

Impact of the use of mobile banking on the household's welfare and performance of small micro enterprises (SMEs): an experimental approach in a suburb of Dakar, Senegal

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Agenda

- Abstract about the project
- Research Questions
- Literature Review .
- Methodology to be used

Abstract about the project (1/3)

The intervention has two components. **The first is to randomly select 300 households with low incomes.**

The richest households will have 1.10 for lower Line poverty in Dakar. These households will be divided into two groups of 150.

In each household one person will be drawn. The first group, the treatment group, will receive an account Orange money containing \$22 USD.

Abstract about the project (2/3)

- This group will be informed of all possible services with the m-banking. The second group, control group, will receive no treatment.

The second component concerns the SMEs.

- For this component, 300 SMEs will be selected randomly in several economic sectors.

Abstract about the project (3/3)

- Two groups of 150 SMEs will be formed randomly.
- The first group, the treatment group, will receive the same treatment as that of households (previous slide).
- In addition, we incite the SMEs' suppliers, employees to use the M-banking. The control group will receive no treatment.

Research Questions (1/1)

Main objective

The objective of this research is to measure the impact of the use of mobile banking on the welfare of poor households and performance of SMEs.

Specific questions:

1. The volume of household savings
2. The welfare or living standard of households (spendings)
3. Easier access to financial services (micro payments, remittances)
4. The volume of remittances between households
5. Performance for very SMEs (turnover, savings, number of employees ...)
6. Poverty and household vulnerability

Literature Review (1/13)

The potential of mobile phone use are widely exposed in the literature.

□ The impact of mobile phone use on enhancing governance issue, politics and community life (Suarez, 2005; Kimaro, 2006).

□ In the financial field, the use of telephony known under the term of m-banking and this innovation allows consumers to access the Internet via a wireless device and able to handle transactions (Varshney et al 2010; Weitenberner et al 2006, Wei et al 2009).

Literature Review (2/13)

- ❑ The M-banking allows customers to interact with the bank through a mobile dispositif (Barnes et al 2003; Scornnavaca et al 2004).
- ❑ The literature on mobile banking has focused on models of provision for this service, the determinants of adoption and the impact of this innovation on the economic and social development.

Literature Review (3/13)

1. Models of service delivery m-banking (1/1)

- The Literature holds 4 main « Business models »:
Bank centric model, Operator centric model,
collaborative model and Independant service
provider model (Chaix, L et Torre D 2010).

Literature Review (4/13)

2. Determinants of the adoption of m-banking (1/4)

- The large number of unbanked and the boom in mobile telephony reminds some researchers that the solution come from mobilebanking (Assadi Dj., A. Cudi, 2011)
- Trust in m-banking service is a major factor in its adoption (Chaix, L; Torre, D 2010).

Literature Review (5/13)

2. Determinants of the adoption of m-banking (2/4)

- ❑ Security, ease of use and speed in financial transactions are also determinants of M-banking adoption (Chaix, L and Torre, D 2010).
- ❑ The technical aspect is not a major barrier to the adoption of M-banking (Hughes et Leonie 2007 et Vaughan 2007).

Literature Review (6/13)

2. Determinants of the adoption of m-banking (3/4)

- ❑ Moreover, the utility aspect and the social context are far more relevant than the technical aspects (Ivatury and Pickens 2006).
- ❑ Beyond the technical, organizational and institutional adoption of M-banking, the probability of adoption can be determined by other factors such as income, age, gender, education level, geographic location.

Literature Review (7/13)

2. Determinants of the adoption of m-banking (4/4)

- A recent study by Pam, Z (2011) in Burkina Faso has highlighted the factors explaining the adoption of mobile telephony. His analysis has focused on demand and not on usage.
- He finds that income positively influences the probability of adoption of the telephone in Burkina Faso. Similarly, age, educational level and geographical location influence positively the mobile adoption in this country.

Literature Review (8/13)

3. Potential impact of Mobile banking(1/6)

- ❑ Studies on the impact of m-banking are almost nonexistent in Subsaharan Africa countries because of the novelty of the phenomenon.
- ❑ One of the few contributions made to date is for Porteous (2007) in which the impact is implemented using a border access that divides people into two groups.

Literature Review (9/13)

3. Potential impact of Mobile banking(2/6)

- A group located above the border with means (permanent monthly income from official sources) and with a normal bank account and using the m-banking by necessity.
- Another group located below the border using the m-banking as an alternative or complement to other traditional services.

Literature Review (10/13)

3. Potential impact of Mobile banking(3/6)

- Porteous has concluded that m-banking has had an impact but low in South African citizens.
- Although the impact is very limited, a large number of studies have been devoted to the satisfaction of users of these new applications (Kung Chang Lee, Chung Nambo, 2009).

Literature Review (11/13)

3. Potential impact of Mobile banking(4/6)

- ❑ In their study, Assadi Dj. and A. Cudi (2011), have attempted a qualitative approach to highlight the potential impact of the development of mobile phone on the dissemination of financial services to unbanked workers.
- ❑ Impact on securing resources by avoiding the use of informal savings collectors often risky.

Literature Review (12/13)

3. Potential impact of Mobile banking(5/6)

- The m-banking allows rural workers who are in town to make money transfers to their families and keep in touch with them constantly.
- Impact of m-banking is considerable both for the bank and the customer: Grimes (2010), consider a transaction by phone induce a cost of \$0.08 for the bank, which is considerably lower than that of an agency transaction (\$ 4) or transaction by call-center (\$ 3.75).

Literature Review (13/13)

3. Potential impact of Mobile banking(6/6)

- Beyond the cost of service, the M- bnking could abolish time and distance for low income populations (Mobey Forum 2008) , including those living in accessible aera.

Methodology to be used (1/5)

Targets of this research live in the suburb of Dakar in Senegal. The sampling strategy consists of three parts.

1. Draw the main sample,
2. Identifying households respecting the criterion of selection , the distribution of household by the existence of an entrepreneur or not in the household;
3. The constitution of the treatment group and control group.

All selections are random.

Methodology to be used (2/5)

Transmission's channels of using m-banking :

- **Target 1: increase savings' volume**

1. Incentive to save
2. Save money for micro-payments of certain bills (water, electricity, phone, subscription TV)
3. The postponement of consumption that could increase savings
4. The gain on the cost of money transfers
5. The gain in communication charges (airtimes spendings) during promotional periods

Methodology to be used (3/5)

- **Target 2: Improving the welfare**
 1. Increase spendings of consummation
 2. Saves time in transactions and invoices' payment
 3. In easier payment's process
 4. Ability to recharge airtime at any time (in case emergency: night, no point of sale credit card)
- **Target 3: services use of micro payment**
 1. Saves time and money
 2. Safety and speed
 3. Simplicity and ease of use

Methodology to be used (4/5)

Channels transmission for SMEs

In addition to the channels identified above :

1. Lower input costs

- The ease in product purchases (payment providers)
- Easy to manage fixed costs (payment of salaries, invoices)
- Save money in transactions of goods and services (reduction of travel costs)

2. Saving time in transactions lead more working time.

- Speed of transactions in goods and services (deposit or money transfer)
- Saves time in transactions in goods and services (reduction of travel costs)

Methodology to be used (5/5)

We use difference in differences method for each specific indicator (S)

number	Indicators
1	The volume of savings
2	The volume of monthly expenses
3	The volume of remittances
4	The number of hours used for the payment of bills, transfer money to an individual or the payment of suppliers
5	The proportion of people who have adopted the m-banking
6	The turnover of the SME

$$y_{it}^S = \alpha^S + \beta^S T_{it} \times t + \rho^S T_{it} + \alpha^S t + \sum_{k=1}^K \gamma_k^S X_{it}^S + \epsilon_{it}^S$$

Where i is the individual, t is time, $T = 1$ if the individual is treated and 0 otherwise, X are the characteristics of the individual.



THANK YOU