

Web materials for “The miracle of microfinance? Evidence from a
randomized evaluation”

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A Appendix 1: Variable definitions

Go to <http://www.centre-for-microfinance.org/publications/data/> to download the E11 and EL2 survey instruments (both in English and in Telugu).

A.1 Business variables

Business: The survey defined a business as follows: “Each business consists of an activity you conduct to earn money, where you are not someone’s employee. Include only those household businesses for which you are either the sole owner or for which you have the main responsibility. Include outside business for which you are the person in the household with the most responsibility.” Households who indicated that they owned a business were asked to answer a questionnaire about each business. The person in the household with the most responsibility for the business answered the questions about that business.

Female-run business: A business is classified as owned by a woman if the first person named in response to the question “Who is the owner of this business?” is female.

New business: A new business is one started in the year prior to the survey.

Old business: An old business is one started more than a year prior to the survey.

Business characteristics: All business characteristic variables reported in the paper (with the exception of industries in Table A4) are at the household level, i.e. if a household owns multiple businesses, the values for each business are summed to calculate a household-level total.

Business revenues: Respondents were asked: “For each item you sold last month, how much of the item did you sell in the last month, and how much did you get for them?” The respondent was asked to list inputs one by one. They were also asked for an estimate of the total revenues for the business. If the itemized total and the overall total did not agree, respondents were asked to go over the revenues again and make and changes, and/or change the estimate of the total revenues for the business last month.

Business inputs: Respondents were asked: “How much did you pay for inputs (excluding electricity, water, taxes) in the last day/week/month, e.g. clothes, hair, dosa batter, trash,

petrol/diesel etc.? Include both what was bought this month and what may have been bought at another time but was used this month. List all inputs and then list total amount paid for each input. Do not include what was purchased but not used (and is therefore stock), i.e. if you purchased five saris this month but sold only four, then we need to record the purchase price of four saris, not five.” The respondent could give a daily, weekly, or monthly number. All responses were then converted to monthly. The respondent was asked to list inputs one by one. They were also asked for an estimate of the total cost of inputs for the business. If the itemized total and the overall total did not agree, they were asked to go over the inputs again and make changes, and/or change the estimate of the total cost of inputs for the business last day/week/month. Respondents were asked about electricity, water, rent and informal payments. If they had not included them previously, these costs were added.

Business profits: Computed as monthly business revenues less monthly business input costs.

Employees: Respondents were asked: “How many employees does the business have? (Employees are individuals who earn a wage for working for you. Do not include household members).”

Outside activities work hours: Respondents were asked, for each working household member: “What is the nature of his/her work?” and “How much time in the previous week did he / she spend working in this job?” Outside activities work hours are calculated by summing work hours in all jobs classified as “Work for a wage,” “Casual labor” or “other” across all working household members.

Self-employment work hours: Respondents were asked, for each working household member: “What is the nature of his/her work?” and “How much time in the previous week did he / she spend working in this job?” Household self-employment hours are calculated by summing work hours in all jobs classified as “Own business / HH business / self-employed” across all working household members.

A.2 Expenditure

Expenditure information comes from the household survey, which was answered by the person “who (among the women in the 18-55 age group) knows the most about the household finances.” Respondents were asked about “expenditures that you had last month for your household (do not include business expenditures)” in categories of food (cereals, pulses, oil, spices, etc.), fuel, and 16 categories of miscellaneous goods and services. They were asked annual expenditure for school books and other educational articles (including uniforms); hospital and nursing home expenses; clothing (including festival clothes, winter clothes, etc.) and gifts; and footwear.

Per capita expenditure is total expenditure per adult equivalent. Following the conversion to adult equivalents used by Townsend (1994) for rural Andhra Pradesh and Maharashtra, the weights are: for adult males, 1.0; for adult females, 0.9; for males and females aged 13-18, 0.94, and 0.83, respectively; for children aged 7-12, 0.67, regardless of gender; for children 4-6, 0.52; for toddlers 1-3, 0.32; and for infants 0.05. Using a weighting that accounts for within-household economies of scale, or total household members (not adult equivalents) does not affect the results (available on request).

Expenditure (monthly): Sum of monthly spending on all goods where monthly spending was recorded, and 1/12 of the sum of annual spending on all goods where annual spending was recorded.

Non-durable expenditure (monthly): Total monthly expenditure minus spending on assets (see below).

“Temptation goods” (monthly): Sum of monthly spending on meals or snacks consumed outside the home; pan/betel leaves, tobacco and intoxicants; and lottery tickets/gambling.

A.3 Assets

Assets information comes from the household survey, which was answered by the person “who (among the women in the 18-55 age group) knows the most about the household finances.” Respondents were asked about 40 types of assets (TV, cell phone, clock/watch, bicycle, etc.): if the household owned any, how many; if any had been sold in the past year (for how much); if any had been bought in the past year (for how much); and if the asset was used in a household business (even if it was also used for household use).

Assets expenditure (monthly): Total of all spending in the past year on assets, divided by 12.

Business assets expenditure (monthly): Total of all spending in the past year on assets which are used in a business (even if also used for household use), divided by 12.

A.4 Multiple inference correction of index variables

For each table (which corresponds to a “family” of outcomes) we report an index (*à la* Kling et al. (2007)) of all the outcomes in the family taken together. One index is computed for EL1 and a separate index for EL2. The variables are signed such that a positive treatment effect is a “good” outcome. They are then normalized by subtracting the mean in the control group and dividing by the standard deviation in the control group. The index is the simple average of the normalized variables.

To control the FWER across the indices of dependent variables in each table, we adjust their respective p-values as follows, following Hochberg (1988) . First, we rank, in increasing order, the p-values for the coefficients of the treatment indicator in each of the regressions for the indices. We then multiply each original p-value by $(m - l + k)$, where m is the number of indices (8 for endline 1 outcomes, 7 for endline 2 outcomes¹) and k is the rank of the original p-value. If the resulting value is greater than 1, we assign an adjusted p-value of “>.999.”

References

Kling, Jeffrey R., Jeffrey B. Liebman, and Lawrence F. Katz. 2007. “Experimental Analysis of Neighborhood Effects.” *Econometrica*, 75: 83–119.

Hochberg, Yosef. 1988. “A sharper Bonferroni procedure for multiple tests of significance.” *Biometrika*, 75(4): 800–802.

¹There are only 7 indices for EL2 because Table 3C (self-employment outcomes for new EL1 businesses) does not include EL2 outcomes.

B Appendix tables

Table A1: Treatment-Control balance in fixed characteristics

	Spouse is literate (1)	Spouse works for a wage (2)	Household size (3)	Prime- aged women (18-45) (4)	Any teen (13-18) in HH (5)	Old businesses owned (6)	Own land, Hyderabad (7)	Own land, village (8)
Panel A: Endline 1								
Treatment	-0.0021 (0.0266)	-0.013 (0.0257)	-0.034 (0.0828)	-0.022 (0.0280)	0.015 (0.0157)	0.000015 (0.0301)	-0.0020 (0.00720)	0.0046 (0.0282)
Control Mean	0.54	0.23	5.65	1.46	0.45	0.38	0.06	0.20
Control Std Dev	0.50	0.42	2.15	0.82	0.50	0.67	0.24	0.40
Obs	6,139	6,229	6,862	6,862	6,862	6,762	6,830	6,819
F-stat (joint significance on treatment):	0.237							
P(F>f)	0.983							
Panel B: Endline 2								
Treatment	0.017 (0.0261)	-0.005 (0.0295)	-0.031 (0.100)	-0.015 (0.0285)	0.0066 (0.0168)	0.0082 (0.0313)	0.018 (0.0135)	0.025 (0.0316)
Control Mean	0.56	0.26	6.27	1.48	0.46	0.38	0.09	0.24
Control Std Dev	0.50	0.44	2.55	0.85	0.50	0.67	0.29	0.42
Obs	6,022	6,016	6,142	6,142	6,142	6,059	6,132	6,127
F-stat (joint significance on treatment):	0.843							
P(F>f)	0.567							

Note: The table presents the coefficient of a "treatment" dummy in a regression of each variable on treatment (with no control variables). Cluster-robust standard errors in brackets. F-statistics (and corresponding p-values) are from a joint test of significance in a regression of treatment on all eight variables in each round. Results are weighted to account for oversampling of Spandana borrowers. "Spouse" is the wife of the household head, if the head is male, or the household head if female. Household size is the total number of household members (not adult equivalents). An old business is a business started at least 1 year before the endline 1 survey. * significant at the 10% level, ** at the 5% level, *** at the 1% level.

Table A2: Endline 1 attrition**Panel A: Endline 1 attrition in treatment vs. control**

Found in endline 1, in treatment	0.724
Found in endline 1, in control	0.748
<i>p-value of difference</i>	0.332

	(1)	(2)	(3)	(4)
Panel B: Endline 1 attrition, by household characteristics (measured in census)				
Treatment	0.0243 (0.0249)	0.0173 (0.0256)		
Spandana borrower		-0.0422** (0.0197)		
Pucca house		0.0266* (0.0140)		
Months in slum		-0.000385 (0.000495)		
Woman's occupation: business		-0.0223 (0.0209)		
Woman's occupation: salaried		0.0223 (0.0201)		
Husband's occupation: business		0.00877 (0.0185)		
Husband's occupation: salaried		-0.0116 (0.0155)		
First Spandana loan date (treatment only)			-0.000297 (0.00072)	
10th pctl Spandana loan date (treatment only)				-0.000133 (0.000208)
Constant	0.252*** (0.0183)	0.257*** (0.0250)	0.781 (1.234)	2.558 (3.542)
Observations	7,341	7,291	3,831	3,431

Notes:

(1): Panel A reports the percentage of households contacted for endline 1, among those on listing sheets based on the 2007 census.

(2): Panel B presents the coefficient from regressing a dummy for "not found at endline 1" on the census characteristics shown.

(3) * significant at the 10% level, ** at the 5% level, *** at the 1% level.

Table A3: Endline 2 attrition**Panel A: Attrition in treatment vs. control**

Found in endline 2, in treatment	0.8889
Found in endline 2, in control	0.9017
<i>p-value of difference</i>	<i>0.248</i>

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(8)
	Exp per capita	Temptation goods	Durables	Festival spending	Has Spandana loans	Has any MFI loans	New businesses	Old businesses	Business profit
Panel B: Attrition, by household characteristics (endline 1)									
	0.0099*** (0.00323)	-0.0078 (0.027)	0.016 (0.011)	0.035 (0.031)	-0.034*** (0.010)	-0.028*** (0.0082)	-0.017 (0.0099)	-0.0033 (0.0066)	0.00050 (0.00054)
Constant	0.091*** (0.0070)	0.11*** (0.0063)	0.10*** (0.0058)	0.10*** (0.0062)	0.11*** (0.0059)	0.11*** (0.0064)	0.11*** (0.0057)	0.11*** (0.0058)	0.10*** (0.0054)
Obs	6,827	6,827	6,781	6,827	6,811	6,811	6,757	6,762	6,239
Panel C: Attrition and household characteristics (endline 1) in treatment vs. control									
Characteristic	-0.0052 (0.0065)	0.045 (0.053)	-0.0092 (0.023)	0.015 (0.060)	-0.0092 (0.025)	-0.043** (0.017)	0.0094 (0.020)	-0.016 (0.013)	0.00046 (0.00086)
X treatment									
Constant	0.080*** (0.010)	0.10*** (0.0079)	0.096*** (0.0071)	0.097*** (0.0072)	0.10*** (0.0064)	0.099*** (0.0069)	0.099*** (0.0068)	0.096*** (0.0064)	0.095*** (0.0063)
Obs	6,827	6,827	6,781	6,827	6,811	6,811	6,757	6,762	6,239

Notes:

(1): Panel B presents the coefficient from regressing a dummy for "attrited between endline 1 and endline 2" on the endline 1 characteristic shown.

(2): Panel C investigates whether the characteristics of the attriters are different in treatment and control. The regression controls for the main effects of the characteristic and of treatment (coefficients not reported).

(3) All monetary amounts in thousands of 2007 Rs. Household expenditures in columns 1-4 are per capita per month.

(4) * significant at the 10% level, ** at the 5% level, *** at the 1% level.

Table A4: Industries of old and new businesses (endline 1)

	Old business, treatment	Old business, control	Treatment- control difference	New business, treatment	New business, control	Treatment- control difference
	(1)	(2)	(3)	(4)	(5)	(6)
Food/agriculture	0.227	0.245	-0.016 (0.028)	0.300	0.214	0.085* (0.045)
Clothing/sewing	0.210	0.187	0.023 (0.020)	0.136	0.185	-0.050 (0.033)
Rickshaw/driving	0.103	0.104	-0.002 (0.021)	0.056	0.110	-0.054* (0.029)
Repair/construction	0.042	0.053	-0.011 (0.010)	0.016	0.035	-0.018 (0.016)
Crafts/vendor	0.020	0.030	-0.010 (0.008)	0.024	0.040	-0.019 (0.016)
Other	0.398	0.382	0.016 (0.043)	0.468	0.416	0.056 (0.056)
Nobs	1,422	1,253		250	173	

Notes:

Old (new) businesses are those started more (less) than 1 year before the survey. Cluster-robust standard errors in brackets. Results are weighted to account for oversampling of Spandana borrowers. * significant at the 10% level, ** at

Table A5: Attrition-corrected results

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
	Total exp per capita per month	Temptation goods exp per capita per month	Durables exp per capita per month	Has MFI loans	New businesses	Female-run new businesses	Business profit	Head and spouse self-employment hours	Women's empowerment index
Panel A: Endline 1									
Treated area	30.43 (40.34)	-6.85 (4.91)	21.79* (12.19)	0.076*** (0.027)	0.016** (0.0073)	0.0144*** (0.0052)	464 (385.00)	2.667* (1.475)	0.0061 (0.023)
Observations	6,827	6,827	6,781	6,811	6,757	6,762	6,239	6,827	6,862
Control mean	1419	84	116	0.18	0.053	0.026	745	25.83	-0.00133
Panel B: Endline 2									
Treated area	-46.27 (51.70)	-9.52 (6.591)	0.44 (10.00)	-0.0016 (0.0290)	0.0022 (0.0134)	-0.0051 (0.00620)	548 (372.30)	1.663 (1.585)	-0.011 (0.021)
Observations	6,142	6,142	6,140	6,142	6,142	6,142	6,090	6,142	6,142
Control mean	1914	118	156	0.33	0.093	0.047	953	25.38	-0.0029

Notes:

(1): Results shown re-weight the data using the inverse of the propensity to be observed at endline 2, so that the distribution of observable characteristics (at endline 1) among households observed at endline 2 resembles that in the entire endline 1 sample.

(2): Propensity to be observed at endline 2 is estimated as a function of total exp, temptation goods exp, durables exp, festival exp, 1(MFI borrower), MFI borrowing amt, counts of new businesses (created in the year prior to EL1) and old businesses (created more than 1 year before EL1), and business profits (set to zero for non-entrepreneurs).

(3) All monetary amounts in 2007 Rs.

(4) * significant at the 10% level, ** at the 5% level, *** at the 1% level.

Table A6: Additional business outcomes (all households)

	(1)	(2)	(3)
	Revenue	New businesses	Female-run new businesses
Panel A: Endline 1			
Treated area	927 (1183)	0.015** (0.007)	0.0143*** (0.00533)
Observations	6,608	6,757	6,757
Control mean	4,856	0.053	0.026
Panel B: Endline 2			
Treated area	266 (527)	0.00283 (0.0135)	-0.0047 (0.00622)
Observations	6,116	6,142	6,142
Control mean	5,847	0.093	0.0472

Notes:

(1): The table presents the coefficient of a "treatment" dummy in a regression of each variable on treatment (with control variables listed in the text). Cluster-robust standard errors in parentheses. Results are weighted to account for oversampling of Spandana borrowers.

(2) The outcome variables are set to zero when the household does not have a business.

(3) Business outcomes are aggregated at the household level when the households have more than one business.

(4) Observations with missing or inconsistent itemized revenues are dropped in column 1.

(5) See Appendix 1 for description of the construction of the revenue variable.

(6) All monetary amounts in 2007 Rs.

(7) A new business is one started in the year prior to the survey (equal to zero if none).

(8) * significant at the 10% level, ** at the 5% level, *** at the 1% level.