THE IMPACT OF PURE MOBILE MICRO-FINANCING ON THE POOR: Kenya's Musoni Experience

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Abstract

Almost all the micro-finance institutions (MFIs) in Kenya have introduced mobile money to increase convenience, speed of transaction and lower cost of transferring funds. Since most MFIs had already established their brick-and-mortar operations, mobile money only complements their traditional approaches to serving their clients. Musoni, a relatively new MFI provides micro-finance purely through mobile. This cashless model eliminates some administrative costs and makes transactions efficient for both the customers and the MFI. The uptake has been impressive and the model is believed to help reduce client groups' meeting frequency, increase time for clients and customer loyalty. Customers also have more time for their business.

The researchers proposed to establish preliminary evidence of the impact of pure mobile money on the consumers of Musoni services. The qualitative data was collected through focus group discussions and in-depth interviews while quantitative data was collected via structured questionnaires.

From the study, it was observed that mobile money, when bundled with other products, became more valuable and made the other products be more appreciated. There was an element of increased savings as a result of use of mobile money. In addition, there was an apparent shift to mobile money for other transactions.

About the authors

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Acknowledgements

Introduction

M-Pesa ('m' for mobile, 'pesa' for money), the mobile money service provided by Safaricom has become very popular in Kenya, across all age groups and socio-economic classes. Currently the count of local transactions per unit time out numbers the global Western Union transactions. Supported by a network of over 40,000 agents, over 14 million Kenyans access the easy to use service on a regular basis[1]. The usage is higher among urban Kenyans but is also significant among rural dwellers (World Bank, 2010). Sending and receiving money are the dominant uses of mobile money in Kenya, but other forms of usage, most of which were not initially intended have been observed. Usage forms include airtime purchase, temporary saving, paying bills and ATM withdrawals. (FSD, 2010),

The benefit of greater convenience, speed of transaction and lower cost of transferring funds have led to application of mobile money in other fronts. Safaricom, the mobile operator has established over 800 [2]business partnership facilitating customer to business M-Pesa payments. One valuable extended usage is in micro-financing. Almost all the micro-finance institutions (MFIs) in Kenya are now using mobile money to facilitate disbursing of loans and receiving of repayments or savings. By introducing mobile money, MFIs save their clients the trouble of traveling to receive loans or make repayments. It is a more convenient and faster approach.

Given that most MFIs had already established their brick-and-mortar operations, mobile money only complements their traditional approaches to serving their clients. Musoni ('M' for mobile and 'Usoni' for future) provides micro-finance through mobile only. It is the first MFI to offer 100% mobile phone based financial services to the lower end of the market. This is an innovative approach to micro-

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[1] The number of agents and users has been growing exponentially, changing every other day.
[2] The number continues to grow rapidly as businesses appreciate the value of electronic money. A list of the business accepting mobile money payment is available at http://www.safaricom.co.ke/images/Downloads/Personal/M-PESA/pay_bill_partners.pdf (Accessed in June 2013)

finance whereby loan disbursements, repayments and savings are made exclusively through mobile money (at the time of study, only M-Pesa was in use). Musoni is the first in the world to achieve this kind of cashless automation and has taken alternative delivery channels to a whole new level providing a paradigm shift in the way traditional MFIs operate[3]. The pure mobile-based micro-financing model eliminates some administrative costs for the MFI both in the field and in the back office. In addition, transactions are much more efficient for both the customers and the MFI. After the launch in May 2010, Musoni enrolled over 10,000 clients in its pilot phase of one year and could receive over 5,000 loan repayments in a week as of 2011. Musoni had established 3 branches, two of which are within Nairobi, the capital city of Kenya but planned to open 18 branches by the end of 2014 (Maina 2011). Rabobank, Oxfam Novib and Hivos have invested in supporting Musoni business. By the time of the study, Musoni had over 18,000 loans issued and about 8,000 clients signed up as clients. Musoni's clients are poor workers, some of who run small businesses. The clients sign up in groups and seek low value loans from the MFI.

For cash-in-cash-out services, Musoni rides on the M-Pesa agent network. Clients send and receive e-money and interact with the MFI through established Musoni agents, currently set up within Nairobi. Musoni is able to disburse loans within 72 hours of application (frequently achieved within 24 hours). Repayment are recorded instantly and automatically posted on Musoni M-PESA web interface (Maina, 2011).

Musoni believes that this model helps them reduce client groups' meeting frequency, increase time for clients and increase customer loyalty. In addition, customers have more time for their business. These benefits are believed to be true though hardly any published research is available. Analysis of data collected by Musoni shows that about 65% of all loan repayments are made outside normal

[3] http://mmublog.org/blog/microfinance-2-0/

banking hours, proving that clients value the flexibility and convenience of mobile payments approach.

As high as 80% of transactions in most African countries are cash based[4]. Handling cash is costly and inconveniencing, yet many poor and semi-literate people tend to avoid the use of technology for fear of loosing control of their money. Using mobile-based micro financing somehow "forces" Musoni's clients to adopt and increase confidence in mobile money. This study shows that gradually these poor clients do recognize the benefit of cash-less operations in their lives.

Musoni Operations

The operations of Musoni are outlined below.

- Musoni targets poor people who may not have collateral to access commercial bank credit. They should be involved in a form of business
- Customers form a group and register a name for identification
- The group is registered with Musoni and all members fill application forms (the MFI is now going paperless and will make this process electronic)
- All members must provide a mobile phone number, currently Musoni works with M-Pesa only but plans to roll out in Uganda in collaboration with two mobile money providers
- Customers, as a group begin to make mandatory deposits
- The group begins to meet regularly and invite a Musoni Officer (called a wealth creation officer[WCO]) on a regular basis
- After a period of time, individuals apply for loans guaranteed by the group. The group must approve the loan applied for them to guarantee

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[4]Research ICT Africa estimates 85%.

- A form is filled, as part of KYC for loan application. The request is keyed into an information system

- If a loan is approved, funds are received within a day through mobile money. Contractually, Musoni assures of loan disbursement within 3 days. This is unlike other MFIs which take beyond a week.

- Loans are received any time of the day in electronic form

- Repayments, done weekly, must be made through mobile money

- When a member defaults, the group bails him/her in time for the next group meeting

- The WCO comes with a printout of repayments to the meetings for confirmation (Musoni has now launched a paperless process. WCO will use a tablet)

- Results show that most repayments are done after working hours, particularly Friday evenings

- At the moment, Musoni is not a deposit taking MFI but plans are underway to get the license within the first half of 2013

Challenges with the Musoni model

The key challenges for Musoni are outlined below.

- Developing the computing infrastructure integrating with M-Pesa for back end operations has been the greatest challenge. There is no such a system in the market. Managing money through a system of this nature, particularly for the poor individuals is at the heart of Musoni's survival.

- Getting customers to make correct entries. Customers use the same phone to send money for savings and for loan repayment. Others pay for others or even save for others. Harmonizing the mobile phone numbers, recipients' accounts and purpose of funds transmitted has been very difficult, especially for the customers with low literacy levels. To differentiate a savings

from a loan repayment, Musoni expects the sender to add prefixes. For example 'si' represents 'standing in for' while 'lr' represents 'loan repayment'. But despite these guidelines, customers make mistakes or even invent their own short codes.

- Customer education, particularly on operating purely on mobile money. This has been a radical shift particularly for this class of society. Many request for the paper based alternative. Others struggle with trusting that electronic payments would work. Ultimately upon trying and verifying their transactions, they begin to like the option. The group networks and social influence have contributed to the acceptance.

- Dependence on one mobile money provider. In Kenya, M-Pesa is dominant. Sometimes system goes down and all Musoni services stall.

The solutions developed by Musoni are discussed in a later section.

Study Objectives

The study had two original objectives:

- To establish whether the clients do recognize any socio-economic impact of utilizing technology based financial services and if it drives them to consider this use less and less of cash in their other transactions
- To establish and quantify the impact of cashless mobile micro financing on the lives of the poor clients, including the apparent shift from cash to e-money on many of the clients' other transactions

Research Questions

The objectives were translated into the following four research questions:

1. What are the factors influencing adoption and continuous usage of MM based MFI services by individuals at BoP?

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2. How do demographics influence adoption of MM based MFI services?

3. What are the knowledge capabilities enabled by use of this channel for MFI services?

4. What are some of the developing or changing perceptions in relation to use of MM based MFI services?

Methodology

The researchers used both qualitative and quantitative techniques to obtain necessary data from a sample of respondents from Nairobi Musoni clients.

The researchers sampled one of the five branches, located in Nairobi. This branch was recommended by the CEO of Musoni. Initially a number between 50 and 70 was considered, but upon discussions with Musoni management and evaluating the client base, the researchers settled on a sample size much larger. The researchers randomly identified 250 respondents to be interviewed. These respondents were based in registered groups and interviews were conducted after their weekly meetings. Of the 250 questionnaires filled, 245 were considered acceptable. The other five had mistakes caused by the interviewers. Three focus group discussions involving three different groups were conducted as part of the qualitative data collection. Only six in-depth interviews were conducted, one with the branch manager and five with a group leader. Initially more in-depth interviews were planned, particularly with the field officers employed by Musoni, but due to their unavailability and a recommendation by Musoni management that they would not provide more valuable data what the branch manager had provided, the researchers decided not to interview them. The fact that the sample size for quantitative data was significantly increased, the researchers felt the entire data set would be sufficient.

Quantitative

Researchers propose structured questionnaires to obtain quantitative data that will complement the qualitative data. The questionnaires design will be guided by components of livelihoods framework. In order to operationalize the objectives, the researchers structured the study as shown in Table 1Table 1.

Table 1: Operationalizing the research objectives

What are the factors influencing adoption and continuous usage of MM based MFI services by individuals at BoP	Quantitative Questionnaire (see appendix 1)
How do demographics influence adoption of MM based MFI services?	Quantitative Questionnaire (see appendix 1)
What are the knowledge capabilities enabled by use of this channel for MFI services?	Quantitative Questionnaire (see appendix 1)
What are some of the developing or changing perceptions in relation to use of MM based MFI services?	Quantitative Questionnaire (see appendix 1) + 3 FGD (see appendix 1)

Qualitative

Researchers used Focus Group Discussions (FGDs) and In-Depth Interviews (IDIs) to collect qualitative data. The most practical way to organize the FGDs was through the groups and their membership. Groups typically have 8 to 12 members, which was a perfect fit. It appeared difficult to get members

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of different groups to come for a joint FGD. The researchers therefore settled for having FGDs arranged per group.

Within each group, there were members who had received a loan and completed it, yet others were still repaying. There was also a smaller number of new members who had not taken any loan yet. Gender distribution was generally even and so was age. All the group members were actively engaged in a small business within a reasonable distance from the Musoni office. The most convenient place to meet the group members was at their weekly meetings. So the FGDs were organized soon after their meetings.

Though the initial proposal was to separate male from the female, it became clear that the FGDs would run best by having all the group members participate in the same discussion.

The discussions were recorded, transcribed and then used in analysis to complement the quantitative data.

For IDIs, no recording and transcription was done. Notes were taken, which were used to complement the FGDs and quantitative data.

Analysis and findings

Analysis

The 245 questionnaires collected were keyed into and analysed by SPSS and Microsoft Excel. In the course of quantitative data collection, several issues came up such as adoption, barriers to use mobile money, strategies for managing transaction costs, among others. The qualitative data collection took an investigative and confirmatory approach. Most of the issues that appeared in the quantitative data, also appeared in the qualitative responses. Analysis of the qualitative data took an iterative and progressive approach. Key

messages from the FGDs were captured, coded and grouped together. In-depth thinking and mapping was done to the quantitative data already analysed.

In-Depth interviews focused on Musoni management, from where the business model was further understood, challenges and solutions discussed. The trends among the customers were also confirmed by management.

Findings

Demographics and background information

Out of the 245 respondents, there were 134 female and 111 male all coming from 34 groups. All the groups had either Swahili, English or had words from both languages. Most names had a positive and progressive meaning with examples like 'Uthiru progressive' (Uthiru is a name of a place), 'Uhuru Vision' (Uhuru means 'independence'), 'Turning point', 'Tumaini alliance' (Tumaini means 'hope''), 'Pamoja Tujijenge' (means 'lets develop ourselves together'), 'Mavuno' (means 'harvest'), 'Inua' (means 'lift'), 'Amka' (means 'wake up').

Majority of the respondents were married (190) and almost half were high school dropouts (109). The youngest was 21 while the oldest was 63.

Most of the respondents (209) have preferred in the past to borrow from ASCA/ROSCAs. The least used option is a bank, while a reasonable number opted for MFIs or from friends and family. This distribution is typical of financial service usage at the base of the pyramid.

Appreciation of the value of electronic money

Almost half (108) of the respondents had been member of another MFI, but only 44 were currently members of another MFI. This drop was significant. During focus group discussions and in-depth interviews, those who had withdrawn membership from other MFIs said Musoni's pure mobile based services were attractive enough to make them shift. Expressions such as "Musoni is best" or"I don't need another MFI" were common during discussions. Upon analyzing the comments from respondents about what they felt about Musoni and

its services, it became apparent that the use of mobile money over and above the fact that the MFI gave them

good service was significantly influencing their choice. Table 2Table 2 summarizes the comments received and

what they could be attributed to.Those who retained their accounts in other MFIs were still repaying loans or

appreciated the value of having an alternative account.

Table 2: Comments about how consumers felt about Musoni

Observation by respondents	Attributed to
Cheap/affordable	Musoni Services
Easy to access credit	Musoni Services/Mobile phone based
The loan interest is low	Musoni Services
Good Service	Musoni Services
Very efficient	Musoni Services/Mobile Money
Convenient	Musoni Services/Mobile Money
Faster to get credit	Mobile Money
Quick response	Mobile phone based/Mobile Money

The respondents were asked why they thought the use of M-Pesa for loan repayment was better than cash.

Over 75% of them said they found the option faster, time saving and convenient. It was interesting to note

that 34% of these respondents felt that use of M-Pesa saved them money when repaying their loans.

Asked specifically why they preferred Musoni over any other MFI, the respondents significantly agreed with

factors associated with M-Pesa. These responses are shown in Table 3Table 3.

Table 3: What makes you prefer Musoni over any other MFI?

	Percentage of respondents agreeing
I get my money faster	85%
Helps avoid handling too much cash	37%

Services are more Convenient	73%
Receiving loan in M-Pesa is safer	59%
Other	

Among other reasons, safety is ranks highest as a reason why users would rather keep money in electronic form (see Table 4). Besides safety, a number realize that electronic money is expensive to convert back to cash or that they would be transacting through their phones after all, so they would rather have some money in that form any way. Table 4Table 4 summarizes the reasons why the respondents preferred to keep money in M-Pesa.

Table 4: Reasons why respondents keep money in M-Pesa

	Percentage
It's expensive to change back to cash	27
It is safer remaining in M-Pesa	73
I will need to transact in M-Pesa after all	40
I don't keep money M-Pesa	8
It acts as a savings account	2

Discussions with Musoni management and loan officers indicated that customers rank security as the highest parameter. This benefit is inherited from M-Pesa. This is consistent with the summary in Table 4Table 4. The respondents, for lack of appropriate and convenient financial instruments, rely on cash for transaction and by implication have to store their money in cash. Getting a safer way to store their money, particularly credit received from a financial institution that they will have to repay goes a long way in improving their financial lives. Mobile money is received on phone, making it very secret and personal, something greatly valued.

Apparent shift to electronic money

The apparent shift to prefer electronic money by the poor was of much interest during this study. It would be assumed that if the respondents saw benefit in using mobile money for Musoni transactions, they would use mobile money for other transactions as well. This section summarizes the finding on this issue.

As much as 90% of the respondents said they now keep some money in M-Pesa for other uses besides loan repayment. The amount kept in M-Pesa and used for other things ranged as shown in Figure 1Figure 1. In exact amount, the respondents indicated that it varies almost uniformly as shown on Table 5Table 5.This position was confirmed during the focus group discussions where respondents indicated that over time, the amount they have kept in M-Pesa has been increasing.

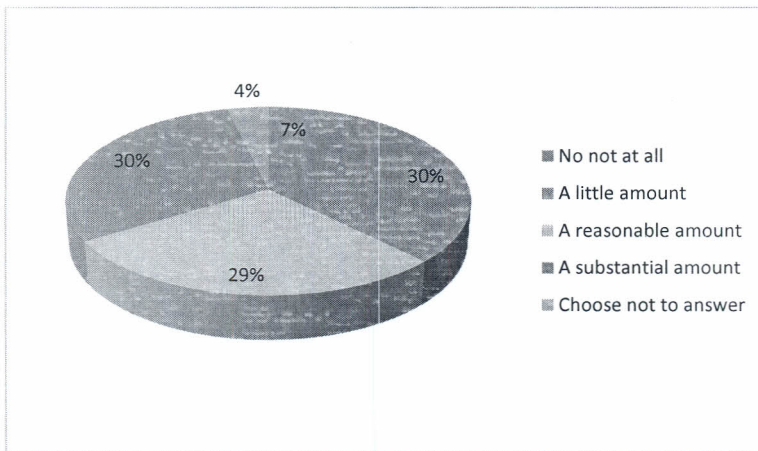Figure 1: Keeping money in M-Pesa for other uses besides loan repayment

Table 5: How much money respondents keep in M-Pesa at a time

	Percentage
Less than 1,000	19
Between 1,000 and 2,000	23
Between 2,000 and 3,000	6

Between 3,000 and 4,000	7
Between 4,000 and 5,000	6
Above 5,000	22
Fluctuates a lot	11
Choose not to answer	6

The respondents were then asked what services they were using mobile money for. The options provided were based on the services offered by M-Pesa. Purchase of airtime was the most popular at 86% of the respondents. Other services like bill payment, Okoa Jahazi (airtime bought on credit), saving money for future use, paying for goods (form of m-commerce) ranged between 45% and 55% of the respondents. Less than 2% were using M-Pesa for Musoni loan repayments only. A national representative study done by Financial Sector Deepening (FSD) in 2009 revealed that purchase of airtime was the most common used service of M-Pesa besides sending and receiving money (FSD 2009). Okoa Jahazi had not been introduced while bill payment was not a well established service at that time. Saving money was second most popular use of M-Pesa which is somehow consistent with this study. Asked if they have increased their M-Pesa usage since they started receiving loans from Musoni, 82% answered affirmatively.

If the respondents had a choice of using mobile money for all transactions in the future, 68% answered affirmatively while 19% preferred to keep using cash and another 13% were not sure. During focus group discussions and in-depth interviews, respondents confirmed that their appreciation of electronic money was after they started using Musoni services. This was almost three years since M-Pesa was launched. Respondents also indicated that when M-Pesa got bundled with a more complex financial service (in this case MFI services), they began to think more about the value of electronic money. The fact that loan officers spent time with them to explain technical details and give them advice about financial management; the low income earners began to rationalize several aspects of mobile money.

The respondents were also asked what they use M-Pesa for besides personal Musoni loan repayments. Other options were obtained from M-Pesa services available through the mobile phone. Musoni customers were using mobile money to do several other transactions, with buying of airtime being the most additional feature used. As little as 3% of the respondents indicated that they use M-Pesa solely for Musoni services (See Figure 2).

Figure 2: Usage of M-Pesa by the Musoni clients
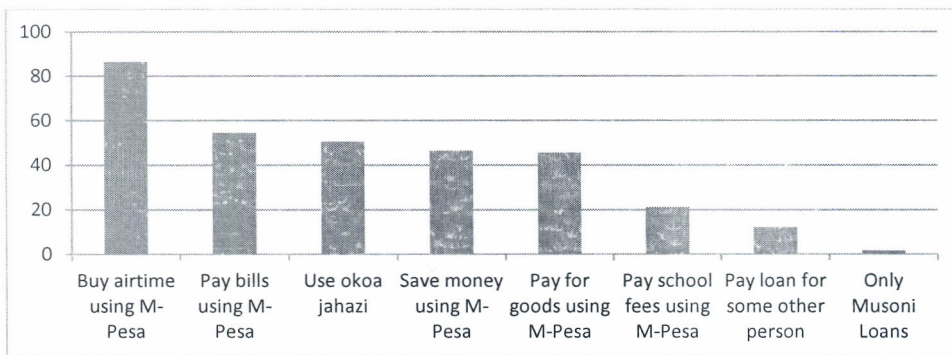
Mobile money as a better channel for managing finances

In the book 'Portfolios of the poor' the authors clearly outlined that one reason the poor remain in poverty is because they lack appropriate financial instruments (Collins, et al. 2009). A number of responses in this study revealed that these poor users consider M-Pesa helping them manage their money better. Originally the mobile money product was designed to facilitate money transfer, but these users apply mobile money in multiple ways include temporarily storing money.

Upon receiving their loans, the respondents do not withdraw all cash at once. Most of them (60%) withdraw the amount they need and retain the rest in M-Pesa until they are ready to use it. Cohen and Stuart (2011) studied low-income individuals and their use of M-Pesa in Kenya and found that 94% of transactions done by the respondents were still in cash. They also found out that the e-money loop was very short, with most electronic money received (75%) likely to be withdrawn within a

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day(Cohen and Stuart 2011). The participants in the Cohen and Stuart study were simply M-Pesa users while in this study, which focused on the behaviour change of M-Pesa users who were also Musoni services users, confirmed that the bundling of the financial service was creating a different view of e-money and its use.

As a tool for managing finances, the Musoni customers confirmed improvement of certain aspects like the ability to conveniently track their repayments. 70% of the respondents felt that tracking of loans and repayments was better and easier with M-Pesa, 66% felt that receiving loan using M-Pesa was better than by cash or cheque or bank deposit and a 67% thought that repaying their loans using M-Pesa was better than doing so by cash.

The tendency to keep money in electronic form even when they don't intent to use it to repay loans immediately indicates a preference to use mobile money as a channel to manage funds. Figure 3Figure 3 shows that only 9% were not keeping any money in electronic form.

Figure 3: Tendency to keep money in electronic form
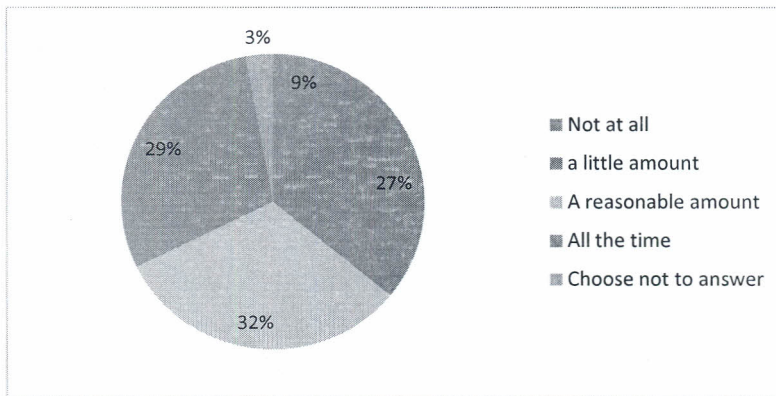
Barriers to using mobile money

In as much as these customers appreciate the value of mobile money, the utilization is not 100%. There are factors inhibiting the usage. The first most pronounced barrier is the cash culture and the

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second is the transaction cost (See other factors in Figure 4Figure 4). The respondents asked to give reasons why they do not use mobile money as often and instead prefer to convert back to cash, 44% of the respondents said their main reason was because recipients prefer cash. During the focus group discussions and in-depth interviews, respondents indicated that there are no systems to encourage use of electronic money, particularly mobile money. For example, it is very unlikely that the respondents would pay for goods using mobile money arguing that merchants to not accept this mode.

The second most important factor (40%) was the transaction cost. Currently, for every loan repayment that a customer makes, a transaction fee (the tariff is set between KShs. 0 and 30 depending on the amount being sent and was recently revised upwards, but ideally most of the fee paid by customers is KShs. 30.00) is charged by the mobile money provider. Musoni absorbs a third of the transaction fees. The MFI made a business decision not to entirely absorb this fee mainly because the convenience provided to the consumer outweighs the amount charged. As the MFI builds the client base, the transaction fee will ultimately entirely be paid by the consumer. Given that customers have to convert back to cash when paying other people, they prefer to withdraw as much as possible, so as to minimize the withdrawal transaction fees. Musoni absorbs the transaction fees for disbursing loans. Some respondents (about 25%) had figured another way to reduce the transaction cost. They move money through their phones to their bank accounts before withdrawing. In most cases, an ATM withdrawal costs about KShs. 30.00 to withdraw up to KShs. 40,000.00. There is however a transaction fee for moving money from the phone to the bank account. At the time of the study, 10 banks were providing this service charging a fee that varies from bank to bank. Most respondents said they had bank accounts with Equity bank, currently the largest bank in terms of account holders. Using M-Kesho, a service provided in partnership with M-Pesa, customers can move e-money to a physical bank account.

Figure 4: Why Musoni users move e-money back to cash
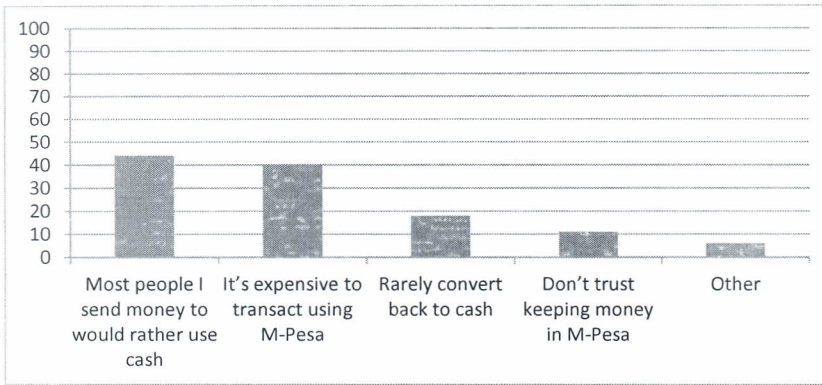
Managing the Musoni challenges

- *Developing the computing infrastructure integrating with M-Pesa for back end operations has been the greatest challenge.* Musoni has invested heavily in developing the software. It has undergone several tests and reviews. Musoni has a loan tracking system that captures both client data and transaction data. There is also an API/Interface application that that connects with the M-Pesa transaction verifying system.

- *Getting customers to make correct entries.* Musoni approached this from two fronts. The first is to refine the programming to make the software intelligent enough to figure out the intentions of the sender. Over time, the system has been refined to fix all customer requests and errors. The second front was to educate the senders, who after a while have become more accurate.

- *Customer education, particularly on operating purely on mobile money.* This has been a radical shift particularly for this class of society. Many request for the paper based alternative. Others struggle with trusting that electronic payments would work. Ultimately upon trying and verifying their transactions, they begin to like the option. The group networks and social influence have contributed to the acceptance.

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- *Dependence on one mobile money provider.* There is no option in this case. The good thing is that M-Pesa does not go down for long. At most a day or over the weekend when the system is being upgraded or serviced.

Benefits of a pure mobile based approach to the MFI

Though this was not part of the study, management raised several aspects they value about the mobile money approach. The following are the benefits of electronic transactions from Musoni management viewpoint.

- prevent fraud from staff as well as clients;

- speed up and streamline processing of requests;

- help WCOs to allocate more time in building relationships with clients and addressing business issues as opposed to reconciling money related issues;

- reduce cost of operations e.g. no need for a strong room or queues at the branch level; and

- much easier to scale, adding branches across the country once the business model is streamlined.

Conclusions and recommendations

To highlight some of the findings so far, we summarize responses from some of the key questions asked.

Lesson 1: Mobile money, when introduced and bundled with other products, it begins to make other products meaningful to BoP market.

a) There is a shift from informal methods, including ASCAs and ROSCAs by the respondents to borrow from the MFI. The shift is not so much that a formal MFI has come around, its because it offers mobile money. In addition, as much as 26% of the respondents were members of more than one MFI but are now with Musoni only.

b) 37% of the respondents choose to stick with M-Pesa because it uses mobile money.

a) 77 % of the respondents do have extra 'idle' electronic money in their phones.

b) 79% keep some amount in electronic form for a specific use in the future use besides loan repayment.

a) As many as 80 % of the respondents purchase their airtime using mobile money.

b) Only 27% of the respondents convert their loans received into electronic form back cash.

c) Since beginning to use Musoni, 81% of the respondents are now using mobile money more than they were using before.

There are barriers to going cash less

The current model of transaction cost does not encourage

a) Recipients predominantly prefer cash

b) Transaction cost is high, particularly when users withdraw money in small bits over time

a) 49% of the respondents find M-Pesa safer than other alternatives they are accessible to.

b) 45% make it a pre-condition for an MFI to have mobile money before they can join

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