

Working paper

Microcredit and microsavings for microenterprises in Pakistan

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Microcredit and Microsavings for Microenterprises in Pakistan: Final Project Report

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Abstract

We ran a field experiment of a novel microfinance product, inspired by the rotating structure of a ROSCA. This is a scaled-up version of the product structure presented in CSAE Working Paper WPS/2014-32 ((Afzal, d'Adda, Fafchamps, Quinn, and Said (2014), 'Two Sides of the Same Rupee? Comparing Demand for Microcredit and Microsaving in a Framed Field Experiment in Rural Pakistan'). Fieldwork was completed in April, 2015 and we received the final data in August, 2015. We find that the take-up of the product is significantly affected by the interest rate and week on which payment is made. Take-up is higher when the interest rate offered to the respondents is positive. Take-up is lower when the offer involves lump sum payment being made at the end of the product cycle rather than at the start. Treatment effect on firm outcomes show that net profits of the enterprise owned by respondents are higher by about 10%. Treated respondents are approximately 6% less likely to find it hard to save. However, treated respondents also score lower on an index measuring their involvement in household decision making.

1 Introduction

This document provides details of the design and preliminary findings. The analysis has been done in accordance with a pre-analysis plan registered with the AEA RCT Registry on 10 May 2014. The pre analysis is based on the recommendations of McKenzie (28 October 2012, Development Impact Blog) and summarises (i) our experiment and resulting data and (ii) our plan of regressions.

This experiment was run in Bhakkar and Chakwal in Punjab, Pakistan from 25 August 2014 to 1 March 2015; endline survey was completed by 30 March, 2015. At the time of the writing of the pre-analysis plan, we had received the baseline questionnaire data as well as administrative data on take-up from NRSP. We received the final endline questionnaire data by the end of June, 2015.

2 Design of the experiment

In September and October 2013, we piloted a new microfinance product in Sargodha. The product was an individual microfinance product, inspired by the rotating structure of a savings committee. That pilot was very successful: the research team was able to implement effectively with outstanding support from NRSP, and the target population (women in microfinance groups) showed high demand for the piloted product.

This project involves scaling up the pilot in Sargodha, 2013. It was run in urban branches of NRSP in Bhakkar and Chakwal. It repeated the basic rotating structure of the product used in the pilot; this is described in more detail shortly. The project scales up the pilot in Sargodha in three main ways:

- The product involves participants to make weekly repayments, rather than daily repayments that were used in the pilot, over a period of six weeks.

- Participants in this study were required to run a small business (either individually or jointly with their spouse).
- We administered an extensive baseline and follow-up questionnaire to elicit more detailed information on participants.

2.1 Contract design

The contract repeated over three cycles, each cycle lasting six weeks. A week before each cycle would start, each participant was offered one of 6 different types of micro-finance contract. This was done by randomly drawing cards to determine which type will be offered. These contracts will differ by (i) timing of lump sum payment (p) and (ii) interest rate (r). Lump sum payments will either be made in Week 1 or Week 6. Interest rates will either be 0%, 10% or -10%. The weekly payment will be 1000 rupees.

Respondents who agree to take the product must make payments of 1000 PKR each week in five out of the six weeks. In one of the six weeks, either week 1 or week 6, the participant receives a lump sum payment from NRSP. The base lump sum payment is either 4500 PKR (that is, $r = -10\%$), 5000 PKR ($r = 0\%$) or 5500 PKR ($r = +10\%$). At the time of the experiment, 1000 Pakistani rupees was worth approximately US \$10; 5000 PKR was therefore approximately US \$50.

The following table illustrates the payment schedule for a contract with lumpsum payment on day $p = 6$ and interest rate $r = +10\%$:

	WEEK 0	WEEK 1	WEEK 2	WEEK 3	WEEK 4	WEEK 5	WEEK 6
Participant pays	<i>take up</i>	1000	1000	1000	1000	1000	0
Bank pays	<i>decision</i>						5500

Since there are three possible interest rate values and two possible days for the lump-sum payment, 6 different contracts were used in the experiment to represent each combination of p and r . At the beginning of the week each participant in the experiment was offered one of these contracts, and had to make a take-it-or-leave-it decision whether to accept it. We are interested to test (i) whether there was demand for this generalised ROSCA contract, and (ii) if so, how demand varied with the terms of the contract.

2.2 Experiment Implementation

In each district, the selected branches served as geographical units within which we will organize the product. Within each unit, we ran the experiment as follows:

1. We conducted microenterprise surveys with 790 female NRSP clients who ran a small business at that time. We explained that we are interested in testing a new microfinance product and that we will conduct an end line survey after 21 weeks. Respondents were told if they complete the endline survey, they will be provided with a gift of 500 PKR.
2. Over the next week, NRSP field staff met with clients who were surveyed and were then randomly selected to be offered a microfinance product. The initial meeting took place either at the respondent's place of business or their home and the location of subsequent meetings was set in consultation with the respondent.
3. Treated respondents received three visits from a representative of NRSP; one visit one week after the baseline questionnaire, a second visit after seven weeks, and a third visit after 14 weeks. At each visit from NRSP, members of the treated group were offered a new microfinance product, which they could choose to accept or to refuse. The respondent was asked to draw 2 cards; one to determine the interest rate and one to determine the week of repayment.
4. After the end of product roll-out i.e. after 21 weeks, respondents were inter-

viewed again for the endline survey. Respondents who agreed to participate and were not selected for product offer were simply interviewed again after 21 weeks.

5. Respondents who agreed to participate in the trial given a gift of 500 PKR after they completed the Endline Survey after 21 weeks. For treated respondents, there was an additional gift of 500 PKR, conditional on meeting with NRSP after 1 week, seven weeks and 14 weeks and participating in the endline survey after 21 weeks, even if they chose not to take up the microfinance product being offered at each of these meetings. At the end of the endline survey, these clients then received a gift of a total of 1000 PKR (500 + 500), conditional on having repaid any amount owed to NRSP. Respondents in the control group only received a gift of 500 PKR if they participated in the second interview after 21 weeks.

3 Experiment sample

Our sample consists of National Rural Support Programme (NRSP) female members who are currently, or have in the past, been clients of some microfinance products being offered by the NRSP. The sample was drawn from files at the NRSP field offices in Bhakkar and in Chakwal. We conducted a baseline face-to-face interview with a sample of approximately 800 women at either their home or their business (as they preferred). Approximately half of the sample were assigned to treatment and half to control; this was done by blocked randomisation in Stata. Treated clients were visited on three separate occasions by NRSP staff members to be offered a microfinance contract with a randomly-drawn interest rate ($r \in \{-0.1, 0, 0.1\}$) and week of lump-sum payment ($p \in \{1, 6\}$).¹

¹ This follows closely the contractual design in Afzal, d'Adda, Fafchamps, Quinn, and Said (2014), 'Two Sides of the Same Rupee? Comparing Demand for Microcredit and Microsaving in a Framed Field Experiment in Rural Pakistan'.

Our estimations include all individuals who agreed to participate in the trial (i.e. not just those who participated in all three experiment waves). In addition, we report the default rates for individuals who agree to participate in the product offered in a particular round but fail to make the installments or drop out between the round has completed. We also report their reasons for dropping out to ascertain their preferences for the product offered.

4 Data

We have two data sources: (i) administrative data, recording whether each respondent was treated, what interest rate and repayment time were offered, and whether the respondent agreed to the contract, and (ii) baseline and endline face-to-face interviews.

Details of the variables that will be constructed from the data are summarized in Appendix 1. These variables have been constructed as detailed in the pre analysis plan.

4.1 Testing balance

Throughout our analysis of balance, take-up and product impact, we cluster our errors at the level of the *mohallah* – that is, the *mohallah* in which the respondent is regularly contacted. (The concept of the *mohallah* is well understood in Pakistan; there is no ambiguity in the records that NRSP provided us about which respondent is in which *mohallah*. We use the assignment in these records.)

Before the main estimations are run, we check for balance for each of the outcome variables listed from the interview data (that is, both for outcome variables and for control variables). Denote the value for any given covariate in the baseline survey as y_{i0} . Then, for each covariate separately, we estimate the following:

$$y_{i0} = \beta_0 + \beta_1 \cdot m_i + \varepsilon_i \quad (1)$$

$$\begin{aligned} y_{i0} = & \gamma_0 \cdot p1_{iw} + \gamma_1 \cdot p6_{iw} + \gamma_2 \cdot rneg_{iw} \times p1_{iw} + \gamma_3 \cdot rneg_{iw} \times p6_{iw} \\ & + \gamma_4 \cdot rpos_{iw} \times p1_{iw} + \gamma_5 \cdot rpos_{iw} \times p6_{iw} + \mu_{iw}. \end{aligned} \quad (2)$$

For equation 2, we estimate by pooling contract offers across all three waves. For equation 1, we test balance by testing $H_0 : \beta_1 = 0$. For equation 2, we test balance by a joint test of $H_0 : \gamma_0 = \gamma_1 = \gamma_2 = \gamma_3 = \gamma_4 = \gamma_5$. We report a table of summary statistics for each variable, showing (i) the number of observations, (ii) the mean, (iii) the standard deviation, (iv) the first quartile, (v) the median, (vi) the third quartile, (vii) the minimum, (viii) the maximum, (ix) the p -value for testing on equation 1 and (x) the p -value for testing equation 2.

If, for a given variable, we do not reject H_0 at the 90% confidence level, we conclude that this variable is ‘balanced across treatments’. If we *do* reject at the 90% confidence level for a given variable, we conclude that this variable is ‘unbalanced across treatments’. We will then include that variable as a control, in the robustness analysis. Note that this is a very conservative balance strategy, because we are running each balance test separately, and without correcting for multiple inference. We anticipate rejecting balance at the 90% confidence level on approximately 10% of variables; this should not then be interpreted as evidence of a failure of the experimental protocol.

Tables 1 and 2 describe the sample of women who participated in the first contract meeting and made a decision on an offered contract. The sample ranges in age from 20 to 65, with a median age of 36. 80% of our participants are married, and only 60% are literate (that is, can read or write). 70% of the respondents run a business (independent of household members). The median number of businesses per household is 1.

Table 1: Description of sample

	N	Mean	S.Dev.	1st Q.	Median	3rd Q.	Min.	Max.	Balance (p-values)
Age (years)	293	38.0	10.4	30.0	36.0	45.0	20.0	65.0	0.2
Dummy: Respondent was ever married	293	0.9	0.3	1.0	1.0	1.0	0.0	1.0	0.2
Dummy: Respondent is currently married	293	0.8	0.4	1.0	1.0	1.0	0.0	1.0	0.9
Number or years of education	293	4.7	4.7	0.0	5.0	8.0	0.0	16.0	0.0**
Dummy: Respondent can read and write	293	0.6	0.5	0.0	1.0	1.0	0.0	1.0	0.3
Number of children the respondent has	272	3.7	2.2	2.0	3.0	5.0	0.0	12.0	0.2
Total number of people in the household	293	5.9	2.2	4.0	6.0	7.0	1.0	13.0	0.9
Dummy: Respondent is the household head	293	0.1	0.3	0.0	0.0	0.0	0.0	1.0	0.5
Dummy: respondent runs a business	293	0.7	0.5	0.0	1.0	1.0	0.0	1.0	0.3
Number of businesses owned by respondent/household's	202	1.4	0.7	1.0	1.0	2.0	1.0	5.0	0.2
Value of assets invested in business (PKR)	202	17596.3	47973.0	3000.0	8000.0	20000.0	0.0	500000.0	0.8
Value of working capital for business (PKR)	202	845.5	1425.6	150.0	300.0	1000.0	0.0	10000.0	0.0**
Share of business owned	11	1.0	0.0	1.0	1.0	1.0	0.8	1.0	0.8
Value of total capital invested in business (PKR)	202	18441.8	47983.1	4200.0	9050.0	20500.0	100.0	500500.0	0.8
Dummy: Written accounts kept for business	293	0.1	0.3	0.0	0.0	0.0	0.0	1.0	0.2
Dummy: services of accountant used for business	293	0.1	0.2	0.0	0.0	0.0	0.0	1.0	0.5
Total monthly sales from the business (PKR)	202	15894.8	19110.7	5000.0	9250.0	20000.0	0.0	120000.0	0.5
Total monthly expense of the business (PKR)	202	10789.7	14072.3	3500.0	6000.0	12000.0	0.0	108000.0	0.2
Total monthly profits(1) of the business (PKR)	202	5105.1	8495.4	1000.0	3450.0	6940.0	-11000.0	71000.0	0.4
Total monthly profits(2) of the business (PKR)	202	6531.2	8409.5	2000.0	4200.0	8000.0	-5500.0	67000.0	0.6
Dummy: Respondent participates in a committee	170	1.4	0.5	1.0	1.0	2.0	1.0	2.0	0.2
Total amount owed by respondent (PKR)	293	21195.6	33589.5	5000.0	13000.0	22500.0	0.0	314500.0	0.5
Total outstanding loans of respondent	293	0.6	0.9	0.0	0.0	1.0	0.0	4.0	0.7
Value of household assets purchased in last 5 months (PKR)	293	10507.8	62281.9	0.0	0.0	900.0	0.0	900000.0	0.3
Total household consumption in the last month (PKR)	279	25205.7	14069.6	16366.7	21800.0	30200.0	7466.7	119666.7	0.4

This table describes the key covariates for our sample, recorded at baseline. The p-values for randomisation balance were generated by regressing each covariate on dummy variables for the contractual terms offered (in a saturated specification), and running a joint test that all parameters other than the intercept are zero. Significance: * ⇔ p < 0.1, ** ⇔ p < 0.05, *** ⇔ p < 0.01.

Table 2: Description of sample (cont)

	N	Mean	S.Dev.	1st Q.	Median	3rd Q.	Min.	Max.	Balance (p-values)
Number of different assets owned by household	293	7.2	4.3	5.0	6.0	9.0	0.0	36.0	0.4
Total value of assets owned by household (PKR)	293	53909.5	99994.4	7800.0	27900.0	58300.0	0.0	943500.0	0.2
Number of different assets owned by respondent	293	31146.8	80058.6	1000.0	7200.0	30600.0	0.0	943500.0	0.4
Dummy: Respondent finds it hard to save	293	0.6	0.5	0.0	1.0	1.0	0.0	1.0	0.7
Measure of time preference (near)	293	0.1	0.1	0.0	0.1	0.2	0.0	0.5	0.9
Measure of time preference (far)	293	0.1	0.1	0.0	0.1	0.2	0.0	0.5	1.0
Measure of risk aversion	162	0.6	0.4	0.2	0.6	1.2	0.0	1.3	0.0***
An index of altruism	293	-0.1	0.6	-0.1	-0.1	-0.1	-0.9	2.1	0.9
An index of positive reciprocity	293	0.1	0.5	-0.0	-0.0	-0.0	-3.1	0.9	0.0**
Dummy: Family members are supportive of business	293	0.5	0.5	0.0	1.0	1.0	0.0	1.0	0.0**
Dummy: Spouse is supportive of business	293	0.6	0.5	0.0	1.0	1.0	0.0	1.0	0.0**
Index of respondent's opinions taken into consideration	293	-0.0	0.8	-0.5	0.2	0.7	-1.5	0.8	0.3
Dummy: Respondent faces pressure to share cash on hand	293	0.6	0.5	0.0	1.0	1.0	0.0	1.0	0.1*
Index of respondent needing permission for making decisions	293	0.1	0.8	-0.3	0.2	0.9	-1.4	0.9	0.3
Dummy: Respondent owns the household home	293	0.1	0.3	0.0	0.0	0.0	0.0	1.0	0.4
Dummy: Respondent's husband owns the household home	293	0.4	0.5	0.0	0.0	1.0	0.0	1.0	0.5
Dummy: Respondent and husband jointly own the household home	293	0.0	0.1	0.0	0.0	0.0	0.0	1.0	0.7

This table describes the key covariates for our sample, recorded at baseline. The p-values for randomisation balance were generated by regressing each covariate on dummy variables for the contractual terms offered (in a saturated specification), and running a joint test that all parameters other than the intercept are zero. Significance: * $\Leftrightarrow p < 0.1$, ** $\Leftrightarrow p < 0.05$, *** $\Leftrightarrow p < 0.01$.

Table 1 and 2 provide summary statistics for all the covariates specified in Appendix 1. For each respondent characteristic, they also show the p -value for a test of balance in randomisation.² This shows that seven of the 42 variables are mismatched at the 90% confidence level: the number of years education; the total working capital in the business; measures of risk aversion and positive reciprocity; attitude of the family and spouse towards the respondent's business; and whether the respondent faces pressure to share cash at hand. As a robustness check, we re-run our main estimations to control for these variables, but doing so does not affect our main results (*estimations available on request*).

5 Analysis: Determinants of take-up

We plan to address three primary research questions on the determinants of take-up:

Question 1 *How does take-up vary with interest rate?*

We estimate the following two equations to test for sensitivity to interest rates:

$$a_{iw} = \beta_0 + \beta_{neg} \cdot rneg_{iw} + \beta_{pos} \cdot rpos_{iw} + \varepsilon_{iw} \quad (3)$$

where zero interest rate is the omitted category.

Question 2 *How does take-up vary with the week in which the NRSP payment is received?*

We estimate the following two equations:

$$a_{iw} = \beta_0 + \beta_p \cdot p6_{iw} + \varepsilon_{iw} \quad (4)$$

making week 1 the omitted category.

² This is generated by estimating equation 2, treating each covariate in turn as an outcome variable, and running a joint test that all parameters other than the intercept are zero.

Question 3 *How does take-up vary with the joint effect of the interest rate and the day of NRSP payment?*

We jointly test for difference in product take up by both interest rate and bank payment day using the following ‘saturated’ specification:

$$a_{iw} = \beta_0 + \beta_1 \cdot rneg_{iw} + \beta_2 \cdot rpos_{iw} + \beta_3 p6_{iw} + \beta_4 \cdot rneg_{iw} \times p6_{iw} + \beta_5 \cdot rpos_{iw} \times p6_{iw} + \varepsilon_{iw} \quad (5)$$

where the omitted category are individuals offered a zero interest rate with payment in week 1.

Table 3 shows the results. We observe a significant response to the interest rate: relative to a zero interest rate, we find a significant negative effect of a negative interest rate, and a significant positive effect of a positive interest rate (column 1). Similarly, we find a significant and negative effect of receiving payment in week 6 relative to receiving payment in week 1 (column 2). Column 3 shows the saturated specification: the coefficients on day of payment and interest rate show small changes from columns 1 and 2, and the interaction effect of a negative interest rate with payment in week 6 is positive and significant.

< Table 3 here. >

Question 4 *How does take-up vary with time?*

We answer this question in three ways. First, we estimate whether the average take-up changes over time:

$$a_{iw} = \beta_0 + \beta_w \cdot w + \varepsilon_{iw} \quad (6)$$

Second, we estimate equation 5 separately for each experiment wave, $w \in \{1, 2, 3\}$. We use Seemingly Unrelated Estimation, and will run a joint test for parameter stability across periods.

Third, we estimate the effect of accepting in wave $(w - 1)$ on the probability of accepting in wave w . To do this, we instrument acceptance in wave $(w - 1)$ by the contractual terms offered in that period (where $w \in \{2, 3\}$, and $\mathbf{1}$ denotes the indicator function):

$$a_{iw} = \beta_0 + \beta_1 \cdot a_{i,w-1} + \beta_2 \cdot \mathbf{1}(w = 3) + \varepsilon_{iw} \quad (7)$$

$$\begin{aligned} a_{i,w-1} = & \gamma_0 + \gamma_1 \cdot rneg_{i,w-1} + \gamma_2 \cdot rpos_{i,w-1} + \gamma_3 \cdot p6_{i,w-1} \\ & + \gamma_4 \cdot rneg_{i,w-1} \times p6_{i,w-1} + \gamma_5 \cdot rpos_{i,w-1} \times p6_{i,w-1} + \gamma_6 \cdot \mathbf{1}(w = 3) + \mu_{i,w-1} \end{aligned} \quad (8)$$

Table 4 first tests the effect of experiment wave on product take-up (column (1)). The table then estimates the ‘saturated’ specification separately for each experiment wave (columns (2), (3) and (4)), and reports p -values for parameter equality across waves. The results show a large and highly significant general decline in willingness to adopt (that is, the intercept term is significantly smaller in the second and third experiment waves); this is in addition to a significant decrease in the sensitivity to negative interest rates and an increase in sensitivity to a positive interest rate. The combined effect of interest and payment week is no longer significant in the later waves.

< Table 4 here. >

For completeness, we also show the reduced form estimation of the effect of previous contractual terms on current behavior. Past terms may affect current demand through changes in wealth and consumption. Table 5, column (1) provides the reduced form. Past interest rates significantly effect demand in the current period. Lagged negative interest rates decrease demand in the next period by about 16 percentage points. Payment in week 6 in the past also decreases demand by 15 percentage points. When we

instrument acceptance in wave ($w - 1$) by the contractual terms offered in that period, we find that past acceptance has a significant and large effect on acceptance in the current wave, that is, respondents who accepted in the last wave 40% are more likely to accept the product in the current wave.

< Table 5 here. >

6 Analysis: Effects of treatment on firm outcomes

6.1 Identification strategy

We plan to address three primary research questions on the effects of the product:

Question 5 (ITT) *What is the impact of being offered the product?*

Denote y_{i1} as the endline value for individual i for some variable; denote y_{i0} as the baseline value. Denote ϕ_s as a common parameter for strata s . Then, for each variable in the previous table, we will estimate the following ANCOVA specification with strata dummies (denoted by the dummy variables `strataD*`):

$$y_{i1} = \beta_0 + \beta_1 \cdot m_i + \beta_2 \cdot y_{i0} + \phi_s + \varepsilon_i \quad (9)$$

Tables 6 to 11 show the impact of accepting the product, by the outcome families outlined in Appendix A³. The results show a large and significant general increase of approximately PKR 1200 in monthly net profits of the family business if the product is offered (see Table 7). Individuals who were offered the product are approximately 6% less likely to find it hard to save (Table 10). Finally, respondents offered the product are almost 10% less likely to find their opinions taken into consideration when household decions are being made (Table 11).

< Table 6 here. >

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³ There are 4 variables that were not asked at the time of the baseline survey - *trust*, *empowerment_3*; *agency_1*; *agency_2* and so these are not included in the outcome effect results shown here

< Table 10 here. >

< Table 11 here. >

To estimate the impact of accepting the product, we will instrument adoption by treatment and answer the following question.

Question 6 (LATE) *What is the impact of accepting the product?*

Denote `EverAdopted` as a dummy for whether individual i ever accepted a product.

Denote `AdoptionCount` as the number of times (0, 1, 2 or 3) that individual i accepted. Then we will estimate:

$$y_{i1} = \beta_0 + \beta_1 \cdot \text{EverAdopted}_i + \beta_2 \cdot y_{i0} + \phi_{1s} + \varepsilon_i \quad (10)$$

$$\text{EverAdopted}_i = \gamma_0 + \gamma_1 \cdot m_i + \gamma_2 \cdot y_{i0} + \phi_{2s} + \mu_i \quad (11)$$

and

$$y_{i1} = \beta_0 + \beta_1 \cdot \text{AdoptionCount}_i + \beta_2 \cdot y_{i0} + \phi_{1s} + \varepsilon_i \quad (12)$$

$$\text{AdoptionCount}_i = \gamma_0 + \gamma_1 \cdot m_i + \gamma_2 \cdot y_{i0} + \phi_{2s} + \mu_i \quad (13)$$

The results shown above for effect of treatment on firm outcomes are remarkably consistent when we instrument treatment by adoption. Table 12 to table 23 show the results by outcome family⁴. Once again, we see larger and significant general increase in net profits of the family business if the product is offered in willingness to adopt (see Table 13 and Table 19). Individuals who were offered the product are approximately 10-17% less likely to find it hard to save (Table 16 and Table 22). Finally, respondents offered the product are almost 18-32% less likely to find their opinions taken into consideration when household decions are being made (Tables 17 and 23). We see an

⁴ There are 4 variables that were not asked at the time of the baseline survey - *trust*, *empowerment_3*; *agency_1*; *agency_2* and so these are not included in the outcome effect results shown here

increase in the size of this impact when we employ instruments for treatment.

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7 Attrition and Breach of protocol

Attrition: We do not experience high levels of attrition since we used monetary incentives for participation (namely, a participation fee of 1000 Pakistani rupees),⁵.

⁵ This is divided as 500 rupees for completing the endline survey and 500 rupees for participating in all three waves of the experiment.

A total of 35 individuals drop out after the first wave, 26 after the second and 1 after the third wave of the product. Of these 62 individuals, 15 had defaulted on making repayments at some time. Two-thirds of these defaulters report that they did not have access to regular flows of money to make payments. Of the individuals who dropped out for reasons other than default the following reasons were most frequently recorded: 7 respondents reported that they will not have access to regular flows of money to meet the repayment schedule; 5 respondents said that they were no longer interested in the product; 6 respondents cite opposition from the family and 7 respondents had shifted or were not available to meet.

We check for the consistency of our results by running the above regressions separately for each round, with only participants of that round as a sample. We then test for the stability of treatment effects using Seemingly Unrelated Estimations. This allows us to see if the attrition is selective and correlative with the willingness to participate in the products offered. We find that the signs of the coefficients in the equations of interest above remain stable after this robustness check but the size of the coefficients change. Specifically, the Seemingly Unrelated Estimations show significant differences in the size of the effects in equations for 3 and 4 (*estimations available upon request*).

Breach of protocol: We are not aware of any cases of breach of experimental protocol. If we become aware of any serious breaches of protocol, we will omit the relevant observations from our analysis.

8 Conclusions

In this study, we ran an experiment of a novel microfinance product, inspired by the rotating structure of a ROSCA. We find that the take-up of the product is significantly affected by the interest rate and week on which payment is made. We also see that individuals who accept the product one wave, are more likely to accept the product in

the next wave. We find limited effects of the product on firm outcomes but we do find that net profits of the enterprise owned by respondents increase. We also find that individuals who were offered and/or accepted the products face less difficulty in saving.

In a more detailed analysis in the future, we will explore heterogeneity in these results by respondent characteristics. Specifically, we will explore heterogeneity by whether individual *i* ran a business (*business_1*); whether individual *i*'s spouse is supportive of her business (*business_27*); a combined index of the variables used to create empowerment indices outlined in the pre analysis plan (*empowerment_1*, *empowerment_2* and *empowerment_3*); whether individual *i* faces pressure to share cash on hand (*doing_1*); whether individual *i* finds it hard to save (*doing_2*); time preference (*time_preference*); risk preference (*risk*); and literacy (*literate*). In each case, we will test heterogeneity in (i) adoption and (ii) the impact of ever accepting the product.

Table 3: **Determinants of take-up: Interest rate and week of payment**

	(1)	(2)	(3)
<i>Dependent variable: Whether the respondent accepted the offer</i>			
Dummy: Negative interest	-0.186 (0.035)***		-0.249 (0.058)***
Dummy: Positive interest	0.194 (0.047)***		0.204 (0.063)***
Dummy: Payment week is 6		-0.255 (0.042)***	-0.262 (0.054)***
Dummy: Negative interest and payment week is 6			0.153 (0.065)**
Dummy: Positive interest and payment week is 6			-0.045 (0.067)
Constant	0.273 (0.036)***	0.406 (0.046)***	0.392 (0.053)***
Obs.	789.000	789.000	789.000
R ²	0.115	0.078	0.188

Parentheses show standard errors, which allow for clustering by microfinance group.

*Significance: * $\Leftrightarrow p < 0.1$, ** $\Leftrightarrow p < 0.05$, *** $\Leftrightarrow p < 0.01$.*

Table 4: **Determinants of take-up: heterogeneity by experiment wave**

	(1) All Waves	(2) Wave 1	(3) Wave 2	(4) Wave 3	Equality (<i>p</i> -value)
<i>Dependent variable: Whether the respondent accepted the offer</i>					
Experiment wave	0.042 (0.014)***				
Dummy: Negative interest		-0.379 (0.079)***	-0.197 (0.081)**	-0.148 (0.102)	0.182
Dummy: Positive interest		0.020 (0.079)	0.294 (0.068)***	0.318 (0.088)***	0.039**
Dummy: Payment week is 6		-0.401 (0.079)***	-0.318 (0.079)***	-0.034 (0.096)	0.464
Dummy: Negative interest and payment week is 6		0.306 (0.115)***	0.222 (0.114)*	-0.110 (0.145)	0.600
Dummy: Positive interest and payment week is 6		0.087 (0.116)	-0.245 (0.105)**	-0.004 (0.134)	0.045**
Constant	0.208 (0.038)***	0.519 (0.055)***	0.318 (0.053)***	0.320 (0.062)***	0.049**
Obs.	789.000	291.000	262.000	236.000	
<i>R</i> ²	0.006	0.197	0.327	0.203	

Parentheses show standard errors, which allow for clustering by microfinance group.

*Significance: * ⇔ $p < 0.1$, ** ⇔ $p < 0.05$, *** ⇔ $p < 0.01$.*

Table 5: **Determinants of take-up: heterogeneity by past contractual terms**

	(1)	(2)
<i>Dependent variable: Whether the respondent accepted the offer</i>		
Lag: Dummy – Negative interest	-0.160** (0.075)	
Lag: Dummy – Positive interest	0.089 (0.085)	
Lag: Dummy – Payment week is 6	-0.148* (0.077)	
Lag: Dummy – Negative interest and payment week is 6	0.135*** (0.101)	
Lag: Dummy – Positive interest and payment week is 6	-0.033 (0.125)	
Lag: Dummy – Experiment wave 3		0.134*** (0.036)
Lag: Acceptance		0.401*** (0.075)
Constant	0.368*** (0.052)	0.665*** (0.0510)
Obs.	492	492
R^2	0.049	0.250

Parentheses show standard errors, which allow for clustering by microfinance group.

*Significance: * $\Leftrightarrow p < 0.1$, ** $\Leftrightarrow p < 0.05$, *** $\Leftrightarrow p < 0.01$.*

Table 6: Effects of being offered the product on firm outcomes: Output family 1

	(1)	(2)	(3)	(4)	(5)	(6)
m	0.016 (0.021)	0.007 (0.061)	490.203 (1200.342)	111.303 (85.050)	-0.093 (0.000)***	530.775 (1208.055)
business_1_pre	0.616 (0.115)***					
business_2_pre		0.125 (0.047)***				
business_6_pre			0.664 (0.107)***			
business_7_pre				0.503 (0.106)***		
business_share_pre					5.141 (0.000)***	
business_totalcapital_pre						0.671 (0.109)***
Obs.	789.000	484.000	435.000	435.000	11.000	435.000
R ²	0.051	0.015	0.685	0.217	1.000	0.684

Parentheses show standard errors, which allow for clustering by microfinance group.

*Significance: * $\Leftrightarrow p < 0.1$, ** $\Leftrightarrow p < 0.05$, *** $\Leftrightarrow p < 0.01$.*

Table 7: Effects of being offered the product on firm outcomes: Output family 2

	(1)	(2)	(3)	(4)	(5)	(6)
m	-0.003 (0.020)	0.015 (0.011)	1379.513 (950.377)	404.264 (825.022)	1206.341 (624.995)*	304.936 (776.317)
business_11_pre	0.265 (0.045)***					
business_12_pre		0.032 (0.024)				
business_13_pre			0.397 (0.104)***			
business_15_pre				0.489 (0.118)***		
business_netprofit1_pre					0.154 (0.070)**	
business_netprofit2_pre						0.033 (0.124)
Obs.	789.000	789.000	435.000	435.000	435.000	434.000
R ²	0.053	0.004	0.122	0.175	0.024	0.001

Parentheses show standard errors, which allow for clustering by microfinance group.

Significance: * $\Leftrightarrow p < 0.1$, ** $\Leftrightarrow p < 0.05$, *** $\Leftrightarrow p < 0.01$.

Table 8: Effects of being offered the product on firm outcomes: Output family 3

	(1)	(2)	(3)
m	0.022 (0.056)	1243.251 (1155.722)	0.021 (0.053)
assets_5_pre	0.283 (0.059)***		
asset_totalowed_pre		0.179 (0.059)***	
asset_loancount_pre			0.192 (0.042)***
Obs.	316.000	789.000	788.000
R ²	0.094	0.089	0.034

Parentheses show standard errors, which allow for clustering by microfinance group.

*Significance: * $\Leftrightarrow p < 0.1$, ** $\Leftrightarrow p < 0.05$, *** $\Leftrightarrow p < 0.01$.*

Table 9: Effects of being offered the product on firm outcomes: Output family 4

	(1)	(2)	(3)	(4)	(5)
m	815.005 (1204.568)	1011.367 (941.982)	-0.157 (0.222)	1694.871 (6371.774)	4219.401 (2853.976)
assets_purchased_pre	-0.001 (0.008)				
consumption_total_pre		0.304 (0.038)***			
household_asset_count_pre			0.460 (0.052)***		
household_asset_value_pre				0.490 (0.063)***	
individual_asset_value_pre					0.149 (0.061)**
Obs.	763.000	716.000	763.000	763.000	763.000
R ²	0.001	0.110	0.193	0.178	0.040

Parentheses show standard errors, which allow for clustering by microfinance group.

Significance: * $\Leftrightarrow p < 0.1$, ** $\Leftrightarrow p < 0.05$, *** $\Leftrightarrow p < 0.01$.

Table 10: Effects of being offered the product on firm outcomes: Output family 5

	(1)	(2)	(3)	(4)	(5)	(6)
m	-0.055 (0.022)**	-0.004 (0.010)	0.009 (0.011)	0.139 (0.079)*	0.013 (0.030)	-0.026 (0.036)
doing_2_pre	-0.065 (0.028)**					
time_preference_t_pre		0.088 (0.052)*				
time_preference_m_pre			0.054 (0.040)			
risk_pre				0.129 (0.079)		
altruism_pre					0.079 (0.033)**	
posrec_pre						0.025 (0.052)
Obs.	789.000	789.000	789.000	227.000	789.000	789.000
R ²	0.012	0.005	0.003	0.041	0.006	0.001

Parentheses show standard errors, which allow for clustering by microfinance group.

*Significance: * $\Leftrightarrow p < 0.1$, ** $\Leftrightarrow p < 0.05$, *** $\Leftrightarrow p < 0.01$.*

Table 11: Effects of being offered the product on firm outcomes: Output family 6

	(1)	(2)	(3)	(4)	(5)
m	0.003 (0.026)	-0.011 (0.024)	0.030 (0.029)	-0.104 (0.036)***	-0.000 (0.037)
business_26_pre	0.086 (0.036)**				
business_27_pre		0.401 (0.045)***			
doing_1_pre			0.006 (0.033)		
empowerment_2_pre				0.129 (0.036)***	
empowerment_1_pre					0.306 (0.037)***
Obs.	789.000	789.000	789.000	789.000	789.000
R ²	0.006	0.125	0.002	0.029	0.125

Parentheses show standard errors, which allow for clustering by microfinance group.

*Significance: * $\Leftrightarrow p < 0.1$, ** $\Leftrightarrow p < 0.05$, *** $\Leftrightarrow p < 0.01$.*

Table 12: Effects of accepting the product (*instrument: ever adopted*) on firm outcomes: Output family 1

	(1)	(2)	(3)	(4)	(5)	(6)
EverAdopted	0.048 (0.063)	0.018 (0.157)	1204.614 (2954.533)	273.799 (211.782)	-0.164 (0.000)***	1303.630 (2973.545)
business_1_pre	0.611 (0.115)***					
business_2_pre		0.126 (0.047)***				
business_6_pre			0.665 (0.106)***			
business_7_pre				0.506 (0.107)***		
business_share_pre					-2.740 (0.000)***	
business_totalcapital_pre						0.672 (0.109)***
Obs.	789.000	484.000	435.000	435.000	11.000	435.000
R ²	0.055	0.014	0.685	0.213	1.000	0.683

Table 13: Effects of accepting the product (*instrument: ever adopted*) on firm outcomes: Output family 2

	(1)	(2)	(3)	(4)	(5)	(6)
EverAdopted	-0.009 (0.061)	0.048 (0.035)	3416.471 (2321.275)	994.038 (2016.059)	2963.005 (1552.400)*	756.449 (1920.559)
business_11_pre	0.265 (0.045)***					
business_12_pre		0.031 (0.023)				
business_13_pre			0.396 (0.103)***			
business_15_pre				0.486 (0.118)***		
business_netprofit1_pre					0.174 (0.076)**	
business_netprofit2_pre						0.035 (0.126)
Obs.	789.000	789.000	435.000	435.000	435.000	434.000
R ²	0.051	-0.003	0.122	0.177	0.002	0.000

Table 14: Effects of accepting the product (*instrument: ever adopted*) on firm outcomes: Output family 3

	(1)	(2)	(3)
EverAdopted	0.054 (0.134)	3843.615 (3574.918)	0.065 (0.164)
assets_5_pre	0.283 (0.059)***		
asset_totalowed_pre		0.178 (0.060)***	
asset_loancount_pre			0.190 (0.042)***
Obs.	316.000	789.000	788.000
R^2	0.102	0.090	0.032

Table 15: Effects of accepting the product (*instrument: ever adopted*) on firm outcomes: Output family 4

	(1)	(2)	(3)	(4)	(5)
EverAdopted	2449.925 (3650.615)	3039.059 (2912.896)	-0.470 (0.660)	5064.596 (18974.261)	12721.153 (8954.591)
assets_purchased_pre	-0.001 (0.009)				
consumption_total_pre		0.301 (0.038)***			
household_asset_count_pre			0.459 (0.052)***		
household_asset_value_pre				0.491 (0.062)***	
individual_asset_value_pre					0.145 (0.063)**
Obs.	763.000	716.000	763.000	763.000	763.000
R ²	0.001	0.096	0.194	0.179	0.033

Table 16: Effects of accepting the product (*instrument: ever adopted*) on firm outcomes: Output family 5

	(1)	(2)	(3)	(4)	(5)	(6)
EverAdopted	-0.171 (0.065)***	-0.011 (0.031)	0.027 (0.034)	0.401 (0.231)*	0.040 (0.093)	-0.080 (0.112)
doing_2_pre	-0.071 (0.028)**					
time_preference_t_pre		0.088 (0.052)*				
time_preference_m_pre			0.054 (0.040)			
risk_pre				0.154 (0.089)*		
altruism_pre					0.080 (0.034)**	
posrec_pre						0.023 (0.052)
Obs.	789.000	789.000	789.000	227.000	789.000	789.000
R ²	0.022	0.005	-0.002	0.070	0.004	0.003

Table 17: Effects of accepting the product (*instrument: ever adopted*) on firm outcomes: Output family 6

	(1)	(2)	(3)	(4)	(5)
EverAdopted	0.009 (0.079)	-0.034 (0.076)	0.093 (0.089)	-0.322 (0.112)***	-0.001 (0.113)
business_26_pre	0.086 (0.036)**				
business_27_pre		0.402 (0.045)***			
doing_1_pre			0.005 (0.033)		
empowerment_2_pre				0.135 (0.036)***	
empowerment_1_pre					0.306 (0.037)***
Obs.	789.000	789.000	789.000	789.000	789.000
R ²	0.007	0.122	-0.011	-0.015	0.125

Table 18: Effects of accepting the product (*instrument: number of time adopted* on firm outcomes: Output family 1

	(1)	(2)	(3)	(4)	(5)	(6)
AdoptionCount	0.027 (0.035)	0.010 (0.085)	643.521 (1579.660)	145.250 (112.124)	-0.164 (0.000)***	696.370 (1589.720)
business_1_pre	0.610 (0.115)***					
business_2_pre		0.126 (0.047)***				
business_6_pre			0.665 (0.106)***			
business_7_pre				0.509 (0.107)***		
business_share_pre					-2.740 (0.000)***	
business_totalcapital_pre						0.671 (0.109)***
Obs.	789.000	484.000	435.000	435.000	11.000	435.000
R ²	0.056	0.015	0.685	0.215	1.000	0.683

Table 19: Effects of accepting the product (*instrument: number of time adopted* on firm outcomes: Output family 2

	(1)	(2)	(3)	(4)	(5)	(6)
AdoptionCount	-0.005 (0.034)	0.027 (0.019)	1825.086 (1244.095)	530.131 (1073.619)	1575.964 (839.067)*	403.976 (1026.112)
business_11_pre	0.265 (0.045)***					
business_12_pre		0.029 (0.022)				
business_13_pre			0.398 (0.103)***			
business_15_pre				0.486 (0.118)***		
business_netprofit1_pre					0.183 (0.078)**	
business_netprofit2_pre						0.036 (0.128)
Obs.	789.000	789.000	435.000	435.000	435.000	434.000
R ²	0.051	-0.001	0.124	0.179	-0.015	-0.001

Table 20: Effects of accepting the product (*instrument: number of time adopted* on firm outcomes: Output family 3

	(1)	(2)	(3)
AdoptionCount	0.030 (0.075)	2154.936 (2006.803)	0.036 (0.092)
assets_5_pre	0.282 (0.059)***		
asset_totalowed_pre		0.178 (0.059)***	
asset_loancount_pre			0.190 (0.042)***
Obs.	316.000	789.000	788.000
R^2	0.100	0.088	0.032

Table 21: Effects of accepting the product (*instrument: number of time adopted*) on firm outcomes: Output family 4

	(1)	(2)	(3)	(4)	(5)
AdoptionCount	1362.457 (2029.258)	1717.049 (1639.431)	-0.261 (0.368)	2807.784 (10507.847)	7048.858 (4951.543)
assets_purchased_pre	-0.001 (0.008)				
consumption_total_pre		0.302 (0.038)***			
household_asset_count_pre			0.459 (0.053)***		
household_asset_value_pre				0.492 (0.063)***	
individual_asset_value_pre					0.149 (0.063)**
Obs.	763.000	716.000	763.000	763.000	763.000
R ²	0.001	0.097	0.192	0.179	0.034

Table 22: Effects of accepting the product (*instrument: number of time adopted* on firm outcomes: Output family 5

	(1)	(2)	(3)	(4)	(5)	(6)
AdoptionCount	-0.096 (0.037)***	-0.006 (0.017)	0.015 (0.019)	0.215 (0.126)*	0.023 (0.052)	-0.045 (0.063)
doing_2_pre	-0.069 (0.027)**					
time_preference_t_pre		0.089 (0.052)*				
time_preference_m_pre			0.053 (0.040)			
risk_pre				0.186 (0.100)*		
altruism_pre					0.080 (0.034)**	
posrec_pre						0.022 (0.052)
Obs.	789.000	789.000	789.000	227.000	789.000	789.000
R ²	0.012	0.004	-0.001	0.048	0.004	0.004

Table 23: Effects of accepting the product (*instrument: number of time adopted*) on firm outcomes: Output family 6

	(1)	(2)	(3)	(4)	(5)
AdoptionCount	0.005 (0.044)	-0.019 (0.043)	0.052 (0.050)	-0.180 (0.064)***	-0.000 (0.063)
business_26_pre	0.086 (0.035)**				
business_27_pre		0.403 (0.045)***			
doing_1_pre			0.006 (0.033)		
empowerment_2_pre				0.127 (0.036)***	
empowerment_1_pre					0.306 (0.037)***
Obs.	789.000	789.000	789.000	789.000	789.000
R ²	0.007	0.122	-0.012	-0.026	0.125

Appendix 1: Construction of the variables

Construction of variables: Administrative data

VARIABLE	DEFINITION	SOURCE
$mohallah_i$	The <i>mohallah</i> recorded for individual i .	NRSP data
s_i	The randomisation strata code for individual i .	Research team data
m_i	A dummy variable for whether individual i was assigned to receive microfinance offers (<i>i.e.</i> treated).	Research team data
a_{iw}	A dummy variable for whether individual i accepts the contract in experiment wave w .	NRSP data
r_{iw}	The interest rate offered in period t , such that $r = 10\%$, $r = 0\%$ or $r = -10\%$.	Individual contract offers.
p_{iw}	The week payment is received by individual i in wave w , such that $p = 1$ or $p = 6$.	Individual contract offers.
$rneg_{iw}$	A dummy variable equal to 1 when the interest rate in wave w is -0.1 ; 0 otherwise.	Individual contract offers.
$rpos_{iw}$	A dummy variable equal to 1 when the interest rate in period w is 0.1 ; 0 otherwise.	Individual contract offers.
$p1_{iw}$	A dummy variable equal to 1 when payment is received in the first week of the cycle in wave w ; 0 otherwise.	Individual contract offers.
$p6_{iw}$	A dummy variable equal to 1 when payment is received in the sixth week of the cycle in wave w ; 0 otherwise.	Individual contract offers.

Construction of variables: Interview data

We will construct *outcome variables* from interview data in the following way:

VARIABLE	DEFINITION	SOURCE (QUESTION NUMBER)
OUTCOME FAMILY 1: BUSINESS OWNERSHIP		
$business_1$	A dummy variable for whether individual i runs a business.	3.1
$business_2$	A variable for the number of businesses owned by individual i or her household.	3.2
$business_6$	A variable for the total value of the assets invested in the business owned by individual i or her household.	3.6.
$business_7$	A variable for the total value of the working capital for the business owned by individual i or her household.	3.7.
$business_share$	A variable for the capital share invested in the business jointly owned by individual i or her household	Ratio of 3.9 and (3.9 + 3.10) for those who jointly own a business as specified in 3.8.
$business_totalcapital$	A variable for the total capital invested in the businesses owned by individual i or her household.	Sum of 3.6 and 3.7.
OUTCOME FAMILY 2: BUSINESS PERFORMANCE		
$business_11$	A dummy variable for whether written accounts are kept for the business.	3.11

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<i>business_12</i>	A dummy variable for whether services of an accountant are used for the business.	3.12
<i>business_13</i>	A variable for the total monthly sales of the business.	3.13a
<i>business_15</i>	A variable for the total monthly expenses of the business.	3.15a
<i>business_netprofit1</i>	A variable for the total monthly profit of the business.	3.13a minus 3.15a
<i>business_netprofit2</i>	A variable for the total monthly profit of the business.	Sum of 3.16 and 3.18

OUTCOME FAMILY 3: FINANCE

<i>asset_5</i>	A dummy variable for whether individual <i>i</i> participates in a committee.	4.5
<i>asset_totalowed</i>	A variable for the total amount owed by individual <i>i</i> .	Sum of 4.17, 4.24, 4.33 and 4.42
<i>asset_loancount</i>	A variable for the total number of outstanding loans owed by individual <i>i</i> .	Sum of 4.16, 4.23, 4.32 and 4.41

OUTCOME FAMILY 4: HOUSEHOLD ASSETS AND CONSUMPTION

<i>assets_purchased</i>	A variable for the value of assets purchased by the household in the last 5 months.	Sum of 4.2c for cases in which $4.2d \leq 5$.
<i>consumption_total</i>	A variable for the total amount of household consumption in the last month.	Total sum of (5.1×4) , plus 5.2, plus $(5.3 / 3)$
<i>household_asset_count</i>	Number of different assets owned by the household	Sum of assets_2a1 to assets_2a16
<i>household_asset_value</i>	Total value of assets owned by the household	Sum of assets_2c1 to assets_2c16
<i>individual_asset_count</i>	Number of different assets owned by the individual	Sum of assets_2a1 to assets_2a16, interacted in each case with dummies for whether assets_2b1 to assets_2b16 are 1.
<i>individual_asset_value</i>	Total value of assets owned by the individual	Sum of assets_2c1 to assets_2c16, interacted in each case with dummies for whether assets_2b1 to assets_2b16 are 1.

OUTCOME FAMILY 5: RESPONDENT ATTITUDES

<i>doing_2</i>	A dummy variable for whether individual <i>i</i> finds it hard to save	When 6.2 is greater than 3.
<i>time_preference</i>	A measure of time preference.	Questions 6.12 to 6.23. Take the value for the first switch, subtract 5000 and divide by 5000.
<i>risk</i>	A measure of risk aversion.	Question 6.24. Take the value of the first switch; calculate the smallest CRRA parameter that would justify such a switch.
<i>altruism</i>	A index of altruism.	Constructed from from 6.25 to 6.27.
<i>posrec</i>	A index of positive reciprocity.	Constructed from 6.28 to 6.30.

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<i>trust</i>	A index of trust.	An index constructed from 6.31 to 6.38, using the inverse of covariance matrix at baseline.
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OUTCOME FAMILY 6: RELATIONSHIP WITH FAMILY MEMBERS

<i>business_26</i>	A variable for the attitude of other family members towards the business of individual <i>i</i> .	Dummy for whether 3.26 is 1 ('They are supportive.')
<i>business_27</i>	A variable for the attitude of spouse towards the business of individual <i>i</i> .	Dummy for whether 3.27 is 1 ('He is supportive.')
<i>empowerment_2</i>	A variable for whether individual <i>i</i> has her opinions taken into consideration when making decisions.	Following ?, an index created of 5.8 for which answer is ≤ 2 (dummy), using the inverse of covariance matrix at baseline.
<i>empowerment_3</i>	A variable for whether individual <i>i</i> prefers to choose by herself.	Following ?, an index created of 5.23, 5.24, 5.25 and 5.26 for which answer is 1 (dummy) using the inverse of covariance matrix at baseline
<i>doing_1</i>	A dummy variable for whether individual <i>i</i> faces pressure to share cash on hand.	When 6.1 is greater than 3.
<i>empowerment_1</i>	A variable for whether individual <i>i</i> needs to ask permission for making decisions.	Following ?, an index created of 5.7 for which answer is greater than 1 (dummy), using the inverse of covariance matrix at baseline.
<i>agency_1</i>	A variable for the preference for agency exhibited by individual <i>i</i> .	When 6.40 is greater than 3
<i>agency_2</i>	A variable for the preference for agency exhibited by individual <i>i</i> .	When 6.41 is greater than 3

If a respondent does not own a business, we will code any business-related outcome as zero (rather than as missing); in this way, we will estimate the average unconditional effect of treatment.

We will construct *control variables* from interview data in the following way:

VARIABLE	DEFINITION	SOURCE (QUESTION NUMBER)
<i>intro_11</i>	The age of individual <i>i</i> .	1.11
<i>ever_married</i>	Dummy: Whether individual <i>i</i> was ever married.	Dummy for whether 1.12 is greater than 1
<i>currently_married</i>	Dummy: Whether individual <i>i</i> is currently married.	Dummy for whether 1.12 is 2
<i>education_years</i>	Number of years of education	Constructed from 1.13
<i>literate</i>	Dummy: Individual <i>i</i> can read and write	Dummy for whether 1.14 is 1
<i>children_count</i>	Number of children the respondent has	Sum of household_4a and household_4b
<i>household_5</i>	Total number of people in the household	2.5

<i>household_head</i>	Dummy: Individual <i>i</i> is the household head	Dummy: 2.7 is 1
<i>home_ownership_self</i>	Dummy: Individual <i>i</i> owns the household home	Dummy: 4.1 is 1
<i>home_ownership_husband</i>	Dummy: Individual <i>i</i> 's husband owns the household home	Dummy: 4.1 is 2
<i>home_ownership_joint</i>	Dummy: Individual <i>i</i> owns the household home jointly with her husband	Dummy: 4.1 is 3

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