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Application of Information and Communications Technology in MFIs: Evidence from Bangladesh

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Abstract: This study aims to evaluate the utilization pattern of ICT services by Bangladeshi microfinance institutions (MFIs). In so doing, this exploratory study interviews the staff of 10 prominent MFIs to underscore the ICT usage pattern of the organizations. The questions focused on the usage pattern of seven aspects of digital services such as website, ATM, e-cards and mobile financial services (MFS), smartphone use, MIS, customized software for different departments, and electronic mail and file management system. The results reveal that all the organizations maintain websites and use smartphones for internal and external communications, while none incorporated the services of ATM, debit, or credit cards. Moreover, it finds that only 20 percent of the MFIs included MFS to facilitate transactions and an identical proportion of institutions have electronic mail and e-file management services for their office management. It also claims that employing management information systems (MIS) and using customized software accounts for 20% and 40%, respectively. Therefore, policymakers and microfinance organization should take the necessary steps to foster the use of digital services in the business process so that costs can be minimized to attain the principles of outreach and sustainability.

Keywords: MFIs, ICT services, Outreach, Sustainability, Bangladesh

1. Introduction

Information and Communication Technology (ICT) is of great importance in today's world of innovation. It not only provides requisite information to the demand side, but also aids the supply side by the means of cost-effectiveness and inclusiveness, which can change the socio-economic environment. A society that wants to best utilize the pieces of stuff of information in every sphere of life, from dawn to the dusk, will depend highly on knowledge and its management to ensure the quality of life. Modern information and communication technology has created a global village, where individuals may connect regardless of location or time. The United Nations and the World Bank have teamed up with governments from affluent and developing countries to disseminate ICT throughout the world's poorest regions to bridge the digital divide and maximize the impact of aid funds on economic growth (Kauffman & Riggins, 2012).

Although information technology (IT) is generally regarded as an extended synonym for ICT, the latter emphasizes the importance of various communication methods. For this primer, ICTs, or Information and Communication Technologies, are defined as an umbrella term that includes any communication device or application that integrates telecommunications (telephone lines and cell phones), computers, and necessary network hardware, software, and communication media like satellite systems and so on to enable users to access, process, store, transmit and retrieve information in a digital format. Not only conventional institutions like banks, but microfinance institutions (MFIs) could also be benefitted from ICT services. Ali et al. (2021), in this vein opine that MFIs may use the ICT to improve their performance in some ways, including a reduction in costs, an improvement in product quality, and expansion of the product range, an increase in customer happiness, and an increase in productivity. Even though MFIs differ significantly from traditional banks in a number of important ways, including the products and services they provide, the clients they serve, their operating environment, and the non-financial information they must record and track (Mathison, 2005). In fact, these institutions have a lot to offer, just like financial institutions. Pursuant to this, Rao

(2004) attests that ICTs have the potential to assist in making MFI services more interactive, error-free, customized, as well as more open to scrutiny.

Microfinance is the provision of financial services to poor and low-income families that do not have access to basic financial services for use in their micro-enterprises or other productive purposes (CGAP, 2010; Lebovics et al., 2016), allowing them to increase their income and living standards (Wakunuma et al., 2019). Microfinance is intended to provide funds to loan applicants who often live in severe poverty, cannot provide collateral, and therefore have no access to official financial institutions. Pursuant to this, Chigbu Ezeji et al. (2015) opine that flows of capital can aid in the economic growth of emerging nations by providing them with the cash and technology required to exploit their indigenous resources, and MFIs are great source of providing funds to the people with lack of financial capacity. MFI is a means of encouraging people to engage in productive activities and expand their small companies. Bangladesh is projected to have a substantial necessity for microfinance due to the country's massive impoverished population. Therefore, it becomes relevant to study the evolving character of microfinance in Bangladesh's rural development. As the government-specialized banks and in some cases, the informal lenders are serving the same market, MFIs are facing extensive competition in those areas. Due to the entry of commercial banks into the microfinance industry, Hermes et al. (2011) asserted that microfinance organizations have faced more significant rivalry for limited donor money and heightened market competitiveness. Borrowers are given loans to start a company, restore their houses, and enhance their families' and communities' overall living conditions.

Regarding rural development, credit to the poor, especially poor women, has remained low, although credit infrastructure has risen (Yadav, 2014). Although many microfinance institutions serve the poorest of the poor and provide financial offerings with thousands of their branches, a large portion of the poor households cannot access financial services. The situation is worse in rural regions. Rural regions are more expensive to operate in due to their large geographical spread, low population density, and the limited number of transactions, which is one of the primary challenges prohibiting microfinance enterprises from operating there (Hishigsuren, 2006). As a result, MFIs are tasked with developing cost-effective strategies for assisting the impoverished. In this vein, Ssewanyana (2009) finds that ICT may significantly address disparities and coverage issues while also serving as a cost-cutting tool for MFIs. Personal computers, cellular phones, automated teller machines (ATMs), and point-of-sale (POS) devices in retail or postal stores may be less expensive to implement and more convenient for consumers than branches in remote areas (Ivatury, 2009). Now it is essential to establish a value delivery system that will consider cost issues while bringing services to the lower-income group.

In recent years there has been an upsurge of interest in how computers and other communication technologies can best be utilized to improve the efficiency and effectiveness of diverse financial institutions. Being the prime financing source for the borrowers, Banks, insurance, and leasing companies have long been using technology to facilitate customer service and ensure competitiveness. Further research also suggests that the competitiveness of MFIs will undoubtedly be a case if information communication technologies can be deployed suitably. Diniz et al. (2008) further suggest that different types of financial service providers have had very diverse outcomes in terms of predicted productivity and company performance due to substantial ICT investments. Consequently, according to Kipesha (2013), ICT use has a favorable influence on efficiency and sustainability, but it is dependent on the degree of ICT investment in institutions. It also asserts that institutions investing more in ICT experience improved efficiency and sustainability compared to those with low ICT investments. Now it's high time to set a bridge between ICT and microfinance institutions to serve the customers of the remote area as well as ensure sustainability in the competitive financial market. ICTs, like microcredit and microfinance, is not a panacea, but they may help microfinance organizations become more viable by lowering transaction costs, boosting scale, and expanding outreach to distant regions, hence eliminating the demand gap for microcredit (Amin, 2008). Thus, deploying information and communication technologies is critical to management automation, effective marketing strategies and bridging services closer to clients.

Among the prior studies, Tadele et al. (2018) investigate the factors affecting website visibility and report that size of MFIs and the natinal economic development largely impact the accessibility of information on the websites. Dorfleitner et al. (2019), in a study on the global MFI dataset show that institutional seze and financial expenditure positively and significantly influence the MFS adoption by the microfinance institutes. In the latest study, Dorfleitner et al. (2022) identify the contributing factors to the digital transformation of MFIs. They report that the social mission and profitability of an organization, and the level of economic development of a country are the key determinants of the

digitization of MFIs. Although several studies have been conducted on how digital services enable MFIs to provide quality services to the clients of developed nations, there remains a vacuum in this research category in the context of emerging economies. Bangladesh was chosen for this study because of the government's emphasis on digitization across all economic sectors, one of the world's fastest-growing economies. Therefore, this study is a unique attempt that explore the usage pattern of digital services by the MFIs in the context of a developing country.

The key aim of this study is to focus on the dimensions and options that the top financing institutions use to demonstrate an insight into the applications of ICT in rural finance. Moreover, it emphasizes identifying the extent of techno-facilities that the MFIs deliver to ensure outreach and sustainability. The paper is organized as follows: the second section discusses how ICT services ensure accessibility and sustainability, along with a conceptual framework; the third section describes the research methodology and the parameters of digital services; the fourth section describes the study's findings and discussions; and finally, it concludes with policy implications.

2. 'Outreach' and 'Sustainability' – Purpose of ICT Services

No doubt, microfinance institutions' one of the priorities is to operate in the market for years ahead. Though they are serving the people with less or no capacity to enter the market, operating and monitoring costs are high in this case. One possible solution to minimize the cost per client they serve could be to upturn the coverage of their services. Here lies the question of whether they will increase the number of clients from the identical geographical area, where they have been serving for years. It will ensure economics of scale in operation; hence, sustainability will be achieved automatically, where outreach is a perfect complementary point for sustainability. Alternatively, MFIs can think of reaching prospective clients whom they did not deal with. It might be new demography or a locality, which will be tough to reach. In the latter option, costs will mount, and high risk may bear due to unforeseen demands from clients. Here reaching a large area may be achieved by leveraging the firm's long-term viability.

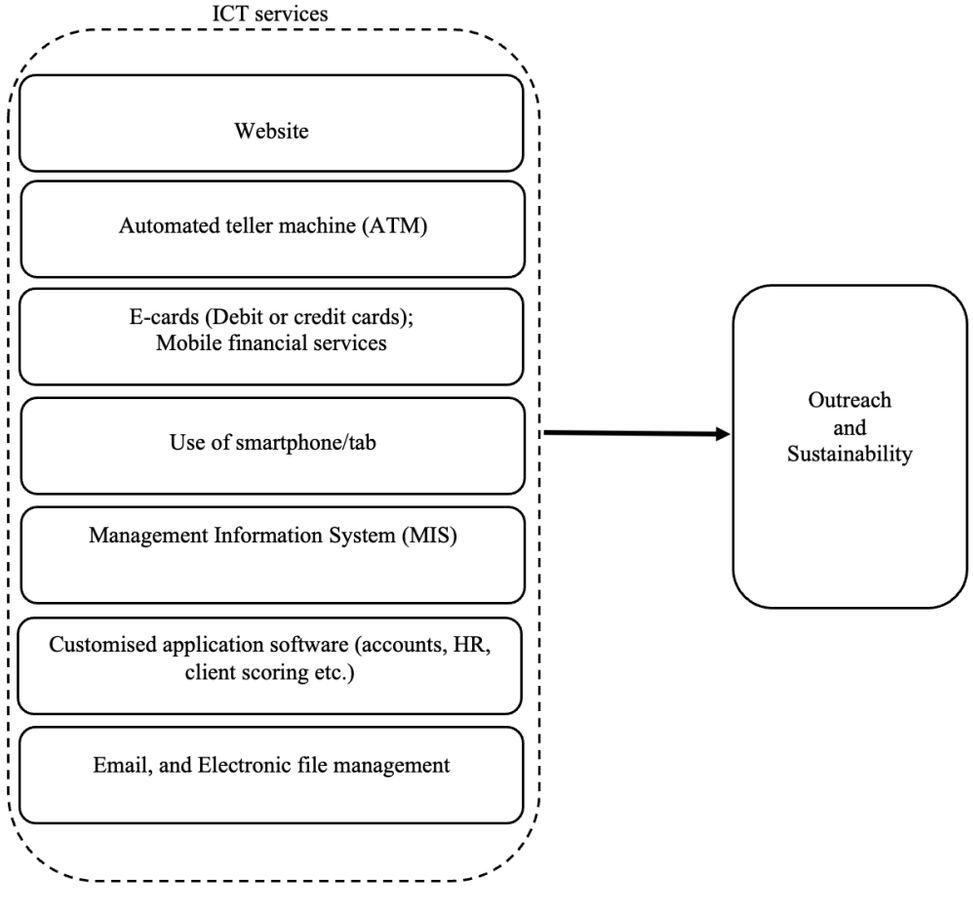

Figure 1: Conceptual framework on the relationship between ICT services, outreach and sustainability

Study has shown that under expected circumstances, these institutions can attain both benefits by following a simple but time-befitted technology formula. We have lots of evidence of how financial institutions have successfully up-scaled their customer base and efficiency in service quality. Online banking, ATM services, internet banking, and debit and credit cards are a few. Customers always accept state-of-the-art technologies that ease the transaction process with less time and effort. Banks sometimes operate their services without setting up a branch in a geographically dispersed area. The key is to lessen the huge cost of running an office, while efficiently serving people. Certainly, whether to increase the number of customers of a particular stratum or expand coverage, ICT creating synergy with MFIs could be a decent choice. It can also be used to initiate marketing tools to attract new customers and monitor client's profiles (before and after sanctioning of a loan) that fosters profitability, which in turn could ensure sustainability. A conceptual model on how ICT services enable outreach and sustainability is depicted in the following manner.

3. Research Design

3.1 Method and Data

This study is an exploratory investigation into the digital services that an organization embrace. Analysis has been conducted to determine the most and least incorporated IT facilities into the business process. Leading microfinance institutions were selected based on several factors. Firstly, the market shares of MFIs, reported by the Microfinance Regulatory Authority, Bangladesh as of June 2014. Secondly, the MFIs are included in mix market database, www.mixmarket.org, the online global hub where the microfinance institutions and related organizations share institutional information to ensure transparency and provide updates on the market. Finally, adoption of ICT in administrative and service end of these institutions. In this case, a questionnaire was employed to collect primary data from the staff members of 10 MFIs named BRAC, ASA, BURO Bangladesh, Jagorono Chakra Foundation, Society for Social Service, Uddipan, Shakti Foundation, Padakkhep Manobik Unnayan Kendra, RDRS Bangladesh, and Grameen Bank. All the answers to the questions were either a 'yes' or a 'no'. Two employees from each of the organizations were asked about the ICT services that they have or use in their business operations. Initially, one staff from each of the MFIs was about the services. Later, the initial responses were verified by asking similar questions to another employee of the same organization. Therefore, a total of 20 respondents participated in the survey.

3.2 ICT Parameters for Microfinance

According to Ghani et al. (2018), a country's economic growth is significantly dependent on the deployment of new technology and innovation. Banks and other financial institutions have adopted different technological advancement for setting up a bridge with their clients. As those were utilized successfully for aiding depository and contractual financial institutions to cut down the costs in one hand, and the clients to get services at their doorsteps, it is believed that MFIs can also depend on these criteria of innovation and utilization of ICT for the similar purposes. The ICT parameters that are used in this study are given below.

- Website
- ATM
- E-cards (debit or credit card) and mobile financial services
- Smartphone/ Tab
- MIS
- Software use (accounts, HR, client scoring etc.)
- Email and e-file management

4. Findings and Discussions

The usage status of digital services by the MFIs are varies from one another. However, the extent of the microfinance organizations adopt IT products are highlighted in the following fashion.

Website: It is a collection of web pages that typically have connections to one other and individual or business can access the information to illustrate a single topic or several topics that are linked. Websites are usually developed to inform about place, people, company, or even an idea. All the sampled companies are having website of their own to circulate their mission, vision, products and services, and success stories. In this vein, Gutiérrez-Nieto et al. (2008) claim that website help the MFIs to achieve their social goals through dissemination of information to the donors and the other stakeholders. In this study, all of the MFIs use the internet to accommodate information and enhance their

data hub.

ATM: Automated Teller Machine is a computerized device connected to a bank's data system and aids clients to withdraw, deposit and transfer money without a teller's help. It gives MFIs a chance to attract new savers as it ensures 24/7 services. Another thing is that establishing ATMs will certainly minimize costs due to less involvement of employees. However, setting up ATM for its own will be costly for maintenance and security. For the said MFIs, only 30 percent are using the service of ATM, not held by their own but by their correspondent banks.

E-Cards, Online Banking, Mobile Financial Services: Electronic Cards like debit card, credit card, and smart card are plastic cards that enables a client of a financial institution to withdraw or transfer, borrow money, and to pay cashless. These cards, having a tiny chip, store accurate information on a client's account. Furthermore, security concern is also a good point in favor of these as encryption is assured. Yet, using cards require other machines to set up that incur costs. No MFIs have introduced cards of their own. Nevertheless, each of the organizations do the online transfer of funds.

Mobile financial services (MFS) are a popular method of transaction in Bangladesh. For MFIs, these services could be used to receive credit installments from the borrowers and collect deposits from the savers. Since MFS products are more efficient compared to the traditional services, it could offer least costly alternatives to the MFIs (Dorfleitner et al., 2018). However, in Bangladesh, only 20% of the MFIs allow their customers to pay the dues and choose deposit collection schemes through online MFS.

Smartphone/Tab: Smartphones/Tabs are small, handheld digital devices that can run dedicated programs to manage MFI information and perform commercial computations with greater mobility. These can facilitate field-level personnel's ability to keep track of updates on client accounts. The use of smartphones largely affects the efficiency of official works since it ensures mobility of communication. All the MFIs, in this case, use mobile communication to communicate within and outside of the organizations via mobile SMS/call-in decision making. They also use it to monitor the clients swiftly.

Management Information System: MIS is an interrelationship among people, technology, and process that enables an organization to coordinate and control the entire business procedures, especially it could be considered as a vital component in the financial sector development (Seese et al., 2008). In this connection, Mohammed and Hu (2015) arhue that MIS collects, processes, stores, retrieves, evaluates, and disseminates information, which increases management's ability to monitor, evaluate the corporate performance. Therefore, MFIs can also use this system to facilitate the internal communication and control system. It facilitates collecting, storing, and processing data that helps make effective decisions. However, as per the survey results, only 20 percent of the MFIs use MIS in their business processes.

Customized Software Usage: An application or software aids an organization to perform a task in a specified way. Built-in or off-the-shelf software is largely used to meet the everyday needs of the businesses, however, it has limitations of failure to work in a customized environment. Since each of the firms has its own requirements regarding managing, accounts, payroll, HR, and other departments along with clients' credit scoring, a custom-made software is better to meet an organ's specific needs. In this study, it is found that all the organizations use customized applications for accounts, however, only 40 percent of them use this type of software for credit scoring.

Email/E-file Management: Email instantaneously sends information from one end of the globe to the other. It also minimizes the cost of physical delivery of letters and documents. In case of Bangladesh, all the MFIs of this study prefer to use email service. Electronic file management is a service that minimizes the time and hassle of physical movement of official files, ensuring an organization's productivity. In the given case, only 30 percent of the microfinance organizations registered for this service.

5. Conclusion

Like many other organizations, MFIs provide diverse services to their clients by utilizing various forms of digital technology. ICT delivers low-cost services while saving time for MFIs to execute their tasks both in the office and with clients. Although digital technologies are widely used in Bangladesh, the utilization of these services by MFIs is not as ubiquitous. One of the possible causes for the lack of willingness to accept IT services is a dearth of management understanding. BRAC is the only organization with a wide range of digital services to upgrade its operations. The rest of the MFIs are not interested in modifying their software or automating their administrative chores. Policymakers and MFI management might stretch out their services beyond borders through awareness-raising on the one hand and technical innovation and digital product design on the other, which would make the company sustainable.

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