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## **THE NEED OF FINTECH IN THE INDIAN MICROFINANCE SECTOR**

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### **Introduction**

Provision of credit in the remote rural areas always remains a challenge. The high transaction costs and supervisory cost poses great challenge for setting up an efficient institutional design for credit delivery in the rural areas. As a step towards financial inclusion, the SHG bank linkage model was introduced by NABARD in the year 1992. Since then the microfinance sector has grown enormously and the number of participants has also increased manifold. The microfinance sector in India is the largest and quite unique in its organisation. It is unique in two respects. First, the Reserve Bank of India and the nationalized commercial banks which it controls are actively involved in micro lending and the role of specialized micro finance institutions is limited. Second, most credit is channelled through Self Help Groups (SHGs) consisting of between 10-20 women.

The SHG Bank linkage program is the largest microfinance program of the world with 85.77 lakh savings linked SHGs as on 31 March, 2017 with the savings outstanding at Rupees 16,114 crore. Microfinance institution (MFIs) raises resources from banks and other institutions and extends loans to individuals of SHGs and JLGs. As of March 2017, more than Rupees 60,000 crore has been extended by the MFIs as credit to the poor financially excluded people and the number of clients benefitted are close to 40 million.

Despite the phenomenal expansion, microfinance institutions are faced with a number of challenges, which has an adverse impact on their operational efficiency and impede their growth.

### **Review of literature**

The literature indicates that use of technology in microfinance institutions has a lot of potential to increase the efficiency of these institutions by reducing the transaction cost but most of them are yet to exploit this benefit. The number of microfinance institutions that have made adequate investments in technology are limited leading to absence of studies based on cost benefit analysis. Sravani (2013) in his paper concluded that microfinance has dealt with the problem of financial

exclusion in a big way and that this success can be attributed to innovative use of technology in microfinance institutions. However, future success of these institutions crucially depends upon overcoming technology related problems. Hishigsuren (2006) concludes that ICT solutions in microfinance are worth it only under certain conditions. Technology adoption makes sense only in densely populated countries which have enabling environment (regulatory environment, infrastructure, financial education etc.) to support its use. Also ICT use is context specific and a proper cost benefit analysis should be done before adopting it in any organisation. ASSOCHAM (2016) in its report concludes that the success of microfinance depends upon how well the industry is able to balance technology and human interface in providing financial solutions to the clients. ING (2016) concludes that the need of fintech is high in India relative to China because of large unbanked population but China scores higher in terms of fintech infrastructure. Both economies, however suffer from long procedures to formally open a business. PwC (2016) in its report concludes that MFIs in India could increase the reliance on technology and reduce their operating costs to bring in more efficiency.

### **Challenges of rural finance and the microfinance sector**

Rural financing is particularly challenging due to high transaction cost, dependency on agriculture and limited access to basic services such as health, education and markets (Hishigsuren (2006), ASSOCHAM (2016)). The cost of loan delivery and servicing is very high due to low density of population, small volume of transactions and poor information and communication technology. Moreover, the lending to the poor in the remote rural areas becomes risky since poor lacks collateral and the banks lack the technical knowledge to evaluate the credit worthiness of the borrowers. Most of the transactions are cash based and are low in volume. The cost of cash based transactions is higher due to many reasons. First, there is a cost attached to idle cash due to foregone interest. Also the cost of branch set up and manpower increases with decreases in the value of transactions. Due to large geographical spread of the customers, setting up of branches is not economically justified because the revenues generated are much lower than the cost incurred.

The microfinance model was adopted in India due to its expected benefits of financial inclusion and growth and development of the rural people. Due to the features of the microfinance model such as joint liability of group, self selection in group formation etc., it was expected that the program can prove to be an efficient and sustainable model of credit delivery to the poor (NABARD, various reports).

The program since its implementation has made remarkable progress in achieving its objectives, but MFIs were increasingly reported to have high operating costs. Post demonetisation, the microfinance sector was particularly hit since it is cash intensive and the businesses of the microfinance clients were adversely affected causing delinquencies in repayment. The use of technology has emerged as a powerful tool to address the challenges faced by the MFIs. One of the objectives of the demonetisation move of the government was to promote digital payments which can help make MFIs sustainable; however, given that these firms have lower margins, funding of these technological improvements is definitely another issue to be dealt with.

**Problems in the implementation of financial technology in Microfinance sector**

Financial technology has huge role in financially including poor people in the rural areas. The ING economics department provide a ranking of the finTech environment in 73 developing countries by creating a finTech index covering three broad aspects namely demand for finTech, supply of finTech and political and regulatory risk environment. They measure finTech infrastructure by mobile subscription density, internet density, electricity coverage and grid reliability and the finTech ecosystem by start up attractiveness and the innovation index respectively.

According to the 2016 report, India belongs to the high finTech need and less supportive finTech infrastructure and ecosystem zone. The urgency for finTech led financial inclusion is relatively high in India since a large population is still unbanked and due to the existing problems as already discussed in the traditional banking model. 46 % of the rural households and 32 % of the urban households do not have access to banking facilities Although digital payments is on a rise in India but still 80 percent of the transactions in India happen in cash as against 21 % in developed countries. There exist a gap of almost 200 billion US Dollars in credit supply to the MSMEs and a significant unbanked and under banked population (finTech Trends Report, India 2017, PwC).

Microfinance customers are illiterate and lack a basic understanding of how to interact with technology. So either the technologies should be tailor made to suit the needs of the microfinance customers or they should be adequately educated to use the technology. Many areas which are served by the microfinance institutions do not have infrastructure to support the technology such as electricity, transportation, communication devices, internet etc. which is a big hurdle in the adoption and implementation of technology. The extensive regulatory requirements in the corporate sector and lack of regulations in the start-up business are a major hurdle in the developing fintech in India. The government is providing a platform for promoting fintech sector in India and financial inclusion by taking initiatives such as India stack, start up India program, Jandhan Yojana, Aadhar and emergence of UPI. Also it is playing a very important role in educating and encouraging digitisation. Microfinance firms also suffer from lack of funding to adopt or upgrade the technology solutions.

**Microfinance and technology**

In order to reach the objective of financial inclusion and to achieve higher repayment rates, large number of field officers were recruited by MFIs and branches were set up in the remote areas. However, due to the reasons mentioned before, this lead to high operating costs. Use of technology in the microfinance sector helps in reducing variable cost such as data management cost, savings and transaction cost.

In the recent years, despite the fact that technology solutions were adopted in a big way in the banking sector, the microfinance sector was left out from this. However, the following technologies can be adopted in the microfinance sector in order to reduce its cost (Sravani (2013)):

Technology
<p><b>1. Mobile banking</b></p> <p>India has a strong potential for mobile banking. The mobile subscribers in the country stood at 1,178.2 million. India has the second largest smart phone base with 300 million users and is second to China with 710 million users. MFIs can derive significant benefits in terms of lowering its operating costs by making transactions using mobile phones *. Mobile devices can be used for cash deposits and withdrawals, facilities such as micro loan borrowings and repayment, payment of utility and other bills and transferring of money between accounts. Mobile banking allows the user to login into his account by using his mobile phone and not having to go physically to the bank branch.</p>
<p><b>2. Biometrics</b></p> <p>Storing biometric client information such as finger prints helps in conducting secure transactions remotely and helps in cutting down cost since staff members need not be present at the time of the transactions. Biometric authentication scores over password and personal identification methods which can be forgotten.</p>
<p><b>3. Personal digital Assistance (PDA)</b></p> <p>PDA is a computer like platform which brings the entire information system to the customer and assist in collection of information, conducting loan cycles and disbursements of funds. This improves the efficiency of loan officers.</p>
<p><b>4. Phone banking</b></p> <p>Phone banking is the process of conducting banking transactions over a secure telephone network, for example, balance enquiry, requests for cheque book, insurance, etc. Phone banking is secured via a PIN, address, identity and phone number authentication. It is an efficient system since it reduces the customer's time and efforts in visiting the bank for transactions.</p>
<p><b>5. Internet banking</b></p> <p>Internet banking or e-banking is the latest and cheapest way of providing financial services to the people. It involves processing transactions online without any reference to the bank branch.</p>

\*Forbes (December 18, 2017): "Xiaomi: In-store and in India"

The use of information and communication technologies in microfinance can help the MFI institutions to lower their operational costs. It can help the loan officers track their client's repayment schedules and balances and help in assessing the quality of the loan portfolio.

Project **eShakti** was undertaken by NABARD's digitisation drive in the year 2015 in Ramgarh (Jharkhand) and Dhule (Maharashtra) under Phase 1 (Report on Status of Microfinance in India, NABARD). Under this project, existing SHGs were mapped in a district bank as well as branch wise by capturing financial and non-financial information of the SHGs and its members as well as uploading transactions including the minutes of the meetings through an "App" loaded on android based tablets and mobile phones to a website viz. <https://eshakti.nabard.org/>. All the stakeholders such as SHG members, government agencies, banks, NGOs can access the data through their login accounts. Encouraged by the benefits from this project that started accruing to both the banks and the SHGs, the project was expanded to 23 more districts across various states. Due to this project, the banks were able to appraise the SHGs before credit linkage. It was

seen that in the areas where the project was implemented, number of credit linked SHGs increased drastically. The entire process brought transparency in the transactions for both the SHG members as well as the bank officials.

### **Objectives of the study**

The focus of this study is to study the impact of technology use in the microfinance sector in India. The main objectives are:

1. To highlight the importance of technology in the traditional financial service sector
2. To understand the role of technology and review the technology adoption in the microfinance sector in India
3. To analyse whether technology can bring down the operational costs in the microfinance sector in India.

### **Data**

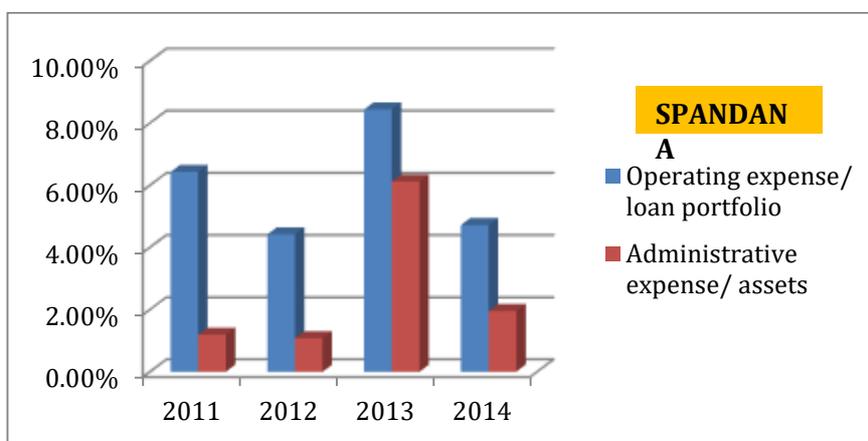
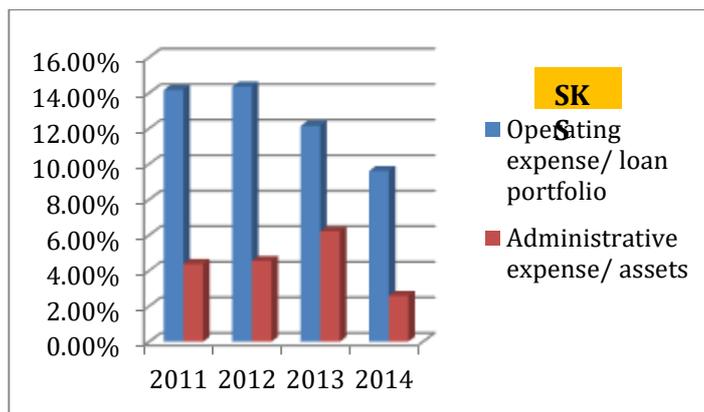
The data used for this paper has been taken from mixmarket.com. The firms used in the present analysis are those which report to the mixmarket.com and have got a diamond rating of 4 or 5. The data for four years have been used from 2011 to 2014. The Microfinance bulletin (Mix, Microfinance information exchange (2010)) divides the MFIs into three categories namely the **Leaders, Moderates and Young Turks.**

The institutional efficiency can be measured by parameters such as operating costs, administrative expenses, number of borrowers and cost per borrower. The operating cost of an MFI depends on a number of factors such as (Mix, Microfinance information exchange (2010)):

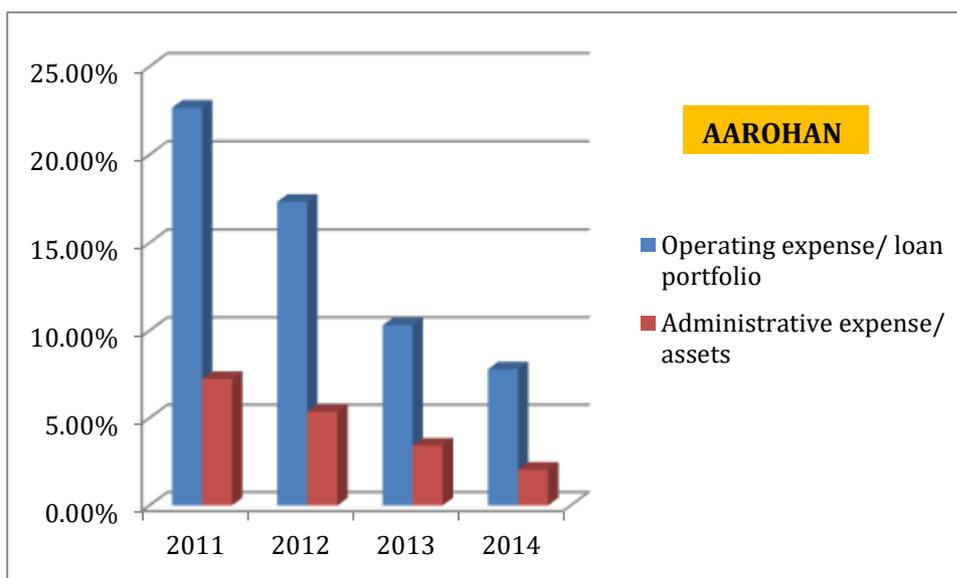
1. Expansion strategy of the MFI as aggressive expansion leads to higher costs
2. Running the MFI operations in the urban areas increases the cost
3. Higher investments in technology leads to high cost in the beginning
4. Staff costs can increase if group sizes are increased or higher borrower to client ratio is maintained.

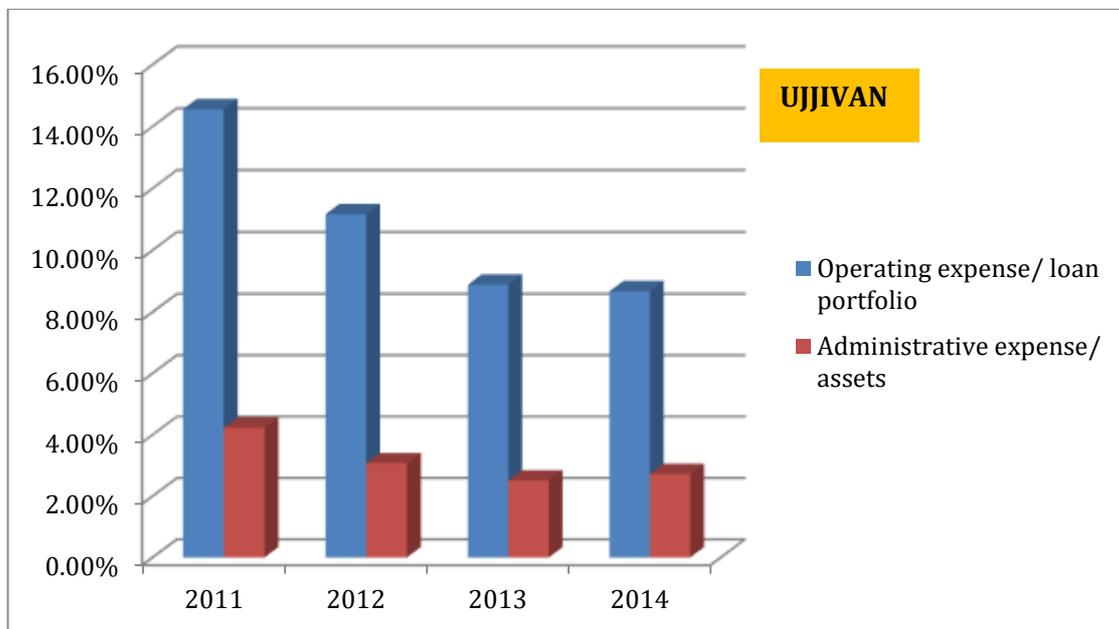
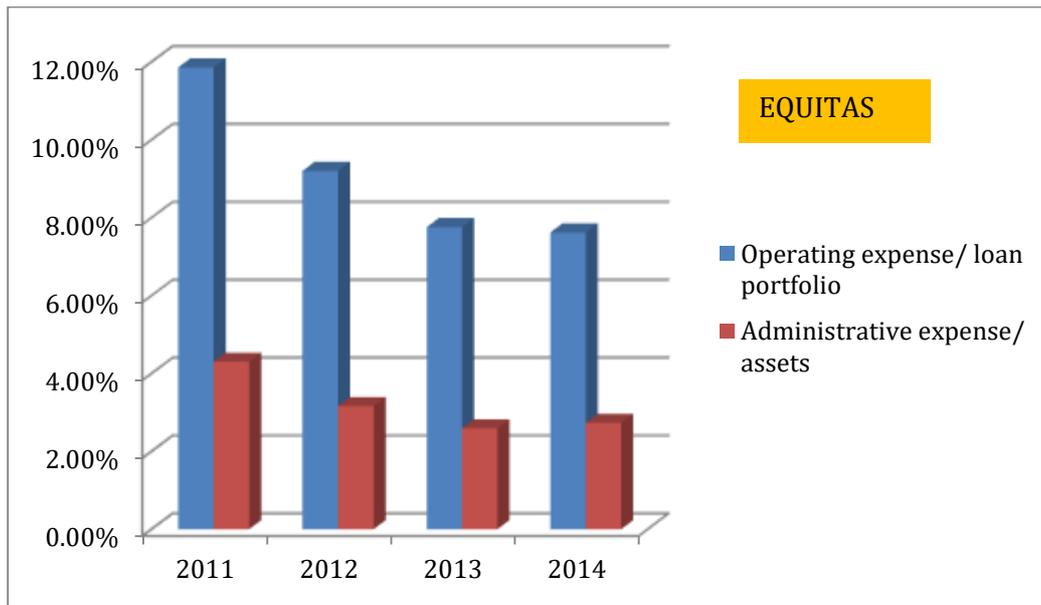
We have data on two MFIs which falls in the leader's category namely **SKS** and **Spandana**. SKS is the fastest growing MFI while Spandana enjoys high efficiency and robust bottom-lines. The Young turks are high growth young MFIs which are promoted by a team experienced in banking and financial services and are highly capitalised. We have data on three MFIs namely **Aarohan, Equitas** and **Ujjivan**.

**LEADERS:**



**YOUNG TURKS**





### SKS

The operating expense/ loan portfolio ratio though declining over the years is quite high for SKS. SKS has the highest operating cost because of heavy investments in technology to deliver superior value to their end customers. So SKS maintains higher head office staff and technology cost to manage their ambitious expansion.

### Spandana

Spandana has the lowest cost followed by Equitas, Aarohan, Ujjivan and SKS. As far as the administrative expenses are concerned, Spandana has the lowest administrative expense/ assets ratio in 2014. Spandana is most efficient with lowest operating costs among all. It has always chosen people over technology and maintains low tech MIS.

## **Aarohan**

Aarohan is the most IT enabled MFI among its peers. The operating cost of Aarohan was highest among all in 2011 at 22.6 % but reduced over the years to a level of 7.62% in 2014. In order to serve its financial inclusion agenda in India, Aarohan launched GRAVITY which is an android based mobile application to promote the process of digitisation. Aarohan has also signed up with FIS and rolled out “predix” which is a centralised digital audit system. The reduction in operating costs can be due to reaping of benefits of technology over the years.

## **Equitas and Ujjivan**

Equitas and Ujjivan has also experienced a declining operating expense/loan portfolio ratio over the years and stood at 7.62% and 8.67% respectively in the year 2014.

## **Conclusion**

Given the challenges of rural financing leading to higher transaction cost, the use of technology can significantly lower the operating costs of the microfinance firms. However, in the short run the costs can shoot up due to expenditures on technology as the case is with SKS. Due to unavailability of data on technology uptake in various microfinance firms, one cannot establish a one to one relationship between technology and operational costs since the operating costs of an MFI depend on a variety of factors. Technology is only one of the variables affecting it. Spandana is the most efficient microfinance organisation with lowest operating cost and highest productivity levels of the staff but it’s not focussed on technology in its operations. So, technology is not the only determining factor in operational costs. In order to reap the benefits of technology in the microfinance industry, the supporting infrastructure has to be conducive. Digitisation, financial inclusion and regulatory support by the government are very likely to boost investments in the FinTech sector. Also in order to finance the technology cost, the MFI firms can look for alternate source of financing such as crowds funding etc.

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