

# **Recent Developments for Research on Mobile Money with Special Attention to Microenterprise Development**

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# Motivation

- **Limited access to financial services in Sub-Saharan Africa:**
  - Data from the Global Financial Inclusion (Global Findex, 2011) database show that 24% of adults in Sub-Saharan Africa have an account at a formal financial institution
    - The most frequently cited reason for not having a formal account is lack of enough money to use one; but cost, distance, and documentation requirements are cited by more than 30% of non-account-holders
  - In a recent study (2011), Gallup found that in 11 Sub-Saharan Africa countries, 32% of households reported having received internal remittances (the majority of which were received through informal channels); only 4% received international remittances

- **Mobile money typically allows:**
  - Cashing-in money to a cell phone account (through a local agent)
  - Using e-money to transfer to any person through a cell phone
  - Paying for products at shops
  - Buying airtime
  - Cashing-out e-money (from a local agent)

- **Mobile Money has been a huge success in recent years**
  - **In Kenya, M-PESA got 60% of adult population conducting annual transactions worth 10% of GDP two years after inception in 2007**
- **In Uganda**
  - Four of the five mobile phone providers offer mobile money services (MTN m-money, M-Sente from UTL, Airtel m-money, and Warid Pesa from Warid)
    - MTN was the first to launch m-money services in 2009 and remains, by far, the market leader
    - By December 2011, 2.9m accounts (8% of the population)
  - Gates Foundation survey in 2012:
    - One in five households has at least one user of m-money services
    - Half of households with registered m-money users store money on their m-money accounts
    - Remittances are primarily used for routine financial support among relatives living in different households
    - 44% of rural nonusers said they never use m-money because they cannot find an agent close to home

# Literature on mobile money (M-PESA)

- **Mbiti and Weil (2010):**
  - While they find little evidence that people use their M-PESA accounts as a place to store wealth, their results suggest that M-PESA improves individual outcomes by promoting banking and increasing transfers
- **Jack and Suri (2011):**
  - While describing the M-PESA experience, raise a number of interesting potential economic effects and underlying mechanisms of mobile money
    - It simply facilitates trade
    - By providing a safe storage mechanism, M-PESA could increase net household savings
    - Because it facilitates inter-personal transactions, it could improve the allocation of savings across households and businesses
    - M-PESA could affect the ability of individuals to share risk and to make more efficient investment decisions

- **Jack and Suri (2013):**
  - Does mobile money improve risk sharing?
    - Per capita consumption falls for a non-user household when they experience a negative income shock (7-10pp), as it does for households who lack good access to the agent network
    - M-PESA user households experience no such fall in per capita consumption
    - Users of M-PESA achieve some of these improvements in their ability to smooth risk via remittances: in the face of a negative shock, user households are more likely to receive remittances (13pp more likely, equivalent to 6-10 percent of annual consumption)

# Project 1: Introducing mobile money in rural Mozambique – impact on remittances and savings

- **Research questions:**
  - Economic impacts of access to mobile money:
    - Adoption pattern
    - Savings
    - Remittances
- **Methodology:**
  - Randomized field experiment
    - 102 locations in rural (Southern) Mozambique
    - 51 with newly-recruited mobile money agents, community-wide dissemination (popular theatres and community meetings), individual dissemination to a rural sample plus their corresponding migrants in Maputo
  - Measurement through administrative records and household surveys





Agent recruitment





Community theatre and meeting





### Conta mini • Auto-Registo

**01** Aceda ao Menu mKesh  
Digite **\*500#**  
Prima a tecla OK e Prima a tecla de chamada

**02** Escolha Português  
1 Português  
2 English  
3 Sair  
Prima a tecla OK seguido da tecla 1 e enviar

**03** Escolha Auto-Registo  
1 Auto Registo  
2 136  
0 Voltar  
Prima a tecla OK seguido da tecla 1 e enviar

**04** Insira o seu Nome  
Auto Registo Nome:  
Arnaldo  
Prima a tecla OK seguido do seu Nome e enviar

**05** Insira o seu Apelido  
Auto Registo Documento:  
1 BI  
2 Passaporte  
3 DIRE  
4 Carta Condução  
5 Cedula Militar  
6 Cartao Eleitor  
Prima a tecla OK seguido do seu Apelido e enviar

**06** Escolha o tipo de documento  
Auto Registo Documento:  
1 BI  
2 Passaporte  
3 DIRE  
4 Carta Condução  
5 Cedula Militar  
6 Cartao Eleitor  
Prima a tecla OK seguido do tipo do documento disponível e enviar

**07** Insira o número do documento  
Auto Registo Nr. Documento:  
Prima a tecla OK seguido do número do documento e enviar

**08** Confirme os dados  
Auto Registo Arnaldo Siteo Concluiu o registo de adesão com sucesso. Favor de aguardar pela confirmação por SMS Gratos pela preferência  
1 Aceitar  
2 Cancelar  
Prima a tecla OK seguido de: 1 Para Aceitar ou 2 Para Cancelar e enviar

**09** mKesh confirma o registo

### Como Depositar Dinheiro

**01** Aceda ao Menu mKesh  
Digite **\*500#**  
Prima a tecla OK e Prima a tecla de chamada

**02** Escolha Depositar  
1 Levantar  
2 Depositar  
3 Transferir  
4 Comprar  
5 Pagar  
6 mConta  
7 136  
8 Sair  
Prima a tecla OK seguido da tecla 2 e enviar

**03** Insira o número de celular do Agente  
Depositar Celular Agente:  
82\*\*\*\*\*  
Prima a tecla OK seguido do número de celular do Agente e enviar

**04** Insira o montante  
Depositar Montante:  
100  
Prima a tecla OK seguido do montante e enviar

**05** Confirme os dados  
Depositar no Agente: 82\*\*\*\*\*  
MERCERIA RAMY  
Montante: 100 MTs  
1 Aceitar  
2 Cancelar  
Prima a tecla OK seguido de: 1 Para Aceitar ou 2 Para Cancelar e enviar

**06** Insira o PIN  
Depositar Pin (5 digitos):  
\*\*\*\*\*  
Prima a tecla OK seguido do PIN de cinco (5) digitos e enviar

**07** Obtenha confirmação do agente  
Depositar O seu pedido de depósito de 100 MTs foi enviado ao 823079167, MERCERIA RAMY Solicite confirmação ao Agente

**08** mKesh Confirma o Depósito  
Depósito Efectuado Montante: 100 MTs Saldo disponível 3429,00 Ref: 8334 Gratos pela preferência

Some operations conducted as part of individual treatment:  
self-registration, cash-in, checking balance, buying from agent



- **Preliminary results (from administrative records, and initial reactions to dissemination):**
  - Adoption
    - 64 percent of treated respondents have made transactions after initial dissemination efforts
  - Information and trust
    - Clear improvements in financial literacy and knowledge about mKesh
  - Behavioral measures
    - Overall marginal willingness to send remittances (by all channels) increased
    - Clear marginal willingness to use mKesh for savings and remittances, substituting for alternative channels
- **Next steps: analyzing follow-up household survey data**



## Project 2: Access to savings and financial literacy for microentrepreneurs in Mozambique

- **Research questions:**

- What is the impact of access to formal savings through mobile money (offering interest) on microentrepreneurs savings, investment and growth?
- What is the impact of a financial literacy module?
- Are there complementarities between the two?

- **Methodology:**

- Randomized field experiment
  - 1200 market vendors in the Maputo area
  - 400 with access to savings account on mKesh; 400 with financial literacy module; 400 with both; 400 control
- Measurement through administrative records and firm surveys

- **Access to savings treatment:**
  - Information about mKesh, individual registration and testing (in line with what was done in the rural project)
  - Payment of 5% of the average mKesh value kept in their account each month, over several months
- **Financial literacy treatment:**
  - Financial literacy module, taught over weekly visits to microentrepreneur, based on manual
    - Simple accounting procedures
    - Separation of accounts
    - Business objectives
  - Logbooks distributed to microentrepreneur during the first visit
  - Comic strip distributed to microentrepreneur during the first visit

# BÓNUS POUPANÇA

Pôr dinheiro no



agora dá mais dinheiro!

Como  
funciona  
isso?!



Recebe 5 meticais por  
cada 100 meticais que  
conseguir **MANTER** na sua  
**CONTA MKESH** durante 1  
mês!

Vamos dar-lhe este  
**BÓNUS** durante 3 meses!

\*Os bónus são pagos em cada mês, mas pode existir um desfasamento de dias entre o final do mês e o pagamento do bónus.

**APOIO:**



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Growth Centre

**mcel**







## **Manual de** Formação dos Micro-Empresários nos Mercados Urbanos DA CIDADE de Maputo





# Logbook examples

## Livro 3

Exemplo:

- No dia 30 de Março de 2012, o Senhor Ezequiel quer preencher a Folha 3 (folha de registo diário).
- Sabendo as compras, vendas e clientes a crédito do dia 30 de Março, registados na folha 1 e 2, e sabendo que o Senhor Ezequiel pôs 400 MTn no xitique, depositou 50 MTn na sua conta mKesh, e pagou as despesas de eletricidade em 700 MTn.
- Ainda mais, o Senhor Ezequiel emprestou 300 meticais ao amigo Joaquim, para este puder pagar as despesas da escola do filho.

Como é que o Senhor Ezequiel faz o registo ao final do dia?

Livro 3 – Registo ao final do dia

Data	Compras Valor Total – Custos Directos	Vendas Valor Total – Receitas – Pago	Vendas Valor Total – Receitas – Não Pago (a crédito)	Despesas com a loja (eletricidade, taxa de mercado,...)		Transferências/Empréstimos		Poupança		
				Valor	Descrição	Valor	Pessoa - Descrição	Xitique	mkesh	Banco
30/03/2012	10200 MTn	7000 MTn	500 MTn	700 MTn	Electricidade	300 MTn	Joaquim – escola do filho	400 MTn	50 MTn	-



## Uma semana depois

Dona Joana: sabes, usei todo dinheiro de ontem para guevar e para o matabicho que tomamos na barraca da cunhada. Podes pagar o gay gay para mim? Nem sei o que vamos comer em casa se eu não vender hoje.

Comadre, aprendemos que não se usa o dinheiro do negócio para coisas de casa. Não devias ter usado o dinheiro de ontem para o matabicho. Se separares bem o dinheiro do negocio e dos gastos pessoais dificilmente terás falta de dinheiro para guevar ou mesmo para comprar comida.



Mercado grossista



Ahaaa... eu misturo tudo. O negócio é meu. Epah! Não vos conto, o dinheirinho que guardo na lata foi roubado. Só pode ser o bêbado do Sito. E emprestei ao meu irmão 1000,00mt para o funeral. Assim não tenho como guevar amanhã, alguém me tcheneca?

Se não queres cair e pedir esmola na rua é bom não emprestar mais dinheiro do negócio, nem mesmo para teus familiares, negócio é negócio não se mistura com coisa da casa. Outra coisa, enquanto guardares dinheiro o dinheiro em casa é mais fácil gastar Elisa, o dinheiro guarda-se numa conta poupança



- **Piloting results (baseline is now ongoing):**
  - Testing mKesh with microentrepreneur is a crucial component of the savings treatment; interest is complex to explain; lack of mKesh agents within market affected negatively trust towards the service
  - Some problems regarding the independent filling of the logbooks; no vendors lost the manual or forgot when the research team was meant to revisit them; microentrepreneurs read the manual at home and shared the information with other members of their household
  - Vendors subject to both treatments seem to be most enthusiastic
- **Next steps: treatments initiated and follow-up**

# Project 3: Access to savings to incentivize fertilizer use for farmers in Mozambique

- **Research questions:**
  - What is the impact of access to savings accounts framed to invest on fertilizer for farmers in Manica Province in Mozambique?
    - On adoption
    - On savings
    - On investment in fertilizer
  - How does exposing social networks to treatment affect outcomes?
- **Methodology:**
  - Randomized field experiment
    - 200 farmers (each one identifying two additional friends, 600 in total) in Manica Province (Mozambique)
    - 100 farmers are given access to a savings account offering interest through mKesh; all 200 farmers are given information about mKesh; half of treatment and half of control had their friends treated as well
  - Measurement through administrative records and household surveys



# BÓNUS-POUPANÇA PARA A SUA MACHAMBA!

AO GUARDAR DINHEIRO NA SUA CONTA



RECEBE:

FERTILIZANTES PARA A PRÓXIMA CAMPANHA!

20 MTn EM Fertilizante POR CADA 100 MTn GUARDADOS  
NA SUA CONTA *mKesh*

\* Promoção válida por três meses a partir da data de entrega deste folheto.

\*O bónus é pago no final dos 3 meses em fertilizante para a sua machamba.

APOIO:



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- **Preliminary results (from administrative records):**
  - 46% of the farmers in our sample used mKesh after we left
  - Paying interest on the average mKesh balance raised the average saving level by 30pp
  - Providing mKesh accounts to close friends of the farmers in our sample increases mKesh usage of the farmers in our sample by 17pp
- **Next steps: follow-up survey and fertilizer take-up**

# Ways ahead and (tentative) policy implications

- Communication of mobile money services is of crucial importance
  - There is a sense that the existence of the technology/services is enough for adoption
  - But adoption is a function of investing in communication, and findings effective ways to communicate (rigorous testing is key)
- Regulators are sometimes too conservative, namely regarding finding ways to offer interest-bearing accounts to mobile-money users
  - There is great potential in embedding services from fully-fledged banks and financial institutions in the mobile money platforms
- Remittances are the obvious channel of impact of mobile money (enormous decrease in transaction costs), namely through enlarging networks for insuring idiosyncratic risk
- But mobile money to incentivize savings should not be disregarded (for urban vendors or for farmers)
  - Complementarities with financial literacy are likely