

**THE ROLE OF MOBILE MONEY IN FACILITATING RURAL ACCESS TO
FINANCIAL SERVICES AND THE RESULTANT EFFECT ON HOUSEHOLD
WELFARE: EVIDENCE FROM UGANDA**

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September, 2015

Summary

It is generally believed that financial sector development has a positive association with economic development and that access to financial services helps people to better manage funds, raise capital for productive investment and smooth their consumption. However, a large proportion of the population in developing countries is excluded from the formal financial services and this curtails their capacity to undertake productive ventures to uplift their livelihoods. Various reasons explain the majority exclusion, including long distance to the financial institutions which imposes high costs in terms of transport fees and travel time, high service cost and the cumbersome documentation required to open bank accounts. These constraints often disproportionately restrict the rural poor from using financial services especially given the relative urban concentration of formal financial institutions in developing countries. Those excluded from the formal financial system often resort to informal and risky alternatives like burying money underground as a form of saving, borrowing from individual money lenders at extremely high interest rates and physically travelling long distances to hand-deliver remittance funds.

The recently introduced mobile money service which allows users to make basic financial transactions over the mobile phone has been steadily bridging this gap, notably in Africa. The rapid rate of dissemination of mobile money is supported by four major considerations. First, with over 60 percent of Africans owning at least one mobile phone, the mobile money service is more accessible by the rural poor and the establishment cost is relatively lower than that of formal financial institutions which would need to incur high fixed costs to establish branches in rural locations with uncertain demand for bank services. Secondly, general lack of access to formal financial platforms presented mobile money as a viable alternative. For the majority of the rural poor with limited or no access to the formal financial services providers, mobile money is by far the most viable financial product available to them. This partly explains its relatively higher dissemination speed in Africa than in other regions like Asia. Third and closely linked to the previous consideration is that the widely distributed mobile money agents (cash-in and cash-out centers) across rural communities makes mobile money services attractive to the rural populace as it reduces the associated travel time and transport costs of using financial services. Lastly, for some specific financial services, the service fees charged by mobile money are considerably lower than that of commercial banks and MFIs, although this largely depends upon the amount transacted.

This dissertation investigates whether mobile money improves the financial behavior of rural households in Uganda by bringing services closer to them and the resultant welfare effect of access to financial services. Data used in this analysis is drawn from two surveys conducted in Uganda; Research on Poverty, Environment and

Agricultural Technology (RePEAT) conducted in 2012 and the Mobile Money Survey conducted between June and July 2014 (hereafter, MM2014). These surveys focus basically on rural households who often tend to be financially excluded and thus they offer a good sample for this analysis. The study first investigates whether the presence of a mobile money user in the household has an effect on the likelihood of saving and borrowing money and receiving remittances from family members and friends. The study then analyzes the difference in the respective amount of money saved, borrowed and received in remittance between mobile money user-households and non-users, conditional on using these services at all within one year before the survey. Finally, the study analyzes the welfare improvement measured by a change in household consumption expenditure per adult equivalent, brought about by the adoption of mobile money.

In both RePEAT and MM2014, comprehensive household-level and community-level information was collected. Household-level information drawn from RePEAT includes household consumption expenditure from which welfare indicators are constructed, household demographics, land and household asset holdings, usage of mobile money services, health, education and crop production. The community survey captured information on the condition of roads in each village and the physical distance from the village center to main markets and district headquarters where most services (including banking services) are often concentrated. MM2014 elicited information on household usage of financial service providers – commercial banks, mobile money, microfinance institutions (MFIs) and Savings and Credit Association (SACCO) – as well physical access to financial service services measured by the distance from the village center to each of the

four financial service providers. This distance measure is used to analyze how proximity to the service center influences the household's decision to use the services offered by the respective financial institutions, to investigate the general consensus in the literature that long distance hinders financial service adoption. The survey also collected information on the amount of money saved, borrowed and received in remittances by household members in one year before the survey, which constitute key outcome variables in the analysis.

The study seeks to test two main hypotheses; (1) mobile money increases proximity to financial service centers and reduces the travel time and transport costs associated with financial service usage which, in turn, induces households to adopt these services and increases the amount of the respective services transacted by the members of user households and (2) through facilitating savings, borrowing and remittance transactions, mobile money provides a platform for households raise funds to augment their consumption expenditures, which improves their welfare. I therefore expect to find a significant difference in the likelihood of a household saving, borrowing and receiving remittances and in the transaction amount of each service between mobile money user-households and non-users. I also expect to find a positive and significant association between mobile money adoption and household consumption expenditure per adult equivalent, which, supposedly, results from the enhanced access to financial services. To the best of my knowledge, no study has analyzed the effect of mobile money on rural financial behavior, particularly the facilitation of savings and credit. Moreover, no study has empirically analyzed the welfare impact of mobile money in the specific context of rural areas with limited or no coverage by formal financial institutions.

The study finds that having at least one member in the household who uses mobile money services is associated with a higher likelihood of saving, borrowing and receiving remittances and an increase in the amount of money saved, borrowed and received in remittances from family members and friends. Another finding of the study is that the distance to the mobile money agent has a significantly negative association with both the household's likelihood and frequency of using mobile money services. Contrary to the general expectation, there is no systematic association between the distance to the bank, MFI and SACCO and the likelihood and use frequency of these institutions. A possible explanation as to why distance to the bank does not significantly enter the household's decision to use bank services in this context is that this decision may depend more on the household's asset wealth or income which makes it affordable for household members to travel and access bank services as far as hundreds of kilometers in the district town. In fact, the study finds a strong positive correlation between the value of household assets and both bank account adoption and the frequency of using bank services.

A further finding of the study is that households who use mobile money services experience a notable improvement in their welfare, as indicated by an increase in their real consumption per adult equivalent relative to that of their non-user counterparts. Results reveal that the main mechanism of this welfare effect is the facilitation of remittances; user households have a higher likelihood and annual frequency of receiving remittances and the amount of remittances received is significantly higher than that of non-users. This therefore implies that mobile money provides a cheap, fast and convenient channel through which rural households receive financial support from members of their social networks living

and/or working outside the village, which in turn complements their consumption budgets. In support of this conjecture, data reveals that over 30 percent of the remittance money received by the sample households is used to supplement household consumption expenditure.

The findings of this study unravel the potential role that mobile money plays in bridging the financial access gap that is characteristic of most rural areas in Uganda particularly and in many developing countries generally. The findings therefore have an implication that designing cheap, easily accessible and convenient financial products could partially relax the financial access constraint of rural households and improve their financial behavior. The results further imply that scaling up mobile phone-based access to financial services should be emphasized and incorporated into poverty alleviation strategies. Indeed, the welfare improvement found in this study as a result of mobile money adoption indicates that rural households could be redeemed from acute poverty and vulnerability by enhancing their access to affordable financial services, which, in turn, could boost their ability to invest in productive assets and smooth consumption. The general policy implication is that designing pro-poor financial products may thus be an effective strategy to foster financial inclusion, enhance inclusive growth and reduce poverty and vulnerability.