

# Financial education and spillover effects: Experimental evidence from Uganda

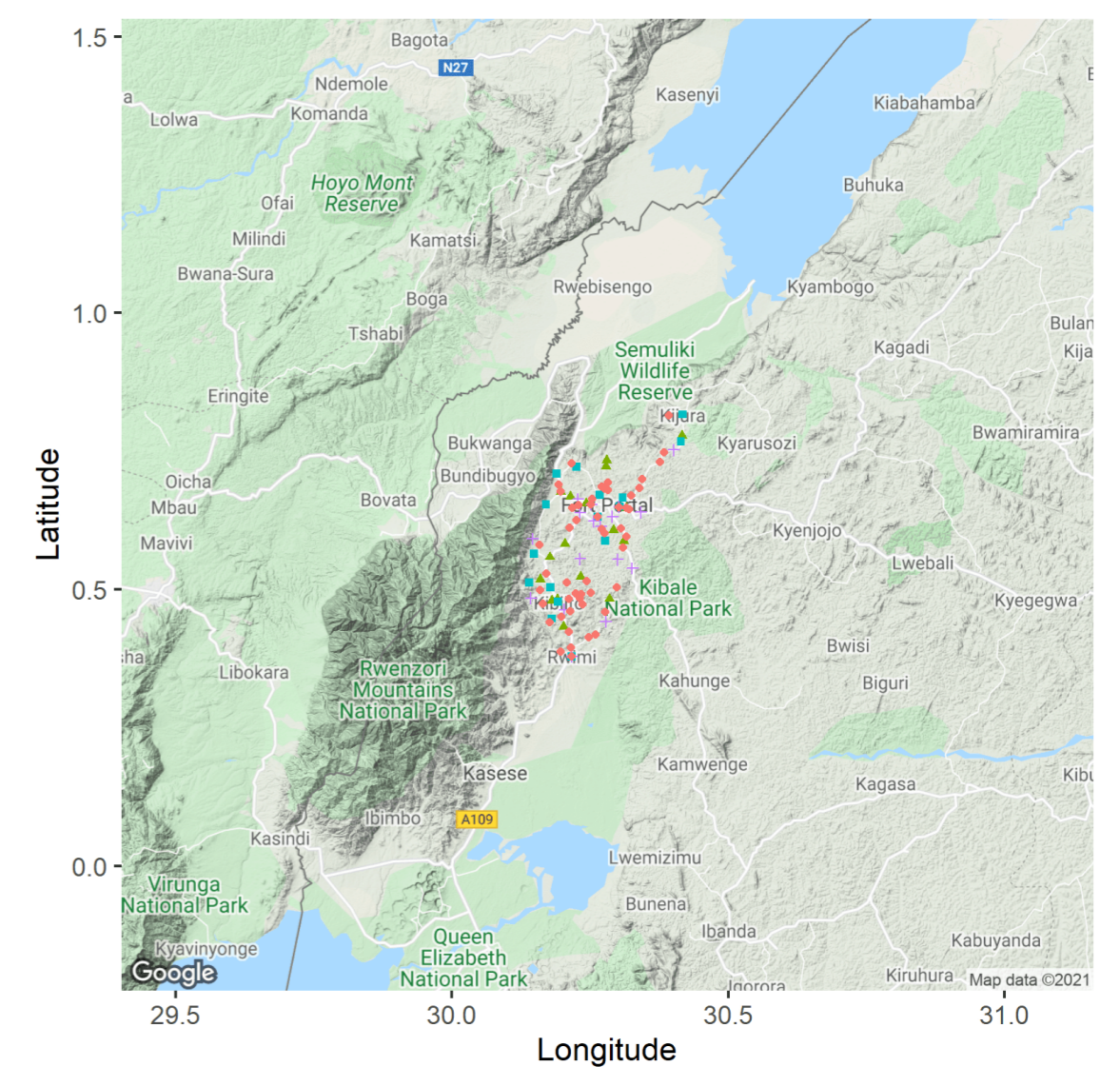
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## In this paper...

- ▶ we study the impact of a business and financial literacy program and its spillover effects on about 2,000 micro-entrepreneurs in rural Uganda using a two-stage randomized saturation experiment.
- ▶ we first randomize the program at the trading center level, and then randomize the share of treated micro-entrepreneurs in each cluster.
- ▶ we evaluate (i) the impact of an active learning financial education training on the financial behavior of micro-entrepreneurs, and (ii) the spillover effects more than one year after the intervention.
- ▶ we find that (i) the relatively short intervention generates several intended significant changes; (ii) the treatment works to also impact the use of mobile money; and (iii) spillovers are largely insignificant with many negative coefficient signs.

## Study area

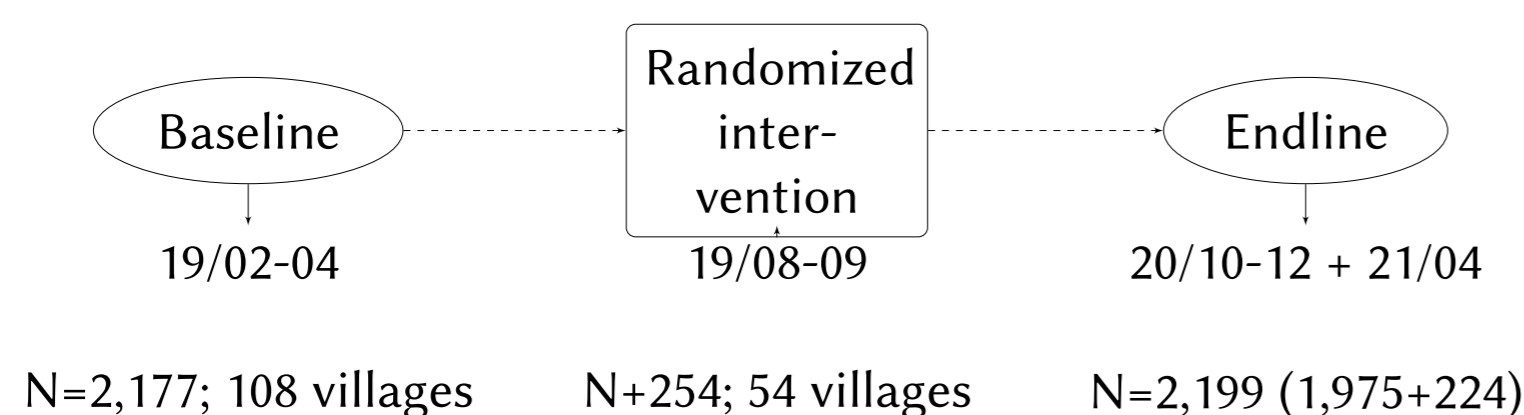


## Background

### Low adoption of mobile money

- ▶ Mobile money was found to improve risk sharing, household welfare, and financial inclusion.
- ▶ From our regionally representative survey at the baseline, we found that almost 90% of the micro-entrepreneurs own a mobile account, but only half of them use it.
- ▶ Two potential reasons for the low adoption: (i) complicated cost structure; (ii) low trust in this financial service.
- ▶ Mobile money is the most safe and cheapest way of making money transfer among all possible options in the local rural setting.

### Timeline of the study



Note: the 254 additional people who were not baselined were not included in the analysis.

### Randomized intervention

- ▶ a five-hour financial literacy training using active learning method,
- ▶ five main parts: (1) budgeting and record keeping, (2) saving, (3) debt management, (4) business investment and (5) money transfer.

### Endline Survey

- ▶ combines phone (1,777) and face-to-face (422) interviews,
- ▶ reaches 90.72% (1,975) of the baseline sample,
- ▶ randomization is still successful.

## Results

Table: Effects on Savings, Loans, Investment and Business Formality

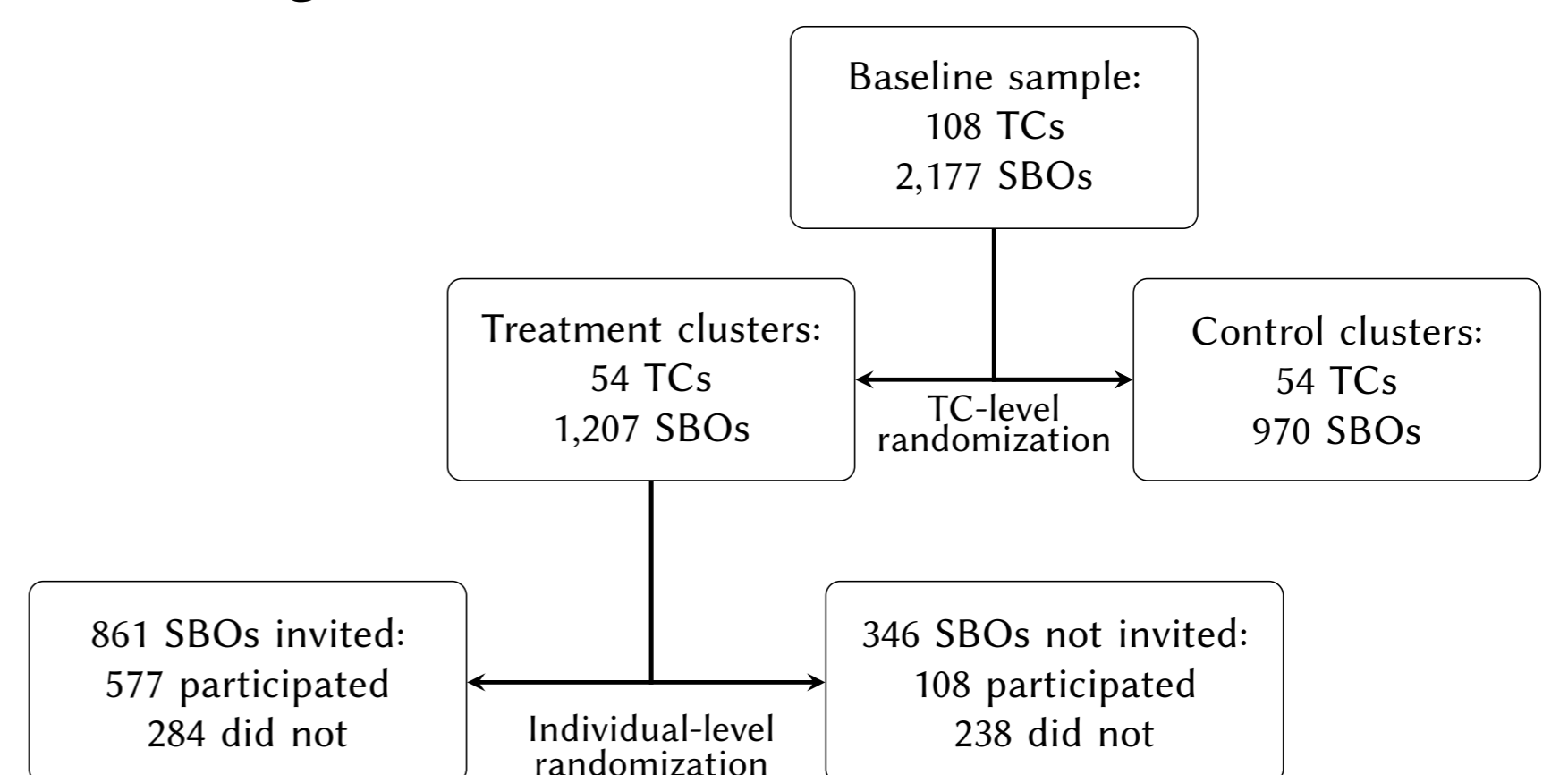
	Saving (=1)	In Saving	Formal Saving (=1)	In Formal Saving	Loan (=1)	In Loan	Formal Loan (=1)	Invest (=1)	In Invest	Record (=1)	Separate Personal (=1)
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
Control Mean	0.849	10.869	0.176	2.171	0.791	10.078	0.085	0.763	10.149	0.506	0.589
<i>ITT and Spillover Effects</i>											
Assigned to Training	0.015 (0.020)	0.154 (0.265)	0.046** (0.020)	0.560** (0.263)	-0.023 (0.021)	-0.358 (0.246)	0.022 (0.014)	0.040* (0.021)	0.495* (0.288)	0.011 (0.028)	0.018 (0.026)
Spillover Group	-0.017 (0.022)	-0.341 (0.314)	-0.002 (0.021)	0.006 (0.279)	-0.021 (0.024)	-0.455 (0.290)	0.000 (0.018)	0.001 (0.028)	-0.038 (0.376)	0.010 (0.031)	-0.013 (0.022)
T = Spillover ( <i>p</i> -value)	0.100	0.076	0.047	0.073	0.954	0.720	0.255	0.097	0.099	0.970	0.136
Observations	1975	1975	1975	1975	1975	1975	1975	1975	1975	1975	1975
R <sup>2</sup>	0.075	0.083	0.101	0.088	0.061	0.071	0.059	0.157	0.163	0.118	0.112

## Conclusion

- ▶ Firstly, we find that the financial education intervention has effects similarly to those found in a related training by Kaiser and Menkhoff (2018): the treatment significantly increases formal savings and investments more than one year after the intervention, but it does not improve record keeping.
- ▶ Secondly, regarding mobile money we find that the training succeeds in increasing to use the savings function of mobile money and the use of several payment functions.
- ▶ Finally, regarding spillovers we do not find a significant effect. We are somewhat surprised, however, by the often negative coefficients among the spillover group, a result that deserves further attention.

## Methodology

### Experimental Design



### Methodology

ITT:

$$Y_{isef} = \alpha_0 + \beta_1 Target_i + \beta_2 Spillover_i + \omega Y_{i0} + \lambda_s + \eta_e + \delta_f + \epsilon_{isef} \quad (1)$$

- ▶ ANCOVA specification (baseline value  $Y_{i0}$ ), strata FE ( $\lambda_s$ ), enumerator FE ( $\eta_e$ ), face-to-face interview dummy ( $\delta_f$ ).
- ▶ Weighted Least Square: baseline sampling weights, and assigned saturation weights (Baird et al, restat 2018)

### Hypothesis

- ▶  $\beta_1$  positive;
- ▶  $\beta_2$  could be positive (social learning, network effect), or negative (crowding-out effect).

Table: Effects on Mobile Money Use

	MM Active (=1)	# MM Active (0-4)	MM Saving (=1)	In MM Saving	MM Transfer (=1)	In MM Transfer	MM Payment (=1)	MM Supplier (=1)	MM Customer Share
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Control Mean	0.912	1.839	0.184	2.030	0.777	9.348	0.789	0.379	0.037
<i>ITT and Spillover Effects</i>									
Assigned to Training	0.016 (0.016)	0.058 (0.052)	0.054*** (0.020)	0.519** (0.234)	-0.019 (0.027)	-0.177 (0.332)	0.042* (0.025)	0.052* (0.028)	0.012* (0.007)
Spillover Group	-0.011 (0.019)	-0.094 (0.058)	-0.015 (0.027)	-0.157 (0.313)	-0.085*** (0.030)	-0.972*** (0.364)	0.023 (0.024)	0.026 (0.036)	0.005 (0.008)
T = Spillover ( <i>p</i> -value)	0.127	0.008	0.011	0.031	0.017	0.014	0.464	0.564	0.383
Observations	1975	1975	1975	1975	1975	1975	1975	1975	1975
R <sup>2</sup>	0.101	0.137	0.070	0.072	0.078	0.086	0.162	0.144	0.131