ESSAYS ON THE IMPACT OF MOBILE MONEY ON HUMAN CAPITAL AND AGRICULTURAL INVESTMENT: EVIDENCE FROM RURAL UGANDA

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Summary

It is widely accepted that a viable financial sector is indispensable for economic development and poverty reduction. An enabling financial environment is essential for the optimal allocation of resources which are conspicuously scarce in rural settings. Promising ventures are easily identified and supported. Small holder farmers can access affordable credits thereby facilitating the adoption and optimal application of modern inputs. Access to credit enable households to smooth investments in health and education thereby attenuating the impact of erratic shocks. An effective rural financial sector incentivizes productive investments which is fundamental for poverty reduction.

Access to formal financial services is conspicuously low in most African countries notably in rural communities. Financial exclusion of rural communities attenuates their ability to respond in a timely and efficient manner to opportunities and shocks inherent in their environment. Most often rural households have to rely on their own limited savings which is often insufficient to support promising activities. In the absence of a formal financial sector, several informal institutions have emerged to fill the void such as Savings and Cooperative organizations (SACCO).In addition to the risk inherent in such informal institutions, they are also known to charge exorbitant fees for their services especially to non-members.

The drivers of financial exclusion notably in rural Africa has been of interest to many researchers. The direct and indirect cost associated with formal financial services is often too high for rural communities to afford them. The fees charged to open a bank account is usually out of the reach of most rural households. The relative concentration of financial service providers in urban and peri-urban areas imposes non-negligible transportation cost for rural households seeking formal financial services. The opportunity cost in terms of forgone hours of work is very high given that most rural households do not earn fixed monthly income.

Of recent, the financial environment in most rural communities has been changing considerably owing to the rapid dissemination of mobile phones as well as considerable expansion and improvement in telecommunication infrastructure. Mobile phones have become ubiquitous in most rural communities thereby providing a platform through which affordable financial services can be delivered in rural communities. Mobile money has emerged as an affordable and convenient mobile phone based financial service enabling individuals to open bank accounts, send and receive money via their mobile phone. Mobile money has been disseminating very fast in rural Africa due to the fact that it is faster, affordable and less procedural compared to traditional banking services.

This dissertation explores the impact of mobile money adoption on rural households' investment behavior. First it examines the determinants of households' decision to adopt the mobile money service and the resultant impact on agricultural and educational investment. This study uses household and community level panel data collected in 2003, 2005, 2009, 2012 and 2015 by Makerere university, Foundation for Advanced Studies on International Development (FASID) and the National Graduate Institute for Policy Studies (GRIPS). The data collection was done under the Research on Poverty, Environment and Agricultural Technology (RePEAT) project. The household level component of the RePEAT captures information on demography, agriculture, soil quality, income, health, education, financial service usage, land tenure and migration amongst others. The community survey covers information on community characteristics, distance to market and district towns, state of roads and availability of public services such as schools, hospitals and telephone network.

This dissertation addresses two main hypothesis; (1) mobile money adoption induces small-scale farmers to adopt modern farming practices notably high yielding variety seeds as well as fertilizer. The adoption of these modern inputs leads to productivity gains (higher yields), larger market participation and consequently higher income for households which have adopted mobile money (2) Mobile money adoption induces larger investments in education measured in per school age child educational expenditure. Its adoption increases the likelihood of school enrollment and conditional on enrollment, it increases the demand for private schools relative to public schools though the latter is tuition free. To the best of our knowledge there are no rigorous empirical studies on the impact of mobile money on rural development notably human capital and agricultural investments

In terms of findings, the study reveals that the dissemination of mobile money has remained very high in rural Uganda. The adoption rate has jumped from less than 1 percent in 2009 to 28.8 percent in 2012 and to 71.5 percent in 2015. This expansion in mobile money adoption is driven by the expansion in the number of mobile money agents. The average distance from the community to the nearest mobile money agent has dropped from 13km in 2009 to 4km in 2012 and 3km in 2015.This decrease in distance represents significant gains in transaction cost for rural households. This reduction in transaction costs is a comparative advantage of mobile money over traditional banking services.

The study also finds that mobile money adopters are more likely to adopt modern agricultural inputs such as high yielding maize seeds and fertilizer. The adoption of these modern inputs leads to productivity gains and ultimately higher income for mobile money adopter households. Crop level analysis indicates that mobile money adoption induces modern input adoption for crops that are relatively intensively grown such as maize compared to crops that are grown with low modern input intensity such as banana. Regarding market participation, mobile phone ownership rather than mobile money is associated with greater market participation notably for perishable crops such as banana compared to maize

Regarding educational investment, mobile money adoption is associated with larger investments in education measured in per school age child educational expenditure. Mobile money adoption increases the likelihood of school enrollment. Conditional on enrollment, mobile money adoption induces demand for private school relative to public school.

In examining the mechanism through which mobile money triggers agricultural and educational investment, the dissertation reveals that mobile money adopters are more likely to receive remittances as well as receive larger amount of remittances. This result indicate that mobile money adoption facilitates intra-household resource allocation across distances. Increases in remittances induced by mobile money adoption enables rural households' to smooth investment in agriculture and education.

The above findings have resounding policy implications. First, the above results indicates that rural households' are willing to adopt modern financial services conditional on such services been affordable. Hence the drive for greater financial inclusion will require existing traditional banking services to be stream lined in view of rendering them affordable and less procedural.

There is an urgent need for governments and other financial stakeholders to expand the range of financial services available via mobile money accounts. The impact of mobile money on agriculture and education is essentially driven by remittances thereby tying mobile money to migration. There is need to promote mobile money as a platform for savings and loans thereby enabling rural communities to mobilize financial resources in addition to remittances needed for investments. Promoting access to credit via mobile money will enable rural households to respond to in a timely and efficient manner to opportunities and shocks independent of remittances.