

# Active learning fosters financial behavior: Evidence from rural Uganda

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# Motivation

- Growing body of **literature** on the economic importance of financial literacy (FL) for financial behavior (FB) (cf. Lusardi and Mitchell 2014, JEL)
- Motivation for **policymakers** to invest resources in financial education in order to improve financial outcomes (increase individual welfare and contribute to market-stability).
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- Early meta-analysis indicates **no** significant overall effect of FE-treatment on FB (Fernandes et al. 2014, ManSci)
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## Determinants of program effectiveness?

- Treatment effects depend on responses from **heterogeneous consumers** (Lusardi, Michaud, and Mitchell 2017, JPE)
- Long-term effects may depend on implementation quality and **teacher training** (Bruhn et al. 2016, AEJ: Applied; Brown et al. 2016, RFS; Urban et al. 2018, EER)



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- FE works better when it is **personalized**; classroom trainings may be ineffective (Carpena et al. 2017, ManSci)
- Choosing the right **media** (videos and narratives) yields higher treatment effects in online courses (Heinberg et al. 2014; Lusardi et al. 2017)
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# Experimental design

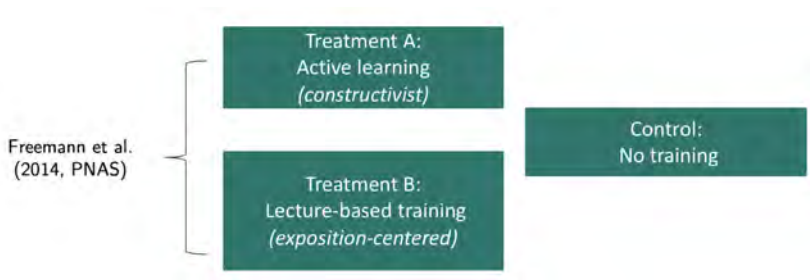


Figure: Experimental setup

# The FE-interventions

- Two versions of a FE-curriculum developed by BoU and GiZ
- **Standardized** with regard to...
  - **intensity** (120 min)
  - **content** areas (i. budgeting ii. borrowing iii. saving iv. investing v. payments and financial service providers)
  - **teachers**
  - **class size** (15-16 per class)

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# Timeline

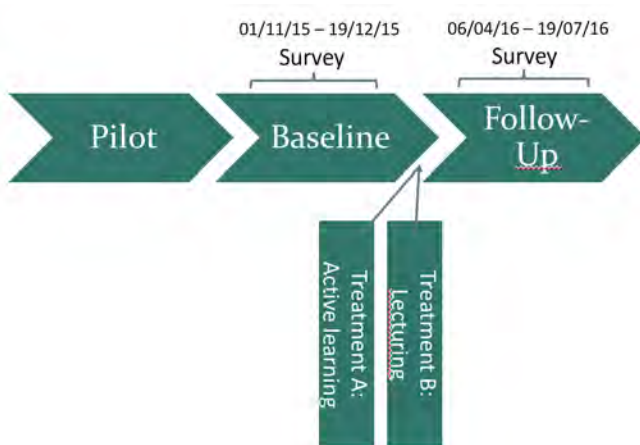


Figure: Timeline

# Cluster-randomization at the market-level (n=83)

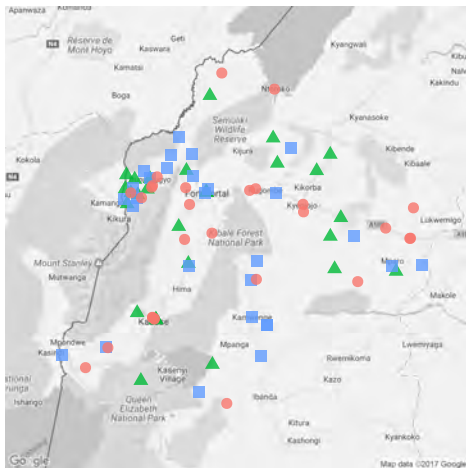


Figure: Location and treatment-status of 83 clusters

# Response rates

	<u>Wave</u>	<u>Control group</u>	<u>Treatment groups</u>		<u>Total</u>
			Treatment A	Treatment B	
Clusters (marketplaces) (%)	Baseline	28 (33.73%)	27 (32.54%)	28 (33.73%)	83 (100%)
	Follow-up	28 (33.73%)	27 (32.54%)	28 (33.73%)	83 (100%)
Individuals (%)	Baseline	456 (35.32%)	414 (32.07%)	421 (32.61%)	1,291 (100%)
	Follow-up	417 (35.89%)	384 (33.05%)	361 (31.06%)	1,162 (100%)
	Attrition (individuals)	39 (8.55%)	30 (7.25%)	60 (14.25%)	129 (9.99%)

## Main results: Differential treatment effects (ANCOVA)

	(1) Fin. literacy (z)	(3) Budget index (z)	(4) Savings index (z)	(5) Debt index (z)	(6) Investment index (z)	(7) Fin. services index (z)
Treatment A	0.134* (0.079)	0.045 (0.087)	0.162** (0.071)	0.104* (0.057)	0.284*** (0.097)	0.109 (0.077)
Treatment B	0.079 (0.071)	0.009 (0.088)	0.011 (0.077)	-0.038 (0.075)	0.168 (0.119)	0.149 (0.095)
$A - B = 0$ (p-value)	0.494	0.690	0.079*	0.052*	0.353	0.678
R <sup>2</sup>	0.051	0.108	0.151	0.009	0.144	0.130
Mean (SD) of $y_t$ in control group	0.000 (1.000)	0.000 (1.000)	0.000 (1.000)	0.000 (1.000)	0.000 (1.000)	0.000 (1.000)
Observations	1,160	1,114	1,160	1,108	1,007	1,136
Clusters	83	83	83	83	83	83
District FEs	yes	yes	yes	yes	yes	yes
$y_{(t-1)}$ covariate	yes	yes	yes	yes	yes	yes

Notes: Table shows OLS regression results of ANCOVA models. The dependent variables ( $y_t$ ) are indices of financial literacy and financial behavior and are standardized to have a zero mean and a standard deviation of one for the control group. Thus, coefficients can be interpreted as effect sizes (Glass's  $\Delta$ ). All currency denominated outcomes (in Ugandan Shilling (UGX)) within the indices in columns (4), (5), and (6) are winsorized at the 99<sup>th</sup> percentile. All models include the lagged outcome at baseline and district-level fixed effects. Standard errors (clustered at the market-level) are reported in parentheses. \*  $p < 0.1$ , \*\*  $p < 0.05$ , \*\*\*  $p < 0.01$

## Main results: More detail

	(a) Savings index			(b) Investment index	
	(1) Any savings	(2) Total savings <sup>+</sup>	(3) Net savings <sup>+</sup>	(4) Total investments <sup>+</sup>	(5) Business formally registered
Treatment A	0.036* (0.020)	109,186* (65,132)	145,480** (64,784)	90,173* (47,461)	0.077** (0.034)
Treatment B	0.025 (0.023)	-32,519 (68,588)	-14,226 (66,476)	41,801 (63,124)	0.060 (0.037)
$A - B = 0$ (p-value)	0.612	0.052*	0.025**	0.487	0.640
R <sup>2</sup>	0.023	0.244	0.131	0.184	0.035
Mean (SD) of $y_t$ in control group	0.879 (0.326)	513,629 (937,119)	380,568 (973,769)	301,067 (526,957)	0.232 (0.423)
Observations	1,160	1,162	1,162	1,053	1,110
Clusters	83	83	83	83	83
District FEs	yes	yes	yes	yes	yes
$y_{(t-1)}$ covariate	yes	yes	yes	yes	yes

Notes: Table shows OLS regression results of ANCOVA models. Columns (1) and (5) are linear probability models. All models include the lagged outcome at baseline and district-level fixed effects. + indicates that the currency denominated outcome (in Ugandan Shilling (UGX)) is winsorized at the 99<sup>th</sup> percentile. Standard errors (clustered at the market-level) are reported in parentheses. \*  $p < 0.1$ , \*\*  $p < 0.05$ , \*\*\*  $p < 0.01$

## How did these changes occur?

- It appears that vendors trained with Treatment A experience increased self-control and financial knowledge
- The result seems to be a reduction in consumption expenditures, repayment of some of the debt and ultimately an increase in net-savings (of roughly 38%) relative to the control group)
- An increase in financial literacy and confidence appears to be driving increased investments into the own business (30% relative to control)

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# Mechanisms: Savings

	1 <sup>st</sup> stage			2 <sup>nd</sup> stage		
<i>Panel A: Savings outcomes</i>						
	(1) Fin. literacy	(2) Self-control	(3) Attitudes	(4) Savings index(z)	(5) Savings index(z)	(6) Savings index(z)
Treatment A	0.156* (0.087)	0.152* (0.079)	0.160** (0.081)			
Treatment B	0.083 (0.076)	-0.058 (0.092)	0.193** (0.083)			
Fin. literacy*				1.248 (0.824)		
Self-control*					0.860* (0.518)	
Attitudes*						0.515 (0.476)
Observations	1,161	1,156	1,026	1,161	1,156	1,026

# Mechanisms: Investments

*Panel C: Investment outcomes*

	Fin. literacy	Self-control	Attitudes	Investment index (z)	Investment index (z)	Investment index (z)
Treatment A	0.188 ** (0.094)	0.134 (0.086)	0.141* (0.079)			
Treatment B	0.098 (0.083)	-0.073 (0.093)	0.217*** (0.074)			
Fin. literacy*				1.683* (0.955)		
Self-control*					0.734 (0.660)	
Attitudes*						1.321* (0.742)
Observations	1,037	1,033	920	1,037	1,033	920
Clusters	83	83	83	83	83	83
District FEs	yes	yes	yes	yes	yes	yes
$Y_{(t-1)}$ covariate	no	no	no	no	no	no

# Heterogeneity in treatment effects

		(1) FL score (z)	(2) Savings index (z)	(3) Investment index (z)
20 <sup>th</sup> percentile	Treatment A	0.161 (0.119)	0.035 (0.030)	0.027 (0.017)
	Treatment B	0.281** (0.120)	0.015 (0.031)	0.015 (0.020)
	$A - B = 0$ (p-value)	0.372	0.382	0.560
40 <sup>th</sup> percentile	Treatment A	0.180* (0.109)	0.026 (0.020)	0.095** (0.042)
	Treatment B	0.204* (0.108)	-0.002 (0.020)	0.044 (0.035)
	$A - B = 0$ (p-value)	0.804	0.217	0.315
Median	Treatment A	0.108 (0.111)	0.037 (0.027)	0.155** (0.0649)
	Treatment B	0.101 (0.096)	-0.003 (0.027)	0.108** (0.055)
	$A - B = 0$ (p-value)	0.941	0.180	0.527
60 <sup>th</sup> percentile	Treatment A	0.154 (0.135)	0.068** (0.029)	0.301** (0.143)
	Treatment B	-0.022 (0.115)	0.007 (0.029)	0.137* (0.076)
	$A - B = 0$ (p-value)	0.154	0.052*	0.263
80 <sup>th</sup> percentile	Treatment A	0.136 (0.095)	0.134* (0.073)	0.466** (0.208)
	Treatment B	-0.037 (0.096)	-0.037 (0.057)	0.187 (0.206)
	$A - B = 0$ (p-value)	0.091*	0.022**	0.162
Observations		1,162	1,160	1,007
Clusters		83	83	83

# IPW for selection into endline

	(1)	(2)	(3)	(4)	(5)	(6)
	FK score (z)	Budget index (z)	Savings index (z)	Debt index (z)	Invest- ments (z)	Fin. services index (z)
Treatment A	0.138 (0.084)	0.042 (0.086)	0.161** (0.072)	0.104* (0.057)	0.280*** (0.096)	0.109 (0.077)
Treatment B	0.084 (0.075)	0.004 (0.086)	0.017 (0.076)	-0.045 (0.076)	0.168 (0.116)	0.158 (0.095)
$A - B = 0$ (p-value)	0.521	0.672	0.094*	0.043**	0.354	0.617
R <sup>2</sup>	0.052	0.109	0.151	0.009	0.142	0.131
Mean (SD) of $y_t$ in control group	0.000 (1.000)	0.000 (1.000)	0.000 (1.000)	0.000 (1.000)	0.000 (1.000)	0.000 (1.000)
Observations	1,160	1,114	1,160	1,108	1,007	1,136
Clusters	83	83	83	83	83	83
District FEs	yes	yes	yes	yes	yes	yes
$y_{(t-1)}$ covariate	yes	yes	yes	yes	yes	yes
IPW	yes	yes	yes	yes	yes	yes

## Take aways

- Active learning appears to have larger effects on knowledge, savings and business investments than lecturing
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**Additional slides**



## Empirical strategy

$$y_{ic(t)} = \alpha + \beta_1 A_{ic}^T + \beta_2 B_{ic}^T + \delta_1 y_{ict-1} + \theta_d + \varepsilon_{ict}$$

- $y_{ic(t)}$  denotes the outcome (measure of financial literacy or behavior) for individual  $i$  in cluster  $c$  at the time of follow-up ( $t$ )
- $A_{ic}^T$  and  $B_{ic}^T$  are dummy variables equal to one for respondents situated in a cluster being assigned to treatment A or B, respectively.
- $y_{ic(t-1)}$  controls for the value of the outcome at baseline
- $\theta_d$  are district-level fixed-effects
- $\varepsilon_{ict}$  denotes the error-term

## Creating an index for each outcome family

- To avoid problems inherent to testing multiple hypotheses (type-I-error inflation), we aggregate multiple related outcomes into index-measures of outcomes families:
- We define  $y^*$  to be an equally weighted average z-score index of its components :  $y_k^* = \frac{y_k - \mu_k}{\sigma_k}$ , with  $\mu_k$  denoting the mean of  $y_k$  for the control group (C) and  $\sigma_k$  denoting the standard deviation of  $y_k$  for the control group.
- The aggregate index then takes the following form:  $y^* = \frac{\sum_k y_k^*}{k}$ .

## Descriptive statistics & randomization balance

		<u>Full sample</u>	<u>Control (C)</u>	<u>Treatment (A)</u>		<u>Treatment (B)</u>	
	Obs.	Mean (SD)	Mean (SD)	Mean (SD)	Diff. from C [SE]	Mean (SD)	Diff. from C [SE]
<i>Panel A: Household characteristics</i>							
Household size	1,259	6.83 (3.77)	6.86 (3.52)	7.00 (4.25)	0.14 [0.33]	6.64 (3.52)	-0.22 [0.33]
No. of contributors	1,277	2.12 (1.98)	2.12 (2.01)	2.06 (1.95)	0.06 [0.14]	2.19 (1.98)	0.06 [0.12]
No. of children	1,273	4.17 (2.95)	4.29 (2.88)	4.29 (3.22)	0.00 [0.27]	3.94 (2.75)	-0.35 [0.24]
No. of rooms	1,284	3.23 (1.84)	3.37 (1.94)	3.14 (1.78)	-0.23 [0.17]	3.16 (1.79)	-0.21 [0.17]
Owns dwelling	1,291	0.74 (0.44)	0.78 (0.41)	0.70 (0.46)	-0.08* [0.05]	0.72 (0.45)	-0.56 [0.05]
Assets (z-score)	1,162	0.00 (1.00)	0.07 (1.07)	-0.06 (0.99)	-0.13 [0.13]	-0.01 (0.93)	-0.08 [0.11]
Tap water	1,291	0.46 (0.50)	0.40 (0.49)	0.50 (0.50)	0.10 [0.08]	0.47 (0.50)	0.07 [0.09]
Monthly consumption <sup>+</sup>	1,286	592,775 (408,015)	592,219 (402,390)	616,570 (448,328)	24,350 [49,884]	569,925 (370,276)	-22,294 [39,842]

## Descriptive statistics & randomization balance

		<u>Full</u> <u>sample</u>	<u>Control</u> <u>(C)</u>	<u>Treatment (A)</u>		<u>Treatment (B)</u>	
	Obs.	Mean (SD)	Mean (SD)	Mean (SD)	Diff. from C [SE]	Mean (SD)	Diff. from C [SE]
Monthly income <sup>+</sup>	1,250	219,867 (327,192)	222,400 (337,538)	203,232 (283,402)	-19,168 [32,471]	233,565 (355,164)	11,165 [33,255]
Female	1,265	0.80 (0.40)	0.80 (0.40)	0.79 (0.41)	-0.01 [0.05]	0.80 (0.40)	0.00 [0.06]
Age	1,277	36.23 (11.89)	37.72 (12.36)	35.38 (11.53)	-2.34* [1.18]	35.46 (11.59)	-2.26* [1.19]
Education	1,282	6.83 (3.69)	7.11 (3.66)	6.61 (3.71)	-0.49 [0.38]	6.74 (3.70)	-0.36 [0.35]
Literate	1,238	0.68 (0.47)	0.70 (0.46)	0.64 (0.48)	-0.06 [0.05]	0.68 (0.47)	-0.02 [0.04]
Econ. dependent	1,285	0.16 (0.36)	0.15 (0.36)	0.16 (0.37)	0.01 [0.03]	0.16 (0.37)	0.01 [0.03]
Receives aid	1,277	0.22 (0.41)	0.24 (0.43)	0.21 (0.41)	-0.03 [0.04]	0.21 (0.40)	-0.03 [0.03]
Married	1,291	0.62 (0.49)	0.59 (0.49)	0.60 (0.49)	0.01 [0.04]	0.66 (0.48)	0.07 [0.04]
Main contrib.	1,291	0.70 (0.46)	0.70 (0.46)	0.74 (0.44)	0.04 [0.04]	0.67 (.47)	-0.03 [0.04]

## Randomization balance for outcomes at baseline

<i>Panel C: Outcome measures at baseline</i>							
(1) Fin. literacy score	1,291	0.03 (0.98)	0.00 (1.00)	0.10 (0.96)	0.10 [0.11]	0.00 (0.99)	0.00 [0.11]
(2) Budgeting index	1,248	-0.02 (0.96)	0.00 (1.00)	-0.10 (0.91)	-0.10 [0.08]	0.04 (0.97)	0.04 [0.08]
(3) Savings index	1,161	0.04 (1.04)	0.00 (1.00)	0.07 (1.14)	0.07 [0.09]	0.05 (1.00)	0.05 [0.10]
(4) Borrowing index	1,126	0.06 (1.25)	0.00 (1.00)	0.01 (1.32)	0.01 [0.08]	0.17 (1.43)	0.17 [0.11]
(5) Investments index	1,142	0.04 (1.07)	0.00 (1.00)	0.00 (1.08)	0.00 [0.11]	0.10 (1.14)	0.10 [0.11]
(6) Fin. services index	1,241	0.02 (1.07)	0.00 (1.00)	-0.04 (0.99)	-0.04 [0.10]	0.11 (1.07)	0.11 [0.11]
F-test of joint orthogonality: any treatment (p-value)					0.308		

## Index components: Budgeting

	(1) Knows how to write a budget	(2) Usually keeps track of spending	(3) Separates business and private budget	(4) Keeps a written budget	(5) Has kept track of spending in last 6 month
Treatment A	0.004 (0.025)	0.046 (0.041)	0.046 (0.038)	-0.008 (0.037)	-0.007 (0.035)
Treatment B	-0.047** (0.021)	0.039 (0.039)	0.064 (0.043)	0.003 (0.034)	0.007 (0.033)
$A - B = 0$ (p-value)	0.015**	0.842	0.661	0.751	0.681
R <sup>2</sup>	0.011	0.046	0.032	0.149	0.149
Mean of $y_t$ in C	0.098	0.665	0.450	0.284	0.274
Observations	1,162	1,160	1,131	1,150	1,153
Clusters	83	83	83	83	83
District FEs	yes	yes	yes	yes	yes
$y_{(t-1)}$ covariate	yes	yes	yes	yes	yes

Notes: Coefficients show results from linear probability models. All models include the lagged outcome at baseline and district-level fixed effects. Standard errors (clustered at the market-level) are reported in parentheses. \*  $p < 0.1$ , \*\*  $p < 0.05$ , \*\*\*  $p < 0.01$

## Index components: Borrowing

	(1) Loans for consumption*	(2) Loans for productive investment	(3) Debt to asset ratio (z-score)*	(4) Would take loan if no clear plan*	(5) Can correctly identify a "bad" loan
Treatment A	2,142 (5,840)	-15,615 (37,458)	-0.089 (0.074)	-0.055** (0.023)	-0.001 (0.010)
Treatment B	12,855 (9,345)	-43,846 (36,785)	0.006 (0.090)	-0.038 (0.023)	0.004 (0.010)
$A - B = 0$ (p-value)	0.231	0.4043	0.268	0.495	0.900
R <sup>2</sup>	0.010	0.108	0.119	0.014	0.006
Mean (SD) of $y_t$ in control group	20,763 (98,688)	151,021 (387,398)	0.000 (1.000)	0.139 (0.346)	0.029 (0.167)
Observations	1,158	1,158	1,153	1,116	1,162
Clusters	83	83	83	83	83
District FEs	yes	yes	yes	yes	yes
$y_{t-1}$ covariate	yes	yes	yes	yes	yes

Notes: Columns (1) to (3) show OLS-regressions. Columns (4) and (5) are linear probability models. Dependent variable in Column (1) is the amount of credit intended for consumption purposes. Dependent variable in Column (2) is the amount of debt intended for productive investments. Dependent variable in Column (3) reports the ratio between debt and household assets and is transformed to a z-score. Dependent variables in Columns (4) and (5) are binary items reporting whether a respondent would be willing to take up a loan if he or she had no plans on how to use the money or whether a respondent can separate between good and bad reasons to take up a loan as stated in an hypothetical example. Items marked with an asterisk (\*) are later rescaled for the composition of the index such that positive values indicate better outcomes. All models include the lagged outcome at baseline and district-level fixed effects. + indicates that the currency denominated outcome (in Ugandan Shilling (UGX)) is winsorized at the 99<sup>th</sup> percentile. Standard errors (clustered at the market-level) are reported in parentheses. \*  $p < 0.1$ , \*\*  $p < 0.05$ , \*\*\*  $p < 0.01$ .

## Index components: Fin. Services

	(1) Ever purchased a formal insurance product	(2) Has ever used mobile money
Treatment A	0.006 (0.027)	0.063* (0.037)
Treatment B	0.050 (0.035)	0.035 (0.045)
$A - B = 0$ (p-value)	0.159	0.514
R <sup>2</sup>	0.036	0.194
Mean (SD) of $y_t$ in control group	0.099 (0.299)	0.442 (0.497)
Observations	1,133	1,136
Clusters	83	83
District FEs	yes	yes
$y_{(t-1)}$ covariate	yes	yes

Notes: Coefficients show results from linear probability models. All models include the lagged outcome at baseline and district-level fixed effects. Standard errors (clustered at the market-level) are reported in parentheses. \*  $p < 0.1$ , \*\*  $p < 0.05$ , \*\*\*  $p < 0.01$



## Score: Fin. literacy

	(1)	(2)	(3)	(4)	(5)
	Item 1	Item 2	Item 3	Item 4	Item 5
Treatment A	-0.013 (0.029)	0.022 (0.032)	0.084** (0.036)	-0.016 (0.039)	0.073* (0.040)
Treatment B	0.002 (0.031)	0.007 (0.029)	0.039 (0.034)	0.027 (0.047)	0.028 (0.042)
$A - B = 0$ (p-value)	0.636	0.629	0.275	0.304	0.224
R <sup>2</sup>	0.054	0.009	0.028	0.019	0.016
Mean (SD) of $y_t$ in control group	0.653 (0.477)	0.672 (0.470)	0.444 (0.497)	0.436 (0.496)	0.512 (0.500)
Observations	1,150	1,157	1,158	1,158	1,158
Clusters	83	83	83	83	83
District FEs	yes	Yes	yes	yes	yes
$y_{(t-1)}$ covariate	yes	yes	yes	yes	yes

Notes: Coefficients show results from linear probability models. For the results on the composite index reported in the main text, predicted scores from the 2PML are used (cf. Appendix C). All models include the lagged outcome at baseline and district-level fixed effects. Standard errors (clustered at the market-level) are reported in parentheses. \*  $p < 0.1$ , \*\*  $p < 0.05$ , \*\*\*  $p < 0.01$ .

## FL-items

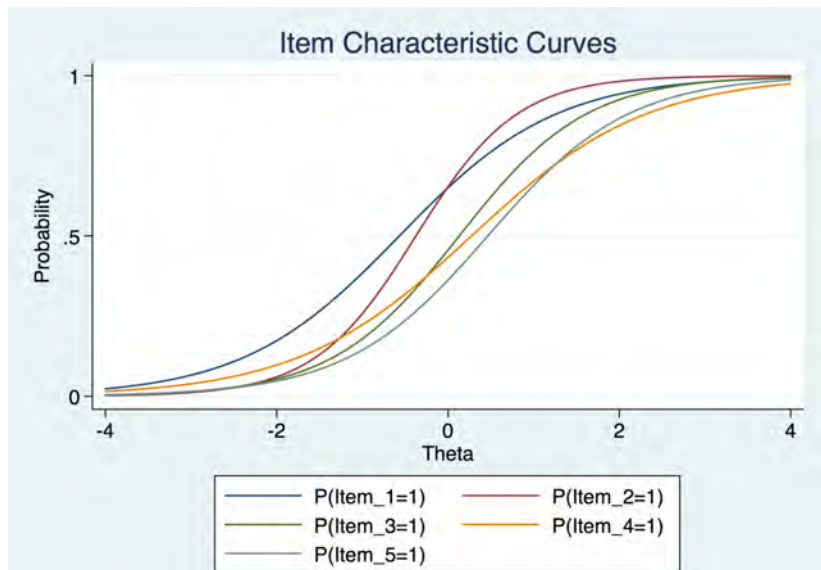
Item	Topic	Question and response options	$a_i$ (SE)	$b_i$ (SE)	% correct baseline	% correct endline
1	Diversification	Is it riskier to plant...? A) multiple crops or <b>B) one crop</b> Y) Don't know Z) Refuse to Answer	1.092 (0.166)	-0.569 (0.104)	62.28	64.52
2	Inflation	If you have UGX. 100,000 in a savings account earning 1% interest per annum, and prices for goods and services rise 2% over a 1-year period, can you buy A) more than, <b>B) less than,</b> C) or the same amount of goods in 1 year as you could today, with the money in the account?" Y) Don't know Z) Refuse to Answer	1.692 (0.258)	-0.375 (0.085)	60.50	67.16
3	Interest rate (loan)	If you were offered a loan with 5% monthly interest rate and a loan with 20% annual interest rate, which loan would offer better value? A) 5% monthly interest rate <b>B) 20% annual interest rate</b> Y) Don't know Z) Refuse to Answer	1.346 (0.149)	0.130 (0.061)	46.79	48.88

## FL-items

4	Interest rate (loan)	Suppose you need to borrow 500,000 UGX. Two people offer you a loan. Which loan represents a better deal for you? A) One loan requires you to pay back 600,000 UGX in 1 month. <b>B) The second loan requires you to pay back in 1 month 500,000 UGX plus 15% interest.</b> Y) Don't know Z) Refuse to Answer	0.981 (0.152)	0.274 (0.107)	44.46	43.78
5	Compound interest	Suppose you borrow 100,000 UGX at an interest rate of 2% per month, with no repayment for 3 months. After 3 months, do you owe A) less than. 102,000 UGX, B) exactly. 102,000 UGX, <b>C) or more than 102,000 UGX?</b> Y) Don't know Z) Refuse to Answer	1.218 (0.146)	0.463 (0.087)	39.27	52.94

Notes: N=1,291 at baseline. Results from fitting a 2PLM to the 5 items. Standard errors are clustered at the market-level. Items are coded to be binary. The correct response is coded to be equal to one. Wrong answers, missing values, and response options Y) and Z) are coded to be equal to zero.

# Psychometric properties of the FL-scale



## Items for measure of self-control

If you get money, do you tend to spend it too quickly?	OFTEN.....	1
	SOMETIMES.....	2
	RARELY.....	3
	NEVER.....	4 → TO Q143
Do you therefore put most of your money into a safe place in order to avoid spending it too quickly?	OFTEN.....	1
	SOMETIMES.....	2
	RARELY.....	3
	NEVER.....	4

## Items for measure of attitudes

In case you are dissatisfied with a financial service provider and you complain, do you think that the financial service provider is more powerful than you, and that the complaint will therefore not lead to anything?

Yes \_\_\_\_\_ 1  
 No \_\_\_\_\_ 0  
 Don't know \_ 99

Please tell me how strongly you agree or disagree with the following statements, which other people have made about taking out financial products

I am confident enough to approach a bank and ask questions to learn more about their products.

Disagree strongly \_\_\_ 1  
 Tend to agree \_\_\_\_\_ 2  
 Agree strongly \_\_\_\_\_ 3  
 Don't know \_\_\_\_\_ 99

I am confident that among a range of loans offered by different banks, I can choose the loan that best suits my specific needs.

Disagree strongly \_\_\_ 1  
 Tend to agree \_\_\_\_\_ 2  
 Agree strongly \_\_\_\_\_ 3  
 Don't know \_\_\_\_\_ 99

Which of the following statements best describes how you last chose a financial product (loan, account, policy...)?

I considered several products from different companies before making my decision \_\_\_\_\_ 1  
 I considered the various products from one company \_\_\_\_\_ 2  
 I didn't consider any other products at all \_\_\_\_\_ 3  
 I looked around but there were no other products to consider \_\_\_ 4

**CHOOSE ONE!!!**

## Heterogeneity: Gender

	(1) FK score (z)	(2) Budget index (z)	(3) Savings index (z)	(4) Debt index (z)	(5) Investment index (z)	(6) Fin. services index (z)
<i>Panel A: Male respondents</i>						
Treatment A	0.053 (0.100)	0.029 (0.085)	0.184** (0.076)	0.141** (0.065)	0.224** (0.0863)	0.062 (0.077)
Treatment B	0.044 (0.086)	0.001 (0.089)	0.0391 (0.072)	0.0470 (0.088)	0.168 (0.106)	0.168* (0.091)
Male	-0.101 (0.101)	0.307** (0.147)	0.306** (0.125)	0.407*** (0.122)	0.406** (0.172)	0.362*** (0.109)
Treatment A × Male	0.392** (0.170)	0.079 (0.214)	-0.0442 (0.204)	-0.205 (0.185)	0.274 (0.348)	0.157 (0.195)
Treatment B × Male	0.155 (0.157)	0.059 (0.182)	-0.101 (0.244)	-0.409** (0.194)	0.0849 (0.285)	-0.0121 (0.190)
Obs.	1,138	1,091	1,136	1,085	987	1,088
R2	0.053	0.123	0.158	0.018	0.177	0.156

## Heterogeneity: Education

*Panel B: Respondents with beyond primary education*

Treatment A	0.121 (0.095)	0.066 (0.082)	0.183** (0.077)	0.134** (0.065)	0.237** (0.100)	0.110 (0.082)
Treatment B	0.149 (0.091)	0.044 (0.081)	0.061 (0.067)	-0.044 (0.100)	0.128 (0.112)	0.104 (0.106)
Educated	0.165 (0.105)	0.303*** (0.106)	0.334*** (0.098)	0.184* (0.108)	0.055 (0.113)	0.228** (0.100)
Treatment A × Educated	0.126 (0.147)	-0.053 (0.147)	-0.032 (0.164)	-0.102 (0.139)	0.229 (0.215)	0.032 (0.168)
Treatment B × Educated	-0.256 (0.164)	-0.107 (0.174)	-0.172 (0.156)	0.037 (0.187)	0.169 (0.267)	0.199 (0.138)
Obs.	1,162	1,114	1,160	1,108	1,007	1,111
R <sup>2</sup>	0.0577	0.120	0.164	0.014	0.150	0.146



## Heterogeneity: Fin.lit

*Panel C: Respondents with above average financial literacy at baseline*

Treatment A	0.099 (0.105)	-0.140 (0.0942)	0.260** (0.105)	0.162* (0.087)	0.198* (0.110)	0.084 (0.118)
Treatment B	0.092 (0.099)	-0.121 (0.104)	0.158 (0.108)	-0.068 (0.099)	0.071 (0.109)	0.100 (0.137)
Fin. literate	0.090 (0.132)	-0.122 (0.079)	0.258** (0.111)	0.046 (0.095)	0.055 (0.091)	0.118 (0.093)
Treatment A × Fin. literate	0.079 (0.143)	0.336** (0.132)	-0.194 (0.144)	-0.106 (0.131)	0.145 (0.143)	0.036 (0.136)
Treatment B × Fin. literate	-0.019 (0.154)	0.250* (0.146)	-0.283* (0.143)	0.060 (0.124)	0.188 (0.166)	0.102 (0.160)
Obs.	1,162	1,114	1,160	1,108	1,007	1,111
R <sup>2</sup>	0.052	0.115	0.157	0.010	0.150	0.136