customer footfall in branches only to check account balance, which otherwise could easily be done from the comfort of home shows the limited uptake of digital financial services. Furthermore, the low agent network also limits the ability of the customers to convert cash to digital mode of value and vice-versa thereby raising the cost of switching to digital payments, particularly for rural areas of Assam.

7.5.3 Lack of Digital and Financial Literacy Programmes

It has been observed that as compared to public sector banks the literacy programmes conducted by payment banks in the state are minuscule. Even though initiatives were taken but issues such as low turn-up ratio, lack of funding and monitoring led to the failure of such drives. Additionally, it was also brought to notice that compared to pre-covid levels, the large-scale financial and digital literacy programmes have decreased since the start of the pandemic.

7.5.4 Low Awareness Regarding Dispute Resolution Process

Based on the officials' responses to the implementation of Online Dispute Resolution and Digital Ombudsman Scheme questions, all of the interviewees were of the view that low awareness regarding the dispute resolution process among customers particularly in rural areas hampers the continued usage of the services. Even though constant efforts are being made by the service providers but the hacking issue deters the use of technology-based financial products by the elderly and rural customers thereby affecting the growth rate of FinTech services in the region. As informed by the interviewees the use of debit cards is higher than that of other technology-based applications.

7.5.5 Connectivity

As the state of Assam, including the North Eastern region is geographically distinct from the rest of the country, the difficult terrain poses challenges for business correspondents especially in the states of Mizoram and Meghalaya in depositing cash collected to the branch and other banking functions. Furthermore, the supply of financial services ceases to be seamless due to problems with banking software, notably at the agent points. Furthermore, as informed by the suppliers of digital financial services, VSAT connections

are impacted by bad weather conditions and latency issues, network congestion, etc. which impedes the efficient delivery of financial services. The officials also showed concern that although 5G is expected to roll out in many regions of the country, the network speed in Assam as well as the other North Eastern states is extremely slow and many places even lack access to 4G connectivity, thereby making saturation of 4G mobile services necessary for the advancement of FinTech services in the area.

7.5.6 Risk

The interviewees were of the view that financial and security risks dissuade customers from the continued embracing of digital financial services. The officials believed that the regulatory approach for FinTech service providers (including FinTech start-ups) should remain status quo in order to reduce concerns regarding third-party transactions. Consumers find it difficult to trust FinTech-based services when transactions with third-party payment service providers are not addressed. As suggested by an official, third-party service providers should have outlets at several locations across the nation, where clients may cross-examine the problems that they are facing.

7.6 Achieving Sustainable Financial Inclusion Using FinTech – A Suggestive Framework

This section of the chapter deals with bringing out a suggestive framework in furtherance of sustainability in financial inclusion with reference to Assam. Based on the demand and supply side gap, a technology-based suggestive framework have been developed, which is based on three crucial elements such as foundation, pillars of digital financial inclusion and critical enablers dealing with the access, usage and quality of financial services considered as vital dimensions of financial inclusion.

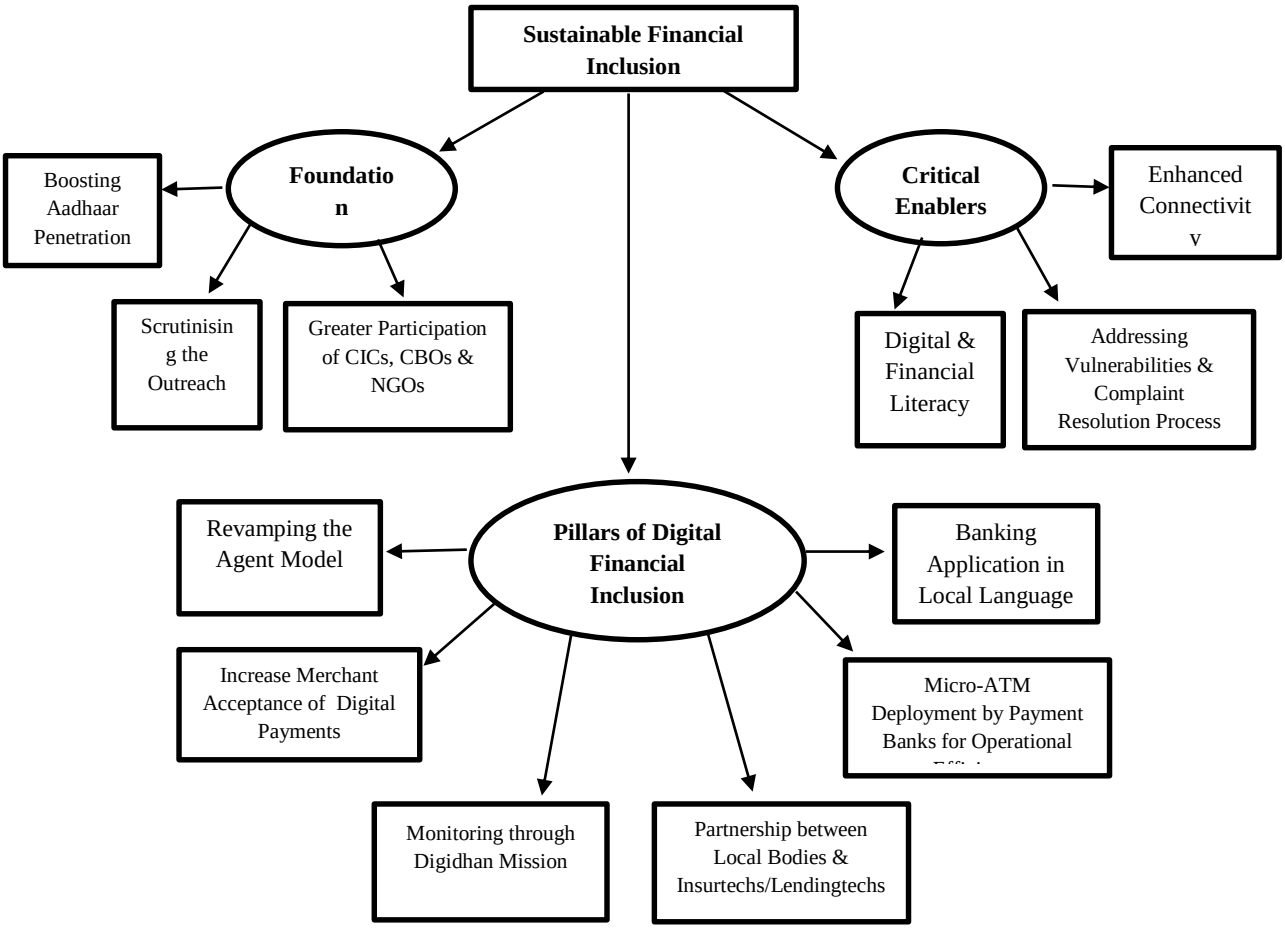

Figure 7.1: Technology-based Suggestive Framework for Sustainable Financial Inclusion

(A) Foundation

1. Boosting Aadhaar Penetration

Interviews with the service providers in the study brought to notice that even though the number of customers has increased throughout the years, the proportion of bank accounts linked to Aadhaar has remained relatively low. It has also been observed from the interview conducted with the service providers in the study that the low Aadhaar penetration and the linking of Aadhaar with bank account affect them in the seamless delivery of Government subsidy payments in the state as well as the region. As Aadhaar is being made mandatory for the majority of government programmes in an effort to combat corruption. Beneficiaries of a variety of government programmes are required to present their Aadhaar number in order to verify their identity. The majority of subsidies are deposited straight into the bank account of beneficiaries linked with an Aadhaar

number. However, the Aadhaar penetration in North East India is 72.06 percent, which is below the all-India level and linking of Aadhaar with bank account is about 64 percent (Ministry of Electronics & Information Technology, Government of India & Better Than Cash Alliance Report, 2022). In this regard, it is vital that the Government of Assam along with the Unique Identification Authority of India and RBI should aim at enhancing the Aadhaar penetration. Workshops can also be conducted on the state level focusing on the rural areas to enhance the credibility of Aadhaar and intensify its usage.

2. Scrutinizing the Outreach

To guarantee the effective execution of financial inclusion initiatives, the RBI and the Government of Assam should monitor the inactive agent network. Furthermore, as instances of commission charged by the agents for filling withdrawal, deposit forms in the rural areas and commission charged for withdrawing higher amount by the CSPs were found in the rural areas, such unscrupulous practices would discourage the unserved people from using banking services. There is a requirement of maintaining a database of the banking agents by the State Government and RBI with quarterly monitoring of their progress in imparting financial services together with providing an avenue for the customers in reporting the grievances for customer due diligence.

3. Greater Participation of Community Information Centres (CIC), Community-based Organisations (CBOs) and NGOs

It has been observed from the study that the accounts of 8.7 percent and 9.8 percent of respondents are marginally unsustainable (inactive) and unsustainable (dormant). In addition, savings in informal sources were quite prevalent in rural areas for receipt of finance during uncertainty, saving relatively less amount/a set amount paid on a weekly or monthly basis with unacquaintance with banking procedures and shyness caused by financial illiteracy being the grounds for saving in informal sources. In this regard, it would be recommended to choose local NGOs and MFIs to work in collaboration with banking agents because they have a greater awareness of the requirements of the people and can develop financial services and products for the unserved. Furthermore, CICs established in different blocks to provide IT facilities along with self-help groups, Community-based Organisations and NGOs may be used to work as banking agents by recognising them with ultra-small branches and also to set forth digital literacy skills among female-headed

households, elderly, social groups to equip them with digital innovation skills. This would provide a foundation for enabling digital financial inclusion in Assam.

(B) Pillars of Digital Financial Inclusion

1. Revamping the Agent Model

The model needs to be re-organised to give the banking agents more flexibility and their financial sustainability into account as instances of failure in banks' servers and liquidity crunch caused delays in the timely provisioning of banking services. As the penetration of Cash-in-Cash-out (CICO) agents are lower in the North Eastern region when juxtaposed with the national average (Ministry of Electronics & Information Technology, Government of India & Better Than Cash Alliance Report, 2022), there is high potential in onboarding merchants as CICO agents, which would serve as fore-runners in leading the way in digital financial inclusion. Small business owners such as kirana stores and stationery shops can function as local banking points with micro ATMs and Aadhar-enabled payment services. At such branchless banking points, bank customers can open a new account with debit card issuance and make deposits, withdrawals, and utility bill payments. This would present merchants with an opportunity to make extra income and lower the cost of travelling to financial institutions, especially for wage labourers.

2. Increase Merchant Acceptance of Digital Payments

The onset of the Covid-19 pandemic has augmented the inclination toward digital infrastructure. It has been observed from the study that the use of digital payments in stores is low. Less than half of the respondents i.e. 46.1 percent use UPI or banking cards for making payments in stores. A plausible reason for this would be the non-acceptance of digital modes of payment by merchants. The Government along with digital payment service providers may emphasise improving the value proposition of merchants with a particular focus on women merchants and less-organised retailers in rural areas in accepting digital payments. As there is only 189 Point of Sale (PoS) devices/100000 population in Assam (Ministry of Electronics & Information Technology, Government of India & Better Than Cash Alliance Report, 2022), this shows a huge avenue for onboarding merchants onto the digital payment ecosystem. However, as poor consumer demand, expected privacy and fraud concerns deter FinTech acceptance among merchants. The alliance between the Government, local bodies and payment service providers to

comprehend the merchants about the user interface, and incentive on onboarding thereby eliminating friction would lead to confidence among the merchants. Furthermore, increased merchant acceptance even in the far-flung and char areas could act as a vanguard in refining the agent model as stated in the above point, where the merchants as banking agents can serve the basic financial needs of the last mile population.

3. Monitoring through Digidhan Mission

Digidhan dashboard, which is a platform for reporting, tracking and analysing digital payment transactions taking place in the country as well as for enabling infrastructure relating to the deployment of mobile/physical PoS devices. The metrics tracked by the dashboard include growth in digital payment transactions, the volume of transactions in credit cards, debit cards, internet banking, mobile banking, Aadhaar Enabled Payment System (AEPS), BHIM, etc. Data relating to Point of Sale deployment (physical/mobile POS), BHIM Aadhaar pay POS, data on Aadhaar seeding and monthly growth in BHIM-UPI transactions are also provided by the dashboard. The dashboard compiles data from various sources such as banks, the National Payments Corporation of India, the Reserve Bank of India and Ministries/ Departments. However, there is no information on the geographic and socioeconomic disparities in the use of digital banking services. Thus, this portal can be used by the Ministry of Electronics and Information Technology (MeiTy) along with State Level Bankers' Committee (SLBC) to report data relating to progress under the acceptance infrastructure of the state, socio-economic segregation of data relating to digital payment adoption, frequency of digital onboarding in the state. This would aid in employing a data-driven action with an emphasis on focusing on the untapped areas by establishing measurable goals to be achieved by districts in the state on a quarterly basis (with SLBC being the monitoring agency in the state).

4. Partnership Between Local Bodies and Insurtechs/Lendingtechs

Even though the insurance penetration in Assam is improving but the data from the survey reveals that there is much room for improvement as unawareness and unaffordability is being cited as the prime reasons for not owing an insurance policy. In addition, life, health and crop insurance requires a much-needed boost among the agriculturists and daily wage earners. The National Health Stack developed by the policymakers, which aims at tapping the unserved insurance market can collaborate with insurtechs and local agencies in provisioning a wide array of insurance facilities with automated underwriting, speeding

up customer onboarding and filling of claims with convenience and remote access. Provision can be made by utilising the network of Accredited Social Health Activists (ASHA) workers [1]and gaon panchayat officials to organise fairs, especially in the rural areas for acquainting the people with digital insurance. Furthermore, technology-based channels with regard to insurance would aid in shrinking the distribution cost of life and non-life insurance policies.

In addition, lendingtechs can partner with regional rural banks, MFIs, which already have an on-ground presence in the state. This would assist the FinTech service providers to establish their presence in Assam and other states of the region with low capital investment for customer acquisition and aid in leveraging KYC details from the banks. Such collaboration would assist in meeting the working capital and other financial needs of small businesses, MSMEs and individuals thereby building credit history for the users, who previously relied on informal channels of finance. Lendingtechs can serve an indispensable role in expediting access and inclusion of SHGs by providing a level playing field in the NABARD's E-Shakti project for digitising SHGs. This would provide a data-driven initiative in building credibility of the data generated from SHGs, which could further be used for data analytics by banks, lendingtechs and credit bureaus to make the process of credit delivery well-organised.

5. Micro-ATM Deployment by Payment Banks for Operational Efficiency

It has been observed during the study that the ATMs in a few areas are located at a distance of 28 kms from the villages. Due to the poor overall ATM accessibility, the distribution of ATMs differs across rural and urban locations. Thus, due to reduced infrastructure costs and operational efficiency provided through regular mobile connectivity, micro-ATMs are more viable than conventional ones. Micro-ATMs can be quickly connected to a mobile device or laptop to deliver cash through retail outlets/agent points. The use of such services particularly in the rural areas would help in addressing the needs of customers for Cash-in-Cash-out services thereby establishing additional banking points together with filling the banking gap in Assam.

[1] The National Rural Health Mission has as one of its primary goals the recruitment and training of female health activist termed as Accredited Social Health Activists (ASHAs) to serve as community health advocates in each of the country's villages. The ASHA will be a trained interface between the community and the public health system.

6. Banking Application in Local Language

In order to attain sustainable progress in digital financial inclusion, bridging the digital divide and enhancing participation, especially across rural areas, Generation X, baby boomers and social groups become crucial. However, lack of ease of use and comprehension of the user interface can generate user friction in using the app, which can further lead to meagre usage of the service. For e.g., the Assamese language is supported in only a few apps such as Phonepe, BHIM, etc. Thus, FinTech service providers together with NPCI can develop an application in the local language of Assam enabling lesser-educated and rural masses to enhance access without assistance from others. The uncomplicated interface and understanding in the local language would ease deciphering the information provided and generate a sense of trust and efficacy in digital financial transactions amongst the last mile population.

(C) Critical Enablers

1. Digital and Financial Literacy

It has been observed from the interview with FinTech service providers that literacy programmes after the unprecedented Covid-19 pandemic have decreased in the state. Furthermore, lack of funding especially for banks, monitoring and minuscule involvement from the customers often result in the closure of literacy initiatives by the service providers. In this regard, banks can undertake a cluster-based approach to impart necessary financial and digital education in the sustainable use of bank accounts. Furthermore, banks can participate with gaon panchayats to train women from SHGs to impart digital and financial information to other individuals of the villages covered under the particular gaon panchayat on a monthly basis thereby creating an effect of network externalities. The bank may incentivise the educators for the service together with maintaining financial and digital literacy incentives for business facilitators[2], which would further boost their morale. Such literacy programmes may deal with issues such as the necessities of regular usage of bank accounts, onboarding on payment apps, money transfers, utility payments, etc.

[2] The Business Facilitator's duties consist of educating the unbanked about the benefits of banking products and helping the bank collect receivables, including bad debt.

2. Enhanced Connectivity

The field data collected during the study observed connectivity challenges faced by both the demand and supply side players in terms of poor speed of the internet causing a delay in financial transactions, unauthorised debit of the amount due to technical glitches, transaction failure, network congestion, lack of access to 4G connectivity in certain areas of the state. In addition, inconvenience caused due to a breakdown in banking software affects the impeccable delivery of financial services and causes a cessation in the adoption of FinTech services. The North Eastern region also faces greater network downtime i.e. three times more than metro cities and 50 percent slower internet speed than the national average (Ministry of Electronics & Information Technology, Government of India & Better Than Cash Alliance Report, 2022). According to the TRAI internet speed dashboard, the download speed of 4G technology in Assam for telecom service providers such as Airtel is 11.0 megabits per second (Mbps), Reliance Jio is 10.6 Mbps and Vi India is 10.8 Mbps respectively, which is much below the other Indian states such as Gujarat, Orissa, Maharashtra, Rajasthan, West Bengal and others (https://myspeed.trai.gov.in/). It has also been observed during the study that the network speed in rural areas drops significantly after the evening hours. With respect to the points above, the Telecom Regulatory Authority of India along with the Department of Telecom should come up with projects of increased spectrum deployment for commercial use, ease in spectrum sharing regulation and reformed base price for spectrum auctions in the region, which would assist the telecom operators in the smooth delivery of the services. Furthermore, the plan for rolling out 5G connectivity by the top telecom operators of the country warrants increased attention in the North East circle, which due to its difficult terrain lacks superior tele-connectivity infrastructure. The Department of Telecom should also relook at the progress of the BharatNet project meant to invigorate last-mile connectivity to 2,60,000 gaon panchayats of the country. The Department should identify the inactive gaon panchayat sites and revamp their operations by equipping them with the necessary infrastructure. Furthermore, the telecommunications department to not limit the functioning of telecom providers should take up the installation of telecom towers in unserved villages.

The research also revealed a lack of familiarity with the various digital payment methods available for less tech-savvy and last-mile sections. For this reason, it is important to

promote alternative payment methods like UPI123 Pay [3]and assisted UPI [4]among the less tech-savvy and feature phone consumers.

3. Addressing Vulnerabilities and Complaint Resolution Process

While the adoption of FinTech services is found to be significantly influenced by government support, however, on the flip side perceive risks such as susceptibility to cyber-attack, loss of personal and financial information act as deterrent factors in FinTech adoption. Furthermore, instances of malicious calls, mails were also found among the users of FinTech services. Thus, increasing knowledge about cyber threats related to digital payments, modernising encryption methods and taking proactive measures by the regulators such as monitoring cyber issues on a regular basis would aid in addressing cyber vulnerabilities. FinTech service providers to uphold the stability of the digital payment eco-system should regularly perform cyber drill activities to safeguard against Distributed Denial of Service (DDoS) attacks. The less-tech-savvy customers should be made aware of the redressal mechanisms initiated by the RBI. Here, FinTech service providers along with local Government departments can organise campaigns during the literacy programmes to acquaint individuals with the procedure for filing complaints under Online Dispute Resolution and Digital Ombudsman Scheme.

In addition, in case of failed transactions using a third-party payment application, the RBI in consultation with third-party payment service providers should aim at setting up redressal offices at least at the regional level.

[3] Unified Payments Interface (UPI) payment service i.e., UPI 123PAY, is available on feature phones and allow users to make immediate payments through a variety of channels, such as an interactive voice response number, using the app capabilities built into feature phones or a missed call.

[4] India Post Payment Bank (IPPB) has introduced Assisted UPI, allowing the customers to transact using UPI without need to download any UPI-based application or register with a debit card. Each customer is assigned a default Virtual Payment Address (VPA) id to enable them to transfer payments via the aided UPI platform, which can be executed at IPPB banking locations.