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Benefits And Constraints Of Using Mobile Banking In Microfinance In Developing Countries

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ABSTRACT:

A large number of populations in developing countries do not have access to formal financial services. Recent innovation in providing financial services in a convenient and efficient way is the use of mobile banking technology in microfinance. However, still it is not clear whether offering small amount of financial transactions and other financial services in the remote areas of developing countries in an informal setting is beneficial or not as there is hardly available empirical studies. This theoretical paperdiscusses the benefits of m-banking use at the bottom of the pyramid in developing countries both form MFI and clients' perspectives and the constraints and problems in offering microfinance products and services suing such technology.

1. INTRODUCTION:

Access to financial service has become a key phenomenon for economic development and poverty alleviation (Venkatakrishnan & Eston, 2013). About 2.6 billion people in the world do not have access to financial services but 1 million of them have mobile phones (CGAP, 2010; Demirguc-Kunt el al, 2008; Dermish et al, 2012). In Sub-Sahara Africa, only one of the five households has access to financial services (Venkatakrishnan & Eston, 2013). This is almost same in Asian, Latin American and other African countries. Poor people in these countries have lack of access to such services due to their limited ability or inability to cope with the requirements of the formal financial institutions especially in the absence of formal collateral (Armendariz & Morduch, 2010). Poor people require 'flexible', 'convenient' and 'easy' financial services to deal with their daily cash management (Collins et al, 2009). Microfinance institutions (MFIs) are trying to serve these un-bankable poor people (Armendariz & Morduch, 2010). MFIs use different lending technologies such as group lending, individual lending, collateralized lending and non-collateralized lending, and savings, insurance and other products to meet their financial needs (Cull et al, 2008 & 2009a; Armendariz & Morduch, 2010; Hossain, 2013). But offering financial services to poor people under the traditional microfinance setting is sometimes costly, unproductive, unprofitable and unappealing for MFIs (Mas, 2011). A large number of MFIs still are not sustainable due to their high operating costs emanated from small

amount of loan and financial transactions in sparsely populated rural areas. To overcome the operational costs problem and for deep outreach as part of their dual mission at the bottom of the pyramid (Prahalad, 2004), MFIs have shown their promises to innovate and introduce new financial products tapping with modern technology. Mobile banking is the example of such innovation that started its journey in last decade embedding and partnering with microfinance organizations in many developing countries. For bottom up economic development, mobile phone is actively working for the positive changes (Hellstrom, 2010). Mobile phone banking is using to get the outreach for serving remote transactions, providing quality customer service like credit finalization, reducing staff costs as well as transaction cost (Castello, 2004). Mobile phone is now treated as the darling of microfinance movement (Corbet, 2008).

On the wave of its innovation, MFIs are now offering many financial services such as deposits, insurance, remittances, ATMs, housing and money transfer (Ahmed, 2012). To reach the poorest of the poor in remote areas, to deep outreach and to bring financial services at the doorstep of the poor, and to reduce operating and transaction costs to serve clients with 'bricks and mortars' branches, mobile banking is now a panacea (Alexandre, 2011; Nestor & Edelstein, 2011; Breul, 2012; Andrew, 2009). Penicaud (2013) treats it as mobile money as the two tier landscape. It is contributing significantly to financial inclusion. At presents, there are more than half a million mobile money agents with 150 live mobile money service operators for the unbanked people, and at least in 28 countries, there are more mobile money agents than bank branches till June 2012 (Penicaud, 2013).

However, still it is not clear how and to what extent mobile banking is developed and used for MFIs tailored to the product offerings of microfinance organizations. The benefits of m-banking for microfinance, constraints and challenges in offering different types of micro-financial services using the such technology is still not clear in the available studies. For greater application of M-banking and expansion of this innovation to cap the needs of the poor un-banked people, present theoretical study can be a small brick on its foundation and will give a clear insight for the policy makers, practitioners, academicians and researchers for its greater inclusion and contribution to economic reformation in fighting against poverty.

The objectives of this study is to identify the benefits from and constraints of mobile phone use in offering microfinance products and services to poor and marginalized people in developing countries. Our clear research questions are: what are the benefits to the MFIs and their clients in using m-banking services in microfinance? What are the problems and constraints they face in offering m-banking services in microfinance?

The rest of the paper is presented as follow: section two is theoretical background and literature review, section three is a brief outline of mobile banking in microfinance as a tool for financial inclusion, section four is the discussion

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on benefits of mobile banking use in microfinance both from MFIs and their clients' perspectives, section five is the constraints and problems of using mobile banking technology in microfinance operation, and finally in section six, we conclude.

2. THEORETICAL BACKGROUND AND LITERATURE REVIEW:

2. 1. Theoretical Background of Mobile Financial Services:

Mobile financial services are intermittently treated as mobile banking (m-banking), mobile payment (m-payment) and mobile transfer (m-transfer). Some researchers and practitioners call it as mobile money. However, the first three have different dimensions and applications which inclusively we can call mobile money that sometimes considered equivalent to cash. M-banking uses mobile phones to execute transactions through account in the form of loan repayment, loan disbursement, deposits, saving, cash withdrawal, cash transfer and check of account balance (Bangenss & Spderberg, 2008; Voorrips et al,2012). M-payment is used for different kind of payments to be executed using mobile phone like bill payment, salary payment, airtime purchase, payment for government benefits such utility services, and for purchase of goods and services (Voorrips et al, 2012). M-transfer, on the other hand, is used for transferring money from one place to another using mobile phone where cash in and cash out is done using agents' shops, branches or ATMs (Voorrips et al, 2012).

2. 2. MOBILE BANKING MODELS FOR MFIS:

In general, there are four models that MFIs use in providing financial services in this eco-system: Mobile Network Provider (MNO) led model, bank-led model, independent or third party led model that we find in the CGAP focus note (Kumar et al, 2010) and Voorrips et al (2012) discussions.

Model 1 *Agent for MNO or Bank:* In this model, the MFI works as a 'cash in and cash out' agent for

MNOs or mobile money providers. MFIs can earn revenues in the form of fees and commissions from the services (Kumar et al, 2010; Voorrips et al, 2012). TIAVO in Madagascar use this model.

Model 2 *Partnership with MNO for Serving Existing MFI Products:* This partnership is for better delivery of existing products and services such as loan disbursement, payment of loans and savings deposits (Kumar et al, 2010). The interface in the eco-system between the MFI's IT system and MFS (Mobile Financial Services) platform registers the transactions through the use of good customer service center. *Tamweelcom* is a non-bank type MFI that offers group loan to women, individual or SME loans and insurance using mobile payment (M-wallet) from *Zain-e-Mal* (Voorrips et al, 2012).

Model 3 *Using MNO to Improve MFI's Internal Operations:* Mobile network is used in this model

to upgrade its internal operations especially for non-cash purposes like data collection and communication easily with clients or with loan officers in field (Kumar et al, 2010). It reduces operational cost in remote areas. *IMFR Rural Channel (IRC)* in India provides it for loan, savings, insurance and remittance products with 108 branches and 17,300 client bases in three states (http://ruralchannel.ifmr.co.in). They use biometric technology for client identifications (Voorrips et al, 2012).

Model 4 *Setting own MFS Service:* This sophisticated model requires large IT investment for the MFIs for their own bank platform and is possible for large MFIs with multi-product operations. Clients can access to their accounts via cell phone and can make necessary transactions directly by using the system (Voorrips et al, 2012). Xac Bank in Mongolia introduced this model from 2009.

2. 3. PRESENT STATE OF MOBILE BANKING USE:

A recent MMU (Mobile Money for the Unbanked) survey found 150 live mobile money services for the unbanked of which 41 were launched in 2012 (Penicaud, 2013). Until June 2012, there are 30 million active users of mobile financial services with 224.2 million transactions amounting to US$ 4.6 billion (Penicaud, 2013). The survey found that there are more mobile money accounts than bank accounts in Kenya, Madagascar, Tanzania and Uganda. It is noteworthy that M-Pesa is the first and pioneer in mobile banking that started first in Kenya. However, all the 150 mobile money service providers are not offering microfinance products or working in partnership with microfinance organizations. A study of Voorrips et al (2012) identified that 154 MFIs are using different mobile banking models of which 21 are using model 1, 24 are using model 2, 22 are using model 3 and the rest 12 are using model 4. Of the 154 MFIs, Philippine alone accounts for 73 rural banks which only use SMS services.

2. 4. THEORETICAL STUDIES ON BENEFITS AND CONSTRAINTS OF MOBILE BANKING IN MFIS:

Dermish et al (2012) conducted a literature survey on branchless banking for the poor people and mentioned that real time banking service in every retail store help the poor unbanked people by different usage pattern. CGAP focus note (Kumar et al, 2010) mentioned that m-banking help MFIs to better serve existing customers and to reach new customers. Nestor and Edelsteing (2011) argued that m-banking enhance trust and transparency for MFIs mainly in sending SMS to customers in disbursement and repayment of loans. Garg and Wright (2011) mentioned lack of financial and technological knowledge; trust and regulatory inadequacy are the main constraints in its expansion. Mehdi et al (2009) studied on the adoption and usage of mobile banking by low income clients in developing countries. Donner and Tellez (2008) used illustrative and explanatory data of urban India linking adoption and impact of mobile banking usage. The other theoretical studies are Cracknell (2004), Mas and

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Radcliffe (2010), Mas (2013), Borg and Persson (2009), Ivatury and Mas (2008), Diniz et al (2008), Geach (2007) and Goss et al (2011).

2. 5. EMPIRICAL STUDIES:

On Clients' perspective: Ssewanyana (2009) did a quantitative study on ICT usage in the MFIs in Uganda and found that ICT uses enable the MFIs to control costs, create efficiency and effectiveness in operation, improve productivity and outreach to the poor. Mushy and Mukwaya (2011) conducted a study on Ugandan and Tanzanian clients, operators and agents and found positive result of financial inclusion by m-banking usage. Venkatakrishnan and Eston (2013) studied the usage and utilities of mobile money transfer services in urban area of Tanzania. Ivatury and Pickens (2006) studied on the factors behind the use of WIZZIT by low income people in South Africa and found that people value convenience, flexibility and affordability in transacting with m-banking. Ngugi et al (2010) reviewed the key factors that lead to growth of M-Pesa usage in Kenya. Jack and Suri (2011) also did two round surveys on M-Pesa users in Kenya to assess the impact. Nadiwalana et al (2011) found that P2P money transfer is popular to clients.

On MFI Perspective: Very few empirical studies on m-banking from MFI perspectives are available. Conzett et al (2011) studied on Tanzania and found that m-banking increase rural outreach. Yousif et al

(2011) conducted online survey on 26 MFIs and found that clients' financial literacy and IT infrastructure are the main challenges for MFIs.

3. MICROFINANCE AND MOBILE BANKING: TOOLS FOR FINANCIAL INCLUSION

The fact is MFIs did not primarily focusing on mobile banking. They did not position themselves for providing services through mobile phone. In most cases, m-banking only offer transfer. Microfinance is highly focused on credit and in some cases, savings. On the other hand, m-banking is focusing on transfer and payments. MFIs focus on lowering cost and human capacity for operation, while m-banking is aligned with infrastructure in payment system. So it was not surprising at all that they were not working together. But time has changed and the innovation has experienced many changes which are finally aligned with both these services like microfinance and mobile banking together for alleviating poverty and ensuring financial access to poor people as well as unbanked people mostly in developing countries.

Some MFIs have been deployed mobile banking with their strong financial and others resources with skills and known as first movers. Tameer Bank in Pakistan and Xac Bank in Mongolia are setting their own banking channel and building strategic partnership with MNOs to minimize cost of delivery as well as increase outreach. In India, SKS microfinance developed mobile banking system in partnership with another bank named Andhra Bank. In this system, customers usually

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deposit with SKS banking agents considering Andhra Bank accounts. Customers use mobile banking for their loan repayment. Andhra Pradesh state government has come into a good play for using 30,000 village organizations as cash agent for social payment for the Self-Help Group members under their umbrella, and for the local banks. Another interesting is in Ecuador, for instance, reducing upfront cost and expertise demanded, the RED Financiera Rural association of MFIs and cooperatives are planning to build up a contract for maintaining core financial banking systems as well as branchless banking considering each member of the association. The cost sharing of the technology as well as expertise are the new phenomenon of bringing MFIs into network of payments and providing option to get opportunity to take benefits of mobile banking and of course relevant other channels which is really difficult to implement solely (Ivatury and Mas, 2008).

The reason of getting more attention to mobile banking is its diverse application for financial inclusion of unbanked people (Klein & Mayer, 2011). Mobile banking in microfinance could play an important role for increasing financial services. Poor people are out of all the financial services in the absence of physical branches. It is a cost effective tool to serve many people by collaborating with fast moving telecom operators.

As we see, already mobile phone has played a significant role to change the lives of the poor people but things are not enough. The mobile banking technology is spreading its hand for using SIM card as debit card and credit card; meanwhile it is also helping depositing, withdrawing and transferring cash from one place to another (Borg & Persson, 2009).

Where there is no existing m-banking infrastructure, the most important decision for MFI is to consider whether they initiate their own services or they wait until the service and necessary infrastructure is developed. It is necessary to spend a huge amount of time and effort in planning, financial consideration, operational change, organizational orientation, and technical competencies etc. It should not be wise to start if they don't have sufficient and diverse resources as well as proven infrastructure for doing so. MFIs can make collaboration with MNO for sending SMS for remind before loan repayment and loan repayment using M-banking and can reduce transaction cost. On the other hand, mobile services could also provide facilities to customers to check balances, and to deposit money. Meanwhile, it is also possible to earn some sort of commission form the m-banking services by acting as agents. This not only provide benefits to customers but eventually customers will be able to deal with the technology and of course, this practices would also help staff of the organization to adapt with. Those MFI, who has strong and efficient management team, maintain internal control system would benefit from it.

4. BENEFITS FROM M-BANKING USE IN MICROFINANCE:

M-banking is considered as the panacea to

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unbanked people by bringing the financial services at the door step of poor people in remote areas using the potentials of mobile phone network. It reflects some notable success in the sea of needs (Goss et al, 2011). It has benefits both for customers and for the MFIs.

4. 1. BENEFITS FOR MFIS:

Reduced service delivery cost: Providing financial services through m-banking channel saves a lot of costs than providing it through traditional channel (Ivatury & Mas, 2008; Goss et al, 2011). MFIs transact with poor people with small amount in the form of loans and savings but facilitate large number of transactions in remote and rural areas. Providing these services require more human resources which increase their costs than that of formal banking channel. The success of MFIs is mostly depending on how they can manage their operational costs. To reduce management tension, MFIs use m-banking which can reduce its costs of delivering services as all these are done by the tips of handset at the hand of client, loan officers do not need to go physically for loan collection. Research shows that mobile banking can minimize 20-50% cost of operations of MFIs.

Deeper Outreach: The dual mission of MFIs is to both financial sustainability and economic and social benefits to poor people by deeper outreach. But reaching vulnerable rural customers are always challenging for MFIs. Mobile banking does not require large number of branches in rural areas which require more costs, efforts and human resource to operate it. It is easy for the MFI to outreach to a large number of clients, serve the poorest segment of the rural areas and urban slums by saving its time and costs that happens in branch based traditional operations.

Better staff integrity and management: As the pressure on staff in collection and disbursement is reduced in this way, they can now better integrate and speed up their routine works (Kapoor et al, 2007). It will facilitate more microfinance services considering time and place, and will give an MFI modern branding and image. It helps to concentrate on other works, help offering more products and services using m-banking channel and increase their confidence and integrity thereby more productivity.

Financial Benefits: Mobile banking can offer more and diversified products and services with increased number of clients at low costs and can ensure economies of scale. It also generates more revenue in the form of fees or commissions for these services.

Reduced risk of fraud and corruption: M-banking saves MFIs from all sorts of fraud and risks of credit officers. When the staffs or loan officers maintain records manually, there is huge chance of corruption. But staff orientation in mobile banking saves from all sorts of fraud, and delay could be prevented by using mobile services. It provides security to staff instead of handling large cash in the remote areas as they do not need to carry cash.

Savings Mobilization: M-banking facilitate in collecting tiny savings from even very poor clients

(Goss et al, 2011; Mas, 2013). It efficiently stimulates savings mobilization and facilitates opportunity of using low cost funding for the MFIs in this way. Savings also increase clients' eligibility of obtaining loan and help in meeting emergency and future needs (Armendariz and Morduch, 2010).

Better collection effort and quick service: Technological platform using m-banking creates basis for service innovation and delivery conveniently and immediately to customers to meet their demand. For example, sending a message alert to client before the time of repayment just make the client conscious to repay in due time. A research found that when a text massage is sent before or on the day of payment, the rate of repayment increased by 30 percent. It also helps the MFI to disburse the loan amount quickly.

4. 3. BENEFITS FOR CLIENTS:

Better service to clients: Using m-banking customers could easily repay before any sorts of group meeting using her mobile phone. Loan officers can then easily present at the group meeting with the print out they have in their hand and be able to spend more time just for talking about different issues that the customers need like business activities, family education, health as well as financial literacy.

Deeper outreach: The loan officers can spend his saved time on finding new clients as well as maintaining profitable relationship with valued customers. It helps to increase deeper outreach as the MFI do not need more physical infrastructure and loan officers.

Trust and Transparency: Mobile banking is now providing ample opportunities to see records of transactions and able to verify cash. It helps clients to maintain their records and they can also understand their benefits and cost of maintaining their accounts. It increase transparency and build trust on MFI which was a rare case earlier (Klein& Mayer, 2011; Donner & Tellez, 2008).

Overcome distance barriers and transaction costs: Reaching vulnerable extreme rural customers always has been a challenge for MFIs. Poor people want to get most convenient and affordable services to manage their little income. Except credit, poor people are really reluctant to go somewhere distant and save money into an account (Goss et al, 2011). Especially the small entrepreneurs are busy with their business. They can't move to the distant places to pay installments. It also makes them worried about the safety of carrying money for a long distance. M-banking overcomes this problem in a safer way by providing proximity and reducing transaction costs. It reduces transaction costs as clients do not need to use transport to go to MFI or bank branch.

The other benefits to clients in short are:

a. It empowers people by cheering entrepreneurship as people can get help form MFI at easy condition without

moving and wasting time and can get some other facilities from the MFI and its technological platform such as facilitating transactions for their business.

b. It helps to earn interests form savings and this savings also increase their eligibility to obtain loan.

c. It increase social capital, social integration and social cohesion when MFI use m-banking to collect client reputation, vouching for others' credit requests, exchanging information and facilitate group lending mechanism using this channel (Bhavanani et al, 2008; Mas, 2013).

d. The system is considered more convenient for clients in terms of flexibility especially in saving small amount, in obtaining loan and repayment (Goss et al, 2011) due to its reliability and convenience (Ivatury & Mas, 2008).

5. CONSTRAINTS AND CHALLENGES OF USING M-BANKING IN MICROFINANCE:

Though mobile banking use in microfinance opened a new horizon, it is not out of problems and constraints. Some of the constraints are developed by the people who run this, some are external and some are due to the lack of knowledge. The main challenge of the roll out process of this service is the lack of in-house knowledge and inside and outside challenges of technology (Mobile banking study, 2013). Still the regulation has not developed to guide the proper use of infrastructure and to ensure protection and right of all parties in the system.

Liquidity problem: Cash inadequacy could be a problem at the time of demand. Agents may not be able to provide sufficient cash to fulfill customers' demand (Ngugi et al, 2010). Then customers' waiting time could be long in this case and make customers bored on this service.

Technological issue: In using the service, customers face a lot of problems like delayed SMS after depositing money, difference between manual records and bank records as customers do mistakes recording their own transactions, inconsistent experience dealing with different cash in and cash out agents, technological literacy of clients which is really expensive. On the other hand, MFIs staffs face challenges of technical know-how in using m-banking.

Poor network: Sometimes networks fails at the time of using the service and some other problems may arise. It is then really hard to communicate with the central office. Customers may not get a good answer from the agent and agent could not be able to provide good way to answer all these questions. If it is late then customers become worried about their sent money and its security. Poor mobile network and thus, lack of trust, confusion regarding security, and providing transaction receipts are really great problems. In developing countries like Bangladesh, customers always want to get the receipt of the hard copy traditionally which is also difficult to provide to customers.

Human interaction: Customers have to read SMS and manage password which is almost difficult for them to memorize or keep track and is problem for those who are illiterate (Ngugi et al, 2010). When scale becomes larger, MFIs have to develop more service which is really costly and difficult and they need human resources and so on. When m-banking is highly used then human interaction became interrupted. For MFIs, human interaction is the main resource for getting closeness to customers and of course, for loan repayment.

Timing of the agent outlets: Opening time of agents' outlet sometimes may not match with the clients' demand as the agents are not able to spend whole day or night in opening their outlets. But customers always think that the service should be available to them at all hours.

Internal weakness of MFIs: MFI's technical infrastructure could be weak or need huge financial and non financial investments. Designing products as well as processes of business would require high time and efforts. This investment could also require high volume of transactions to make it profitable.

Problem in group repayment: An MFI in Kenya which alternatively uses group repayments using M-PESA faced a different problem. Fewer group member had paid in due time. In this new system, the customers did not come to group meeting and for that reason; repayment pressure was very insignificant (Ivatury & Mas, 2008).

Customer authenticity: This is difficult as there is less way to verify the customers, especially in case of sending money, it may go to wrong recipient (Ngugi et al, 2010). Poor people have a little income. But MFIS still are not flexible enough to offer diverse range of financial services to poor people to meet their actual needs (Goss et al, 2011). These are due to the lack of authenticity.

Lack of electricity facility: It is a major challenge. In most of the developing countries, electricity is not available in the rural areas. For charging mobile phone it is really a challenging issue.

In addition to the above mentioned problems and constraints, consumer rights and protections, customers obligation, customers data privacy, SIM card registration, ownership of mobile like control over mobile phone whether it is at the hand of right men or women, diverse network with diverse tariffs systems make customers confused, trust on technology as well as security and fraud (Ngugi et al, 2010), and the rate of high theft of mobile are some of the important and basic issues that are always challenging.

6. Conclusion:

Recent innovation in providing financial services in convenient and efficient way is the use of mobile phone banking technology in microfinance. To reach the poorest of the poor in remote areas, to bring financial services at the doorstep of the poor, and to reduce operating and transaction costs to serve clients with bricks and mortars branches, mobile banking is now considered as a panacea (Alexandre, 2011; Nestor & Edelstein, 2011; Breul, 2012; Andrew, 2009). It

is contributing significantly in financial inclusion. However, still it is not clear whether it is beneficial and efficient in offering small amount of financial transactions and other financial services in the remote areas of developing countries as there are hardly available empirical studies. This theoretical paper describes the benefits of m-banking use in microfinance in offering financial services at the bottom of the pyramid in developing countries both form MFIs' and clients' perspectives and the constraints and problems in using this technology in offering microfinance products and services. We found some significant benefits in using mobile banking for both the parties: MFIs and their clients. However, it is still facing some major problems and challenges in providing services to poor people in developing countries. At the outset of its proper application and reducing offering and transaction costs, the barriers are necessary to overcome. Proper regulatory environment, respecting user guideline, trusts, rights and protections, proper integration and partnership with mobile network operators, adequate staff training and introducing client literacy for proper use, developing reliable and adequate IT infrastructure and better product and service design are necessary to implement.

This study is a theoretical one and it may not properly address the benefits and constraints in using m-banking in microfinance as it is based on available literature. An empirical study addressing all these issues in different country context can better overcome its shortcomings and can better contribute to by policymakers, practitioners and regulators who are working in this issue.

Success of mobile banking implementation highly depends on the dedication and specialization of capacities of the Microfinance institutions. Poor People need safer; more reliable, affordable and convenient ways of managing with little money they have (Goss et al, 2011). A deep and realistic understanding of financial needs, constraints and opportunities of the poor households are needed to address in its proper designing (Kapoor et al, 2007). To ensure financial sustainability and social mission of MFIs and to provide better, adequate, convenient, reliable and low cost financial products and services to poor clients, we hope, the pace of journey of m-banking will soon position as a market niche in informal financial sector in developing countries if it overcome the barriers and set proper strategy in its implementation.

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