

DEVELOPMENT ECONOMICS

The long-run poverty and gender impacts of mobile money

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Mobile money, a service that allows monetary value to be stored on a mobile phone and sent to other users via text messages, has been adopted by the vast majority of Kenyan households. We estimate that access to the Kenyan mobile money system M-PESA increased per capita consumption levels and lifted 194,000 households, or 2% of Kenyan households, out of poverty. The impacts, which are more pronounced for female-headed households, appear to be driven by changes in financial behavior—in particular, increased financial resilience and saving—and labor market outcomes, such as occupational choice, especially for women, who moved out of agriculture and into business. Mobile money has therefore increased the efficiency of the allocation of consumption over time while allowing a more efficient allocation of labor, resulting in a meaningful reduction of poverty in Kenya.

Mobile money was first introduced in South Africa and the Philippines about 10 years ago (1). In March 2007, these services were followed in Kenya by “M-PESA” (M is for mobile, “pesa” is Swahili for “money”), which was to become that country’s dominant (although not only) mobile money service. M-PESA has been celebrated internationally as an innovation that could bring the unbanked population into the formal financial system, with associated impacts on economic well-being and welfare (2).

Nearly 10 years after its launch, mobile money is ubiquitous in Kenya. It is used by at least one individual in 96% of Kenyan households (with a total of 5 million households in the country, 96% of which have a mobile phone). These individuals have access to 110,000 agents (3) who provide deposit and withdrawal services. In a country with only 2700 automatic teller machines (ATMs) (4), the agent network has been an essential factor in the success of M-PESA (5). Recently, additional financial services have been deployed over the M-PESA network, including M-Shwari (in collaboration with the Commercial Bank of Africa), a bank account offering savings and credit services accessed entirely through the M-PESA platform, and Lipa na M-PESA, a retail payment facility (see supplementary text).

By the end of 2015, a total of 271 mobile money services were being offered in 93 countries around the world, from Argentina to Zambia, and a further 110 services were planned. At that time, there were 411 million registered accounts,

of which 134 million were active on a 90-day basis, and an average of 33 million transactions were being executed per day. In 19 markets, there were more mobile money accounts than bank accounts, and 37 markets had at least 10 times as many mobile money agents as bank branches (6).

We report the results of a study of the long-run impact that M-PESA has had on the economic lives of Kenyans. In earlier work (7–10) (see supplementary text), we showed that access to mobile money allowed individuals to protect themselves against income and health risks. Individuals could draw on a wider network of social support, and they received more remittances more quickly from more different types of people in response to negative shocks. We documented a greater number of transactions and larger transactions, both in response to unexpected adverse events (9) and overall (10). However, notwithstanding the short-term economic benefits of consumption smoothing, whether such a transformative financial innovation could also help to raise the level of consumption and lift people out of poverty over the longer term remained unresolved.

Between 2008 and 2014, we conducted five rounds of a household panel survey, initially representative at the national level (excluding the sparsely populated far north). The first survey was administered to 3000 households across 118 administrative units known as locations (11). Attrition was nontrivial in subsequent rounds in 2009, 2010, 2011, and 2014, but higher in Nairobi than elsewhere. The 2011 survey was targeted specifically toward the attrited households from earlier rounds, and Nairobi was dropped from the sample after 2011 (480 households) (12). Outside of Nairobi, attrition was still 35% over the 6-year period, and by 2014 we were able to collect data on 1608 households. We discuss attrition in more detail below.

To identify the causal effects of M-PESA on the economic well-being of households, we used changes in access to mobile money—not adoption itself. We measured access to the service by the geographic proximity of households to M-PESA agents. Agent density, quantified by the number of agents within 1 km of the household, exhibited large variation across our sample in 2014 (mean = 8.75, SD = 17.03).

Changes in these measures of access can be used to assess the impact of M-PESA because, as we showed in our earlier work, the geographic rollout of agents up to 2010 was not systematically correlated with the initial level of, or changes in, individual and household characteristics that might have been associated with future outcomes [see table 6C in (9), replicated as table S2]. Figures S1 and S2 illustrate the variation we are using. We do not use the change in density from 2010 to 2014, because further expansion of mobile banking outlets after 2010 (including by competitors and facilitated by new regulations from the Central Bank of Kenya) may have been more strategically deployed, and thus correlated with underlying demand.

In further support of the assumption that the agent rollout between 2008 and 2010 was exogenous to household characteristics, we conducted a falsification test [table 7A in (9), replicated as table S3]. Using data on consumption and unexpected shocks from another survey of rural Kenyan households, we showed that households living in areas that were later to see large increases in agent access experienced the same levels of risk sharing before the launch of M-PESA as those in areas that would later exhibit less agent growth. A similar exercise shows that earlier levels of household per capita consumption were not correlated with the level or future growth in access to agents. This holds both for (i) socioeconomic variables that we collected in 2008 (although we do not include consumption, which could have been affected in the short run by M-PESA, which was launched more than a year before our first survey) as reported in table S2, and (ii) measures of food consumption in 2007 from the same data set that we used for the falsification tests in (9), reported in table S3.

We thus estimate the long-term impact of M-PESA by comparing outcomes, as measured in the 2014 survey, of households that saw relatively large increases in agent access between 2008 and 2010, with outcomes of households that experienced relatively small increases in agent access over the same period. In particular, we estimate regressions with the following specification:

$$y_{ij} = \alpha + \beta \Delta A_{ij} + \phi X_{ij} + \gamma_j + \varepsilon_{ij} \quad (1)$$

where y_{ij} is the relevant outcome for household (or individual) i in location j (13), ΔA_{ij} is the change in agent density (i.e., the number of agents within 1 km of the household) between 2008 and 2010, X_{ij} are additional controls (gender, age, and age squared of the household head), and γ_j are location fixed effects. Standard errors are clustered at the location level.

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To investigate differences in impacts by gender, we estimate regressions of the form

$$y_{ij} = \alpha + \beta \Delta A_{ij} + \mu \text{Female}_{ij} + \delta \Delta A_{ij} \times \text{Female}_{ij} + \phi X_{ij} + \gamma_j + \varepsilon_{ij} \quad (2)$$

where *Female* is a dummy indicating the gender of the household head (in household level regressions) or of the individual (in the case of individual level outcomes). With this specification, the marginal effect of an increase in agent density for females is simply $(\beta + \delta)$.

Because gender could be correlated with other characteristics Z_{ij} that allowed individuals and households to benefit from access to mobile money, we include additional interaction terms of the form $\Delta A_{ij} \times Z_{ij}$ in the regression above. For the individual-level regressions, we include education, and for household level regressions, we add education, wealth, and bank account ownership (education and wealth are dummy variables for whether the household is below the median value in the sample and we use a dummy for the household being unbanked, all measured in 2008). If, as a result of including these interactions, the coefficient δ were no longer significant, we would infer that the gender effect was driven by these other characteristics. From this specification, we report the effect of changes in agent density for females, over and above the effects associated with Z_{ij} (i.e., the sum of the main effect of agents and the female interaction).

We report results for three categories of outcome variables: (i) average consumption per person in a household and household poverty rates, (ii) physical and financial wealth, and (iii) occupational choices and migration. In all our regressions, we report the Šidák-Holm P value, which accounts for the testing of multiple hypotheses.

Summary statistics of interest are reported in table S1. Mean daily per capita consumption was 208 Kenyan shillings ($SD = 301$), or a little over \$2.50 at the prevailing nominal exchange rate at the time of the 2014 survey. We estimate that 43.3% of our sample had per capita consumption less than \$1.25 per day (a common measure of extreme poverty), and that for 66.0% it was less than \$2 per day. Among household heads in the sample, 24.6% reported “farming” as their primary occupation, and 17.5% said they ran a business. On average, in 41.2% of households, at least one person in the household had migrated either temporarily or permanently since 2008.

The impacts of the exogenous change in access to agents on consumption and poverty are summarized in Table 1, which reports the average effect across both men and women, as well as the interaction between change in agent density and a female dummy. The reported net “effect for female headed” households is simply the sum of the direct effect and the interaction term. To interpret this statistic, the entry “effect for female headed, 25th–75th percentile” calculates the difference in the dependent variable between female-

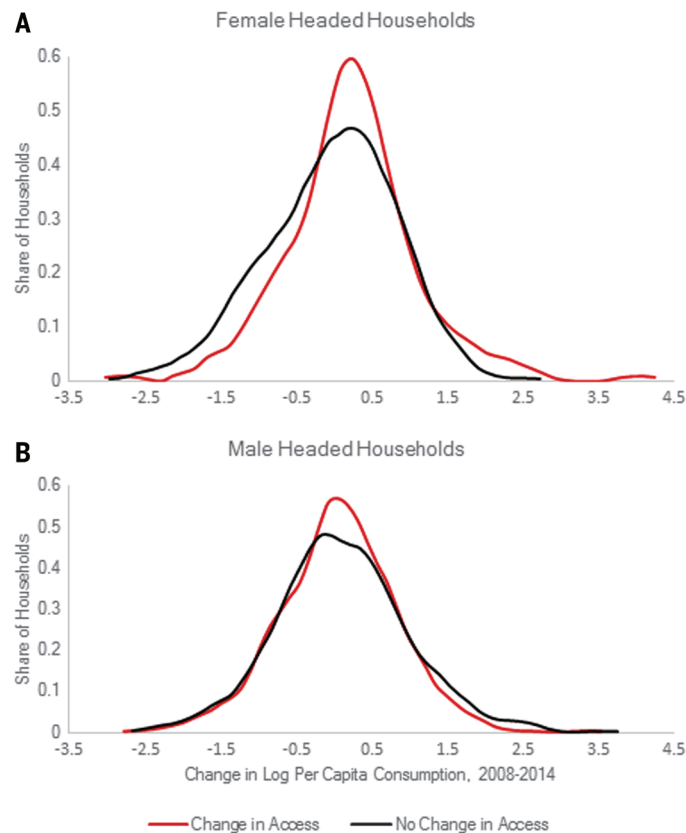


Fig. 1. Change in log(per capita consumption) by gender, for households with and without improvements in agent access. (A) Data for female-headed households; (B) data for male-headed households. The horizontal axis in each graph measures the change in log(per capita consumption) over the period 2008 to 2014. Red lines show the distribution of these changes for households that showed a growth in agent density; black lines show the distributions for households with no growth in agent density. Overall, 55% of households in the sample had no growth in agent density.

headed households that experienced a change in agent access at the third quartile of the distribution, versus those at the first quartile. In terms of agent density, this is a move from zero agents within 1 km of the household to six agents. We refer to this measure as the interquartile impact.

Column 1 of Table 1 indicates that log(per capita consumption) increased significantly in areas in which agent access increased, but that the effect for female-headed households was more than twice that average. Female-headed households at the third quartile of the change in agent density experienced per capita consumption that was some 18.5% higher than those at the first quartile (Šidák-Holm $P = 0.00$). To control for potential unobserved baseline differences, column 2 reports results for changes in log(per capita consumption), including location fixed effects, which in effect is a control for location-specific trends in consumption levels. If anything, consumption growth for male-headed households was negative, while that of female-headed households was positive and statistically significant (Šidák-Holm $P = 0.04$). Increased agent access also reduced both extreme poverty (the share of the population living on less than \$1.25) and general poverty (\$2 per day) significantly. The interquartile impact on extreme poverty among female-headed households was 9.2 percentage points off a base of 43.3%, or by 22%. The interquartile impact on \$2-per-day poverty

of female-headed households was 8.6 percentage points.

To further interpret our regression results, we apply the estimated coefficients at the mean changes in agent density for the sample, scaled by the number of relevant households in the country (see supplementary text). On the basis of this kind of calculation, we estimate that the spread of mobile money helped raise at least 194,000 households out of extreme poverty, and induced 185,000 women to switch into business or retail as their main occupation.

Finally, allowing for interactions between changes in agent density and other observable household characteristics has no impact on our results (see tables S4 to S6 for complete results). Exactly what it might be about female headedness that yields these large impacts on consumption and poverty is discussed below.

Figure 1 illustrates the results in column 2 of Table 1, comparing the distributions of the change in per capita consumption for households that experienced no growth in agent density (55% of households) to those that did. There was little difference between these distributions for male-headed households, but we found a shift to the right for the female-headed households that saw agent growth. This shift was particularly noticeable in the bottom half of the distribution, where per capita consumption growth was largely negative. We infer that the primary impact on female-headed households

Table 1. Consumption and poverty. Standard errors (in parentheses) are clustered at the location level. * $P < 0.1$, ** $P < 0.05$, *** $P < 0.01$. All specifications include location fixed effects and controls for gender, age, and age squared of the household head. All measurements are from 2008; complete estimates are shown in tables S4 to S6.

	(1)	(2)	(3)	(4)
	log(Per capita consumption)	Change in log(per capita consumption)	Extreme poverty (US \$1.25)	Poverty (US \$2)
Overall effect				
Change in agent density	0.012** (0.005)	-0.003 (0.003)	-0.007*** (0.002)	-0.007** (0.003)
Šidák-Holm P value	0.04	0.35	0.00	0.05
Effect disaggregated by gender of household head				
Change in agent density	0.009** (0.004)	-0.005* (0.003)	-0.006*** (0.002)	-0.005* (0.003)
Female head × change in agent density	0.022*** (0.008)	0.020*** (0.007)	-0.010*** (0.004)	-0.009 (0.006)
Female head	-0.080 (0.077)	-0.117* (0.068)	0.032 (0.042)	0.028 (0.036)
Effect of agent density for female headed	0.031*** (0.008)	0.014** (0.007)	-0.015*** (0.004)	-0.014*** (0.005)
Šidák-Holm P value	0.00	0.04	0.00	0.02
Effect for female headed, 25th–75th percentile	0.185	0.085	-0.092	-0.086
Observations	1593	1593	1593	1593
Overall effect of gender when controlling for interactions with education of household head, wealth, and bank account				
Effect of agent density for female headed	0.030*** (0.006)	0.015** (0.006)	-0.015*** (0.003)	-0.015*** (0.004)
Šidák-Holm P value	0.00	0.02	0.00	0.00

Table 2. Effects on assets. Standard errors (in parentheses) are clustered at the location level. * $P < 0.1$, ** $P < 0.05$, *** $P < 0.01$. All specifications include location fixed effects and controls for gender, age, and age squared of the household head. Safety and convenience refer to the safety and convenience scores of the financial instruments a household uses (see supplementary text for the full definitions).

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
	log(Assets)	log(Savings)	Safety	Convenience	Bank account	SACCO	ROSCA	M-PESA
Overall effect								
Change in agent density	0.009 (0.010)	0.022*** (0.009)	0.002 (0.001)	-0.002 (0.001)	0.006*** (0.002)	0.002 (0.001)	-0.001 (0.002)	-0.000 (0.002)
Šidák-Holm P value	0.90	0.17	0.83	0.69	0.01	0.84	0.93	0.93
Effect disaggregated by gender of household head								
Change in agent density	0.008 (0.010)	0.021** (0.009)	0.002 (0.001)	-0.001 (0.001)	0.007*** (0.002)	0.001 (0.002)	-0.001 (0.002)	-0.000 (0.002)
Female head × change in agent density	0.010 (0.014)	0.011 (0.017)	-0.003 (0.003)	-0.003 (0.003)	-0.002 (0.005)	0.002 (0.004)	0.001 (0.005)	-0.001 (0.006)
Female head	-0.716*** (0.165)	-0.509*** (0.156)	-0.002 (0.027)	0.070** (0.033)	-0.118*** (0.041)	-0.061* (0.037)	0.022 (0.043)	-0.044 (0.044)
Effect of density for female headed	0.018 (0.013)	0.032* (0.017)	-0.001 (0.003)	-0.004 (0.003)	0.005 (0.005)	0.003 (0.004)	-0.000 (0.005)	-0.001 (0.006)
Šidák-Holm P value	0.85	0.53	0.99	0.85	0.96	0.96	0.99	0.99
Effect for female headed, 25th–75th percentile	0.110	0.223	-0.006	-0.026	0.027	0.020	-0.001	-0.006
Observations	1580	1484	1518	1518	1593	1593	1593	1593
Overall effect of gender when controlling for interactions with education of household head, wealth, and bank account								
Effect of density for female headed	0.012 (0.012)	0.035** (0.015)	-0.002 (0.003)	-0.003 (0.003)	0.004 (0.004)	0.002 (0.003)	-0.001 (0.005)	-0.000 (0.005)
Šidák-Holm P value	0.95	0.20	0.95	0.95	0.95	0.95	0.98	0.98

Table 3. Effects on occupational choice, migration and household composition. Standard errors (in parentheses) are clustered at the location level. * $P < 0.1$, ** $P < 0.05$, *** $P < 0.01$. All specifications include location fixed effects and controls for gender, age, and age squared of the household head. Business/sales refers to individuals who report their main occupation to be a business, sales, or retail. Semiskilled refers to individuals reporting being one of: carpenter, mason, conductor, waiter, cook, driver, electrician, mechanic, watchman, secretary, tailor. Secondary refers to a dummy for the individual holding more than one occupation.

	(1)	(2)	(3)	(4)	(5)	(6)	(7)
	Business/sales	Semiskilled	Farming	Secondary	Migration	No. of migrants	Household size
Overall effect							
Change in agent density	0.002*	0.000	-0.004***	-0.001	0.000	0.009	-0.017*
	(0.001)	(0.001)	(0.001)	(0.001)	(0.002)	(0.008)	(0.009)
Šidák-Holm P value	0.27	0.96	0.00	0.77	1.00	0.77	0.27
Effect by gender of household head							
Change in agent density	0.001	0.000	-0.003***	0.000	0.000	0.008	-0.014
	(0.001)	(0.001)	(0.001)	(0.001)	(0.002)	(0.009)	(0.010)
Female head \times change in agent density	0.002	-0.000	-0.002***	-0.002**	-0.001	0.002	-0.020
	(0.001)	(0.001)	(0.001)	(0.001)	(0.005)	(0.024)	(0.019)
Female head	0.094***	-0.147***	0.089***	-0.020	0.052	-0.071	-0.537**
	(0.014)	(0.011)	(0.012)	(0.014)	(0.039)	(0.113)	(0.223)
Effect of agent density for female headed	0.003**	0.000	-0.005***	-0.002**	-0.001	0.011	-0.035**
	(0.001)	(0.001)	(0.001)	(0.001)	(0.005)	(0.023)	(0.017)
Šidák-Holm P value	0.15	0.96	0.00	0.11	0.96	0.95	0.15
Effect for female headed, 25th–75th percentile	0.018	0.000	-0.031	-0.011	-0.007	0.064	-0.207
Observations	4772	4772	4772	4772	1593	1593	1593
Overall effect of gender when controlling for interactions with education of household head, wealth, and bank account							
Effect of agent density for female headed	0.003*	0.000	-0.005***	-0.002**	-0.002	0.010	-0.028
	(0.001)	(0.001)	(0.001)	(0.001)	(0.005)	(0.022)	(0.018)
Šidák-Holm P value	0.25	0.96	0.00	0.10	0.96	0.96	0.38

was therefore to protect them from falls in consumption in the longer term, or to boost it marginally, consistent with our earlier results on risk sharing (9).

The higher consumption levels we observed could be driven by increased labor or capital income, or simply by transfers between individuals with different propensities to consume. In turn, mobile money could have facilitated these changes through a number of channels: as a secure means of storing value, it could increase the return to savings and hence future consumption; it has allowed greater access to credit, both formally (through services such as M-Shwari) and informally, potentially increasing investment in productive assets; it has facilitated informal risk sharing, which, as well as smoothing consumption, could lead households to adopt higher-risk but higher-return income-earning strategies or occupations; by reducing the cost of long-distance remittances, it could allow internal migration of breadwinners to higher-return labor markets; and by making payments easier and safer (including via Lipa na M-PESA), it could have boosted small-scale trade and induced changes in occupational choices. Although we lack definitive evidence on all possible mechanisms, there is some support for the savings and occupational choice channels identified above.

To empirically test for these potential mechanisms, we first explored how the observed changes

in agent access are associated with changes in household assets (Table 2). Although there is no impact on physical asset holdings, we do measure a change in the log of total financial savings (including self-reported cash plus balances in bank accounts, savings clubs [savings and credit cooperatives (SACCOs) or rotating savings and credit associations (ROSCAs)], and mobile money accounts, as reported in column 2. The inter-quartile impact on financial savings of female-headed households is 22.3%.

However, as shown in columns 3 to 6, we were unable to detect a differential gender effect of the change in M-PESA access on the likelihood of using various financial products to save. That said, the change in access to mobile money does predict the adoption of a bank account (although not other financial products) in the sample as a whole (column 3), but this may be driven by the supply-side response as banks began either competing with mobile money or collaborating with M-PESA to create bank accounts like M-Shwari. Columns 3 and 4 show little evidence of impacts of agent access on self-reported safety and convenience of the household's financial instruments (see supplementary text) (14).

Table 3 presents evidence on the potential roles of occupational choice at the individual level, as well as household level migration and demographic composition, in driving the large observed changes in economic well-being. Indi-

viduals who saw larger increases in agent access were more likely to be working in “business or sales,” and less likely to be working in farming or to have a secondary occupation. These results are consistent with, although stronger than, some weak evidence of the impact of microcredit on occupational choices, primarily on business ownership (15–17). The last two effects were concentrated primarily among women, which suggests that financial inclusion helped them to graduate from subsistence agriculture and to reduce their reliance on multiple part-time occupations. This could be because mobile money allows women to directly access remittances and/or have more agency. It could also be that because women tend not to be the primary earner in the household, they may have been more constrained before the advent of mobile money. The results on women switching into business are the same for women in male-headed households, so the effects in Table 3 are not driven only by female-headed households.

By facilitating internal remittances, mobile money could have led to a more efficient allocation of labor over space and time, and indeed of human capital investment in the form of schooling choices. Column 5, which measures whether anyone in the household migrated since 2007, and column 6, which measures the number of migrants between 2007 and 2014, of Table 3 show insignificant increases in migration in response

to expanded M-PESA access. On the other hand, columns 7 and 8 provide suggestive evidence that the expansion led to a reduction in average household size. The effects were concentrated on children and could have been associated with lower fertility or children going to boarding school, although the magnitude of the effects is very small (see table S14). In table S13, we also report impacts on a range of remaining outcomes in the data, illustrating improvements in some household characteristics, such as what the house is made of, and what fuel and power the household uses.

Overall, attrition from our original non-Nairobi sample between 2008 and 2014 was 35% (18). To establish the robustness of our conclusions, we report two additional tests in tables S7 to S12 that show our results are not materially affected (see supplementary text). First, we restricted our analysis to the subsample of 50.4% of households in villages in which attrition was less than 35%, a subsample in which the attrition rate was only 17% after 6 years. Tables S7, S9, and S11 show these results, which are consistent with those in Tables 1 to 3. Second, we reweighted the data for attrition using the methods of (19). These results are reported in tables S8, S10, and S12, again consistent with our main findings. Looking across all these attrition checks, the results for consumption and poverty are robust, especially for female-headed households. The results for the overall sample on savings and bank accounts are also robust, as are the results on occupational choice. However, the results for household size are not robust to these checks. Finally, we find that attrition is largely uncorrelated with the independent variable of interest, changes in agent density, especially in locations with low attrition (see supplementary text).

In 2010, Kenya passed agent banking regulations that let banks compete directly with the existing M-PESA network. This was followed in 2011 by the launch of M-Shwari, a popular mobile phone-based bank account operating entirely through M-PESA (see supplementary text) and in 2014 by the opening of the M-PESA agent network to other telecommunications companies and banks. At the same time, the number of M-PESA agents continued to grow exponentially, from 23,000 agents in 2010 to 110,000 in 2014, and in a way that was now potentially correlated with underlying demand. Our estimates of the long-term causal impact of the initial deployment of agents thus include the effect of the subsequent competitive deepening. We argue that this is the correct measure of the impact of M-PESA, because this competitive deepening—especially for mobile phone banking products such as M-Shwari, and given the open M-PESA agent network—was a consequence of M-PESA itself.

Our evidence is in contrast to results reported in a number of recent studies of the impact of increasing access to credit for women. For example, a series of experimental studies (15–17, 20–23) on the impact of microcredit, typically targeted to female clients, found very limited

impacts on economic outcomes. Karlan and Zinman (24) reported results of a randomized trial in the Philippines that showed high demand for credit at market interest rates. But the credit itself had limited and in some cases negative impacts on business activities and subjective well-being, and did not affect women and men differentially. Similarly, the economic returns to capital grants (not loans) to small businesses have been found in a number of settings to be limited for female-operated entities, but positive for those run by men (25–27).

In contrast, more basic financial services such as the ability to safely store, send, and transact money—taken for granted in most advanced economies, and which in the form of mobile money have reached millions of Kenyans at unprecedented speed over the past decade—appear to have the potential to directly boost economic well-being. We have shown that access to mobile money has lifted as many as 194,000 households out of poverty, and has been effective in improving the economic lives of poor women and of members of female-headed households. Our evidence, and earlier work, suggests that these impacts derive from a more efficient allocation of labor, savings, and risk. On the other hand, we do not find any evidence that mobile money increased the overall safety and convenience of households' store of value. Although providing external sources of capital to such populations could, of course, have even larger impacts, our results suggest that having a private, low-cost means of managing financial resources is also necessary and can itself meaningfully reduce poverty rates among vulnerable groups. For women, the route out of poverty might not be more capital, but rather financial inclusion at a more basic level, which enhances their ability to manage those financial resources that are already accessible. Thus, although mobile phone use correlates well with economic development (28–31), mobile money causes it.

REFERENCES AND NOTES

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- See supplementary text for more background and detail on mobile money in Kenya.
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- The number of ATMs was 2698 in June 2015. In June 2014 it was 2618, and in June 2010 it was 1943. These data come from the Central Bank of Kenya Statistics. www.centralbank.go.ke/national-payments-system/payment-cards/number-of-atms-atm-cards-pos-machines/.
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- See supplementary text and (9) for more detail on the survey data collected.
- About 1027 households are covered in all five rounds, but (excluding 2011) 1299 households are covered in the four rounds.
- One level of local administrative units in Kenya are referred to as "locations," each with a population of 3000 households on average.
- We focus on safety and convenience as these are the most commonly cited reasons for using one financial instrument over any other (cost is only mentioned in 3.6% of cases).
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SUPPLEMENTARY MATERIALS

www.sciencemag.org/content/354/6317/1288/suppl/DC1
Supplementary Text
Figs. S1 to S4
Tables S1 to S14
Reference (33)

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The long-run poverty and gender impacts of mobile money
Tavneet Suri and William Jack (December 8, 2016)
Science **354** (6317), 1288-1292. [doi: 10.1126/science.aah5309]

Editor's Summary

Substituting minutes for money

In developing countries, bank branches and fixed-line telecommunications are scarce, whereas mobile phones are plentiful. These factors have led to the use of mobile money, whereby money can be used to purchase minutes, which can then be converted back into money. Suri and Jack show that increased access to mobile money has increased long-term consumption in Kenya and reduced the number of households in extreme poverty.

Science, this issue p. 1288

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