

FINANCIAL SERVICES ASSESSMENT

Community Level Economic Effects of M-PESA in Kenya: Initial Findings (Executive Summary)

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Financial Services Assessment project can be found on the web at <u>http://www.fsassessment.umd.edu/</u>

ABOUT THE PROJECT

The *Financial Services Assessment* project is designed to examine the impact of financial services on the lives of poor people across the developing world. This project is funded by the Bill & Melinda Gates Foundation, which is committed to building a deep base of knowledge in the microfinance field. The IRIS Center at the University of Maryland, College Park, together with its partner, Microfinance Opportunities, will assess a diverse range of innovations in financial services. The results of this project will shed light on the design and delivery of appropriate financial products and services for the poor and the potential to scale up successful innovations to reach larger numbers of low-income households.





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REPORT SERIES

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ABOUT THE AUTHORS

Megan Plyler

Dr. Megan Plyler is a cultural anthropologist and qualitative research methods specialist at the IRIS Center. She has studied and worked in the field of International Development since 1994, with a focus on vulnerable populations. She is a gender and African studies specialist. She directed and analyzed the focus group research, as well as the mini surveys of the Katitika Water Project. She also carried out and analyzed key informant interviews with government, water project, health-care and education officials and conducted case studies of agents.

Sherri Haas

Ms. Sherri Haas is a program specialist with the IRIS Center and has recently returned from three months of field research in Kenya using a combination of quantitative and qualitative methods to gather in-depth information on the community-level effects of M-PESA. Within this study she conducted and analyzed the agent questionnaires, shop data logs and key informant interviews with financial institutions and small business owners. Ms. Haas is experienced in all aspects of international development project management and has managed several, including a five-year project to monitor and evaluate economic strengthening programs designed to improve the well-being of vulnerable children. She graduated summa cum laude from Illinois Wesleyan University with research honors in economics as well as a second major in political science. Her work focused heavily on quantitative analysis and the role of women in

international economics and politics.

Geetha Nagarajan

Dr. Geetha Nagarajan is research director at the IRIS Center, serving as economist and monitoring and evaluation specialist. She designed and directed this research in Kenya. A highly experienced researcher, advisory assistance provider and author of several peer-reviewed publications, she has worked in 21 developing countries in Asia, Africa and Eastern Europe. She has evaluated economic development programs and conducted field-based research to identify causes of poverty to design policy and programs to address them, especially in conflict- and disaster-affected environments. An expert in small and microenterprise development, rural and microfinance, she has a wide range of experience in developing, measuring and implementing activities to ensure program effectiveness to reach the target population.

ABSTRACT

M-PESA an agent-assisted, mobile phone-based, person-to-person payment and money transfer system, was launched in Kenya on March 6, 2007. This study is the first of its kind to explore the economic effects of M-PESA in Kenya at the community level. The findings from the first stage of the study indicate that M-PESA affects the economic outcomes of community members, both users and non-users of M-PESA, through direct and externality effects, and identify 11 economic effects within the broad categories of local economic expansion, security, capital accumulation and business environment after 2.5 years of M-PESA's use in these communities. The research also shows that effects were not visible in all the study communities and among all the population segments within the communities; they tended to be influenced by gender and geographic location of the communities. Also, the effects were not always perceived as mutually exclusive, but as intervioven with each other to produce overall community effects.

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OTHER NOTES

The exchange rate during the research period was 75 Kenyan shillings = 1 U.S. dollar.

STUDY AREAS



EXECUTIVE SUMMARY

M-PESA, an agent-assisted, mobile phone-based, person-to-person payment and money transfer system, was launched in Kenya on March 6, 2007. It allows users to store money on their mobile phones in an e-account and deposit or withdraw money in the form of hard currency at one of M-PESA's numerous agent locations. Since its inception, M-PESA has picked up remarkably quickly, covering the majority of geographic areas of the country. It aimed to attract 250,000 customers in its first year, and reached that milestone in only four months. About 1 million customers registered with M-PESA by the end of year one. By August 2009, over 7.7 million Kenyans (about 38 percent of the adult population) had become registered users of M-PESA, far exceeding projections. As of January 2010, that number had exceeded 9 million. The monthly value of person-to-person transfers was over KSH 26 billion (approximately U.S. \$330 million) in December 2009. There was also a phenomenal growth in the number of agents, from 7,000 in March 2009 to almost 17,000 in January 2010. These agents are located throughout urban and medium-to-large market centers in the country.

Given the remarkable outreach and use of M-PESA, many policymakers and donors are interested in supporting similar initiatives that can help produce a more inclusive and efficient financial sector that provides a broad range of financial services. But donors and policy makers need to clearly understand the value proposition of M-PESA in its potential to affect households and communities at socio-economic levels before advocating the relatively new system for other areas. Specifically, we need to understand if and how M-PESA affects households and communities.

STUDY OBJECTIVE

This study is the first of its kind to explore the economic effects of M-PESA in Kenya at the community level. Many studies exist on M-PESA, and many others are under way that focus on examining the effects of M-PESA at the household level and that aggregate the household effects to make conclusions about community effects. These studies seldom extend the inquiry to capture spillover and ripple effects caused by the presence and use of M-PESA to fully understand community effects.

This study is intended to help fill in that gap, since sustainability of M-PESA may depend on achieving communitywide impact. Our study captured community effects that occurred via direct and indirect economic effects realized by the users of M-PESA and that accrued to non-users through the presence of M-PESA and users of M-PESA. In other words, we focused on communitywide economic effects caused by the presence and use of M-PESA for all residents in the community. We also captured social effects to the extent they influence economic effects.

The study is being conducted in two stages. This report is based on the first stage, which was exploratory and not exhaustive in nature. At this first stage we explored the following questions:

- 1. Are there indications of M-PESA's economic effect at the community level?
- 2. If so, what are the economic effects of M-PESA in a community?
- 3. What observable factors could potentially influence these communitylevel effects?

Examining the net effects of M-PESA on the communities and relative magnitudes of identified effects were beyond the scope of this study.

STUDY METHODOLOGY

We define communities in our study based on geographic boundaries within which M-PESA clusters could be identified. We chose three Kenyan districts that represent an urban slum in Nairobi (Kibera) and two agricultural districts (Murang'a and Kitui), which varied by poverty level, economic activities and M-PESA agent distribution.

To address the study questions, we used a "deep dive" methodology with inductive methods to gather primarily qualitative information and a very limited amount of quantitative data. We used this information to explore the possible direct effects and externalities that can occur for a community due to M-PESA. The information was collected through 12 semi-structured key informant interviews (KIIs) with financial service providers, 58 unstructured market watch surveys, 26 focus group discussions (FGDs) using an Effects Ranking Tool and 215 mini-surveys using structured questionnaires with the participants of 22 of the above mentioned 26 FGDs. Literature reviews were also carried out as a source of secondary data. The multiple sources of information allowed us to triangulate the data to examine our study questions.

KEY FINDINGS

M-PESA's economic effect at the community level is now observable for both users and non-users of M-PESA, through direct effects and externalities, respectively.

The four overarching economic effects at the community level are: local economic expansion, security, capital accumulation, and business environment.

These four effects are composed of 11 community-level sub-effects, by order of importance, that illuminate M-PESA's potential role in supporting economic activities in the communities. These include the following (overarching effect in parentheses):

- 1. Money circulation (local economic expansion)
- 2. Transactions ease (business environment)
- 3. Money security (security)
- 4. Food security (security)
- 5. Human capital accumulation (capital accumulation)
- 6. Expansion of businesses (local economic expansion)
- 7. Social capital accumulation (capital accumulation)
- 8. Employment opportunities (local economic expansion)
- 9. Financial capital accumulation (capital accumulation)
- 10. Physical security (security)
- 11. Quality control (business environment)

Not all 11 sub-effects were visible in all of the study communities and among all of the population segments. Also, the effects were not always perceived as mutually exclusive, but as inter-woven to produce overall community effects.

Overall, the highest-ranked effect was *increased money circulation*, due to a greater volume of money flowing into and out of the communities and a faster flow of money within the community to boost local consumption. However, its importance varied by gender, with men considering it No. 1 and women were ranking it as No. 3.

Business expansion was noticed primarily in terms of growth of existing businesses rather than new business start-ups. Existing businesses were able to expand to meet growing local demand for goods and services, which was in part driven by increased money circulation through M-PESA and lower transactions costs for vendors using M-PESA to obtain their stocks. This business expansion also tends to be related to food security elements identified in the communities in terms of increased volume and variety of food available and timely availability of agricultural inputs in local markets.

Increased employment opportunities were mostly referenced in direct relationship to the M-PESA's kiosks. Although this may seem like a relatively small increase in employment, given the high level of unemployment in the areas, it was very noticeable to the community members. Also, in some cases, existing businesses expanded employment with the addition of M-PESA windows within their shops.

Men identified *physical security*, in terms of reduced mugging and thefts, as an effect of M-PESA. Women viewed improved money security—in terms of ability to accumulate cash and keep it secure from theft—as the most important type of security effect associated with M-PESA.

People in agrarian areas identified *food security* more as an important effect than those who live in urban areas. This was mentioned in terms of increased agricultural productivity, improved access to nutritious food and a variety of foods, and better access to agricultural inputs on time. Interestingly, rural women placed more importance on food security than rural men, while urban men placed more importance on it compared to urban women. As mentioned above, increased money circulation and expansion of local markets are also related to the food security effect identified in the communities.

Men and women consider *human capital accumulation*—in terms of education and health—an important positive community-level effect associated with M-PESA. However, aggregate data from all three study districts showed no clear consensus on the direction of M-PESA's association in creating or nurturing social and financial capital in the community. Nonetheless, Kibera, the urban slum in Nairobi, identified M-PESA positively with financial capital accumulation since residents linked it to business expansion and a better business environment.

Shortly before the study began in September 2009, M-PESA initiated a partnership with a private company to provide clean water in one of our study districts. While the Katitika Water Project (KWP) in Kitui District is not located within the communities selected for the study, it is an important breakthrough in enhancing the functionality of M-PESA in directly addressing the basic human need for water in arid areas, and also community-level governance and project sustainability issues. We therefore visited the project to obtain an overview of it. The project uses a variation on M-PESA's "bill pay" function to allow rural communities to access safe water from an automated water system. Over time, the project is intended to become community-owned, providing them with a valuable asset. Our initial interviews identified three primary community effects of the KWP. The first is higher agricultural productivity in terms of new kitchen gardens and tree nurseries. Second, local business expansion was seen in new water based-businesses such as brick making and some expansion of existing businesses such as dairy cattle farming. Third, community members spoke of improving health in terms of fewer waterborne diseases and increased ability to practice good hygiene.

CONCLUSIONS AND NEXT STEPS

The findings from our first stage of the study clearly suggest that M-PESA affects the economic outcomes of community members, both users and non-users of M-PESA, through direct effects and externalities, respectively. The study identified four major economic effects: local economic expansion, security, capital accumulation and business environment. The effects were not visible in all the study communities and among all the population segments within the communities—they tend to be influenced by gender of community members and geographic location of the communities. Also, the effects were not always perceived as mutually exclusive, but as inter-woven to produce overall community effects.

In particular, food and water security appear to be complex and interwoven with many other effects, and to have considerable multiplier effects, especially in rural economies. Therefore, we propose for our next stage of the study to examine in detail M-PESA's effects on food and water security. In these two complex areas, we intend to capture the flow mechanisms that facilitate obtaining the effects to clearly understand the role of M-PESA in affecting sustainable community-level outcomes. Therefore, we propose to test clearly formulated hypotheses to understand the magnitude of the effects and also the flow mechanisms of food and water security.

While our study is limited to the Kenyan context, we hope at the end of stage II to draw generic lessons on agent-assisted mobile systems and how they can change and improve community-wide economic impacts in developing countries.