

Targeting the Poor: Evidence from a Field Experiment in Indonesia
Vivi Alatas, Abhijit Banerjee, Rema Hanna, Benjamin A. Olken, and Julia Tobias
Web Appendix

Appendix A: Checking for randomization balance

To check whether the randomization is balanced, we chose ten variables for this check prior to obtaining the data from the experiment. Specifically, we examined the following characteristics from the baseline survey: per capita expenditures, years of education of the household head, calculated PMT score, the share of households that are agricultural, and the years of education of the sub-village head. We also examined five village characteristics from the 2008 PODES, a census of villages conducted by BPS: log number of households, distance to district center in kilometers, log size of the village in hectares, the number of religious buildings per household, and the number of primary schools per household.

The results from this analysis are shown in Appendix Table 2. In Columns 1, 2, and 3, we present the mean of each variable for the sub-villages assigned to the PMT, community, and hybrid treatments, respectively. Standard deviations are listed below the means in brackets. We present the difference in means between the community and the PMT groups in Column 4, between the hybrid and the PMT in Column 5, and between the hybrid and the community in Column 6. In Columns 7 – 9, we replicate the analysis shown in Columns 4-6, but additionally control for stratum fixed effects. Robust standard errors are shown in parentheses in Columns 4 – 9. All variables are aggregated to the sub-village level; thus each regression includes 640 observations. In the final row of Table 3, we provide the p-value of a test of joint significance of the difference across each of the outcome variables.

The sub-villages appear to be generally well-balanced across the ten characteristics. Out of the sixty individual differences presented, three are statistically significant at the 5 percent

level – precisely what one would expect from random chance. All of these significant differences are in Column 9, which compares the community and hybrid methods, controlling for stratum fixed effects. Specifically, controlling for stratum fixed effects, households in community locations have less education and are less likely to be agriculturists than households in the hybrid treatment, and hybrid villages have 8 percent fewer households than community villages. Looking at the joint significance tests across all ten variables considered, without stratum fixed effects, the only jointly significant difference is between the hybrid and the community (Column 6, p-value 0.089); with stratum fixed effects (Column 9), the p-value is 0.028. All results in this paper are robust to specifications that include these additional ten control variables.

Appendix Table 1: PMT Regressions by district

District	Humbang Hasundutan	Serdang Bedagai	Pematang Siantar	Purba- lingga	Wonogiri	Demak	Kendal	Semarang	Bone	Enrekang	Tana Toraja	Makasar
Indicators												
Type of place (1=Urban 0=Others)		-0.086 (0.023)		-0.077 (0.025)	-0.068 (0.025)	-0.095 (0.020)	-0.230 (0.017)				0.112 (0.031)	
Per capita Floor			0.004 (0.001)			0.001 (0.001)		0.001 (0.000)	0.001 (0.000)	0.001 (0.001)	0.002 (0.001)	0.003 (0.001)
Type of Floor (1=Not earth 0=Others)	-0.100 (0.024)	0.113 (0.026)	0.149 (0.031)	0.118 (0.018)	0.133 (0.017)	0.111 (0.018)	0.096 (0.015)	0.169 (0.027)		-0.108 (0.021)		0.088 (0.028)
Type of Wall (1=Brick/Cement 0=Others)	0.104 (0.027)		0.053 (0.022)		0.055 (0.018)		0.033 (0.018)			0.119 (0.026)	0.059 (0.028)	0.114 (0.038)
Toilet Facility (1=Private 0=Others)	0.056 (0.015)	0.094 (0.022)	0.184 (0.034)	0.127 (0.017)	0.066 (0.019)	0.094 (0.019)	0.123 (0.015)	0.073 (0.020)	0.103 (0.017)	0.033 (0.014)	0.087 (0.019)	0.140 (0.022)
Drinking Water source (1=Clean 0=Other)	0.035 (0.014)		0.112 (0.036)	0.044 (0.017)			0.064 (0.014)	0.100 (0.019)	-0.047 (0.018)	0.100 (0.013)	0.028 (0.016)	0.117 (0.020)
Electricity (1=PLN 0=Others)		0.113 (0.033)	0.294 (0.074)	0.112 (0.034)	0.177 (0.077)	0.125 (0.043)	0.286 (0.081)	0.286 (0.123)	0.190 (0.021)	0.093 (0.021)		
Type of Roof (1=Concrete/Corrugated 0=Others)	0.078 (0.034)	0.085 (0.042)	0.108 (0.046)		-0.208 (0.021)	-0.121 (0.024)	-0.037 (0.018)	-0.075 (0.021)	0.178 (0.057)	0.093 (0.032)	0.095 (0.053)	0.122 (0.028)
Fuel for Cooking (1=Not Firewood 0=Other)	0.178 (0.033)	0.155 (0.021)	0.274 (0.019)	0.188 (0.027)	0.172 (0.038)	0.155 (0.023)	0.168 (0.018)	0.152 (0.018)	0.229 (0.030)	0.145 (0.021)	0.074 (0.036)	0.188 (0.018)
Ownership of house (1=Private 0=Others)	0.060 (0.021)			0.080 (0.042)	0.076 (0.035)		0.102 (0.022)	0.077 (0.019)				0.087 (0.021)
Having Micro Credit		0.129 (0.073)		0.098 (0.036)	0.165 (0.050)	0.209 (0.045)	0.069 (0.023)	-0.106 (0.049)		0.045 (0.022)	0.227 (0.060)	0.304 (0.111)
Household Size	-0.287 (0.018)	-0.247 (0.033)	-0.261 (0.026)	-0.314 (0.025)	-0.330 (0.021)	-0.254 (0.027)	-0.277 (0.025)	-0.378 (0.021)	-0.249 (0.017)	-0.250 (0.015)	-0.209 (0.019)	-0.293 (0.018)
Household Size Squared	0.017 (0.001)	0.012 (0.003)	0.014 (0.002)	0.019 (0.002)	0.021 (0.002)	0.014 (0.003)	0.016 (0.003)	0.026 (0.002)	0.014 (0.001)	0.015 (0.001)	0.012 (0.002)	0.016 (0.002)
Age of the head of household	0.010 (0.004)	0.013 (0.005)	0.004 (0.001)	0.012 (0.004)				0.012 (0.004)	0.009 (0.004)	0.007 (0.003)	0.004 (0.001)	0.007 (0.004)
Age of the head of household Squared	0.000 (0.000)	0.000 (0.000)		0.000 (0.000)	0.000 (0.000)	0.000 (0.000)	0.000 (0.000)	0.000 (0.000)	0.000 (0.000)	0.000 (0.000)		0.000 (0.000)
Head of household gender (1=Male 0=Female)	0.153 (0.037)	0.193 (0.073)	0.109 (0.057)	0.092 (0.026)	0.098 (0.037)	0.171 (0.049)	0.153 (0.040)		0.070 (0.024)	0.145 (0.029)	0.101 (0.038)	0.135 (0.036)
Head of household is Married	0.166 (0.083)				-0.066 (0.034)	-0.086 (0.050)						0.119 (0.068)
Head of household is Male*Married	-0.207 (0.089)	-0.141 (0.071)					-0.074 (0.038)			-0.060 (0.026)	-0.075 (0.035)	-0.230 (0.076)
Sector of HH Head is Agriculture		-0.066 (0.021)			-0.071 (0.022)				-0.080 (0.021)			-0.138 (0.058)
Sector of HH Head is Industry	0.240 (0.073)		-0.060 (0.029)	0.105 (0.020)				-0.121 (0.019)		-0.108 (0.031)	-0.101 (0.044)	-0.110 (0.036)
Sector of HH Head is Service	0.248 (0.028)			0.145 (0.021)	0.098 (0.027)	0.107 (0.020)	0.053 (0.019)			0.089 (0.026)		-0.065 (0.027)
Sector of HH Head is in Formal Sector			0.082 (0.023)			0.036 (0.019)	0.076 (0.018)	0.058 (0.018)	0.056 (0.031)	0.083 (0.031)	0.089 (0.031)	0.040 (0.020)
Sector of HH Head is in Informal Sector	0.045 (0.024)		0.045 (0.023)						0.077 (0.020)	0.051 (0.020)	0.140 (0.020)	
Education Attainment of HH Head	0.053	0.152		0.031	0.061	0.183	0.041	0.115	0.053		0.063	

is Elementary School	(0.023)	(0.040)		(0.028)	(0.025)	(0.035)	(0.018)	(0.028)	(0.019)		(0.032)	
Education Attainment of HH Head is Junior School	0.072	0.164	0.198	0.166	0.153	0.164	0.128	0.204	0.099	0.081	0.080	0.156
Education Attainment of HH Head is Senior +	(0.027)	(0.040)	(0.031)	(0.032)	(0.028)	(0.036)	(0.026)	(0.054)	(0.030)	(0.016)	(0.031)	(0.035)
Number of children 0-4	0.096	0.194	0.143	0.140	0.113	0.088	0.198	0.317	0.099	0.129	0.170	0.196
	(0.033)	(0.045)	(0.032)	(0.051)	(0.036)	(0.045)	(0.032)	(0.035)	(0.035)	(0.020)	(0.036)	(0.053)
Number of Children in Elementary School	-0.043							-0.078	-0.029	-0.044		-0.028
	(0.011)							(0.017)	(0.013)	(0.010)		(0.016)
Number of Children in Junior H.School		0.056		0.056	0.086	0.072	0.045	0.073				
Number of Children in Senior H.School	(0.022)			(0.018)	(0.020)	(0.019)	(0.017)	(0.020)				
Highest Education Attainment of HH Members is Elementary School	0.077	0.058	0.113	0.122	0.153	0.164	0.070	0.221	0.120	0.081	0.050	0.170
Highest Education Attainment of HH Members is Junior School	(0.023)	(0.017)	(0.024)	(0.024)	(0.024)	(0.024)	(0.022)	(0.015)		0.029	0.049	0.109
Highest Education Attainment of HH Members is Senior +	0.053	0.152		0.061	-0.045	0.105	0.133	0.064			0.063	0.077
Dependency Ratio	(0.023)	(0.040)		(0.025)	(0.019)	(0.028)	(0.054)	(0.026)			(0.032)	(0.031)
Distance to District	0.077	0.058	0.113	0.122	0.153	0.164	0.070	0.221	0.120	0.081	0.050	0.170
	(0.025)	(0.032)	(0.083)	(0.034)	(0.028)	(0.036)	(0.030)	(0.032)	(0.035)	(0.016)	(0.024)	(0.051)
Existence of SD	0.110	0.135	0.211	0.317	0.267	0.281	0.133	0.310	0.170	0.129	0.109	0.231
	(0.033)	(0.044)	(0.082)	(0.044)	(0.042)	(0.043)	(0.035)	(0.054)	(0.041)	(0.020)	(0.032)	(0.039)
Existence of SLTP	-0.039	-0.034	-0.027	-0.075	(0.017)				-0.034	-0.022	-0.040	-0.074
	(0.018)	(0.015)	(0.016)						(0.014)	(0.009)	(0.011)	(0.018)
Existence of Puskesmas/Pustu	-0.004	-0.025		-0.003	-0.004	-0.007					-0.004	-0.004
	(0.001)	(0.010)		(0.001)	(0.001)	(0.001)					(0.000)	(0.002)
Existence of Polindes	-0.224	0.183						-1.438			0.093	
	(0.040)	(0.102)						(0.057)			(0.041)	
Existence of Posyandu	-0.150	-0.051	-0.088	0.041					0.053			
	(0.019)	(0.028)	(0.020)	(0.017)					(0.016)			
Availability of Doctor	-0.047	-0.116	0.100	0.032							0.049	0.038
	(0.020)	(0.024)	(0.031)	(0.017)							(0.020)	(0.019)
Availability of Bidan	-0.054	-0.114		-0.048						0.029		
	(0.017)	(0.028)		(0.016)						(0.015)		
Existence of Credit Facility	-0.062	-0.081		-0.184					0.174		-0.205	
	(0.018)	(0.040)		(0.073)					(0.038)		(0.038)	
Constant					-0.050	-0.080	0.092					0.085
					(0.021)	(0.018)	(0.023)					(0.025)
Observations	0.082	0.089	-0.144	-0.065	0.072	0.093					-0.068	0.084
	(0.025)	(0.035)	(0.068)	(0.027)	(0.036)	(0.034)					(0.021)	(0.025)
R-squared	0.101	0.132	-0.280	0.137	-0.042	0.053			-0.114	0.057		-0.247
	(0.015)	(0.023)	(0.057)	(0.018)	(0.018)	(0.017)			(0.018)	(0.015)		(0.066)
			0.276	0.049			0.065		-0.090		-0.099	0.048
			(0.098)	(0.021)			(0.018)		(0.018)		(0.034)	(0.021)
		0.055						-0.072	-0.040	-0.031	-0.185	
		(0.022)						(0.018)	(0.017)	(0.014)	(0.022)	
	12.839	12.884	12.131	12.119	13.287	12.756	12.344	14.008	12.577	12.852	13.082	13.098
	(0.106)	(0.150)	(0.218)	(0.123)	(0.127)	(0.076)	(0.131)	(0.149)	(0.109)	(0.082)	(0.087)	(0.118)
	1920	2239	1824	2112	2208	2208	2208	2496	2016	1824	1920	2208
	0.606	0.284	0.486	0.457	0.436	0.363	0.471	0.516	0.474	0.556	0.478	0.583

Notes: Each column reports the result from a separate regression for that district. The dependent variable is log per capita consumption. Following standard BPS procedure, for each district, a first regression was run with all variables listed. A second regression was then run retaining only those variables that were statistically significant at the 10% level in the first regression. The results above present the results of this second regression, which were used for the PMT calculation. All variables above are statistically significant at least at the 10% level.

Appendix Table 2: Testing Balance Between Treatment Groups

	Means			Differences, No Fixed Effects			Differences, Controlling for Stratum Fixed Effects		
	PMT (1)	Community (2)	Hybrid (3)	Community - PMT (4)	Hybrid - PMT (5)	Hybrid - Community (6)	Community - PMT (7)	Hybrid - PMT (8)	Hybrid - Community (9)
Average per capita expenditure (Rp. 000s)	558.576 [245.845]	550.579 [220.237]	564.295 [337.172]	-7.997 (22.728)	5.719 (28.535)	13.716 (27.416)	-1.331 (20.661)	11.980 (25.973)	13.312 (24.913)
Average years of education of household head among survey respondents	7.360 [2.616]	7.566 [2.644]	7.087 [2.627]	0.206 (0.256)	-0.273 (0.254)	-0.4785* (0.254)	0.219 (0.204)	-0.255 (0.200)	-0.4739** (0.209)
PMT score (calculated from Baseline survey)	12.467 [0.436]	12.519 [0.414]	12.474 [0.423]	0.052 (0.041)	0.007 (0.042)	-0.045 (0.040)	0.053 (0.037)	0.011 (0.037)	-0.043 (0.037)
Pct. of households that are agricultural	45.827 [34.889]	42.887 [33.789]	48.438 [35.038]	-2.940 (3.343)	2.612 (3.391)	5.5515* (3.318)	-3.7806* (2.060)	1.264 (2.096)	5.0442** (2.027)
Years of education of RT head	8.856 [4.018]	8.860 [4.244]	8.604 [3.796]	0.003 (0.402)	-0.253 (0.379)	-0.256 (0.388)	0.033 (0.352)	-0.206 (0.336)	-0.238 (0.335)
Log number of households	3.832 [0.491]	3.895 [0.489]	3.810 [0.460]	0.063 (0.048)	-0.022 (0.046)	-0.0853* (0.046)	0.057 (0.044)	-0.028 (0.043)	-0.0846** (0.041)
Distance to kecamatan in km	0.444 [0.652]	0.416 [0.473]	0.482 [0.431]	-0.028 (0.056)	0.039 (0.054)	0.067 (0.044)	-0.029 (0.050)	0.038 (0.046)	0.0673* (0.037)
Log size of villages in hectares	3.105 [1.278]	3.271 [1.197]	3.282 [1.187]	0.166 (0.121)	0.177 (0.120)	0.011 (0.115)	0.1435* (0.075)	0.1376* (0.075)	-0.006 (0.076)
Religious building per household	0.0070 [0.0050]	0.0060 [0.0050]	0.0060 [0.0050]	-0.0004 (0.0005)	-0.0004 (0.0005)	-0.0001 (0.0005)	-0.0004 (0.0004)	-0.0005 (0.0004)	-0.0001 (0.0003)
Primary school per household	0.0030 [0.0030]	0.0030 [0.0030]	0.0030 [0.0020]	0.0001 (0.0003)	-0.0002 (0.0002)	-0.0003 (0.0002)	0.0000 (0.0002)	-0.0002 (0.0002)	-0.0003 (0.0002)
P-value from joint test				0.275	0.689	0.089	0.165	0.322	0.028

Notes: An observation is a sub-village, and therefore, there are 640 observations. Standard deviations are shown in brackets in columns (1) – (3); robust standard errors are shown in parentheses in columns (4) – (9).

Appendix Table 3: Results of Different Targeting Methods on Error Rate - Time elapsed between survey and targeting

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
		By Income Status		By Detailed Income Status				Per-capita
Sample:	Full population	Inclusion Error	Exclusion Error	Rich	Middle income	Near Poor	Very Poor	consumption of beneficiaries
Community treatment	0.088 (0.072)	0.098 (0.074)	0.042 (0.129)	0.090 (0.086)	0.102 (0.111)	0.127 (0.170)	-0.072 (0.178)	68.008 (78.501)
Hybrid treatment	0.018 (0.072)	0.074 (0.071)	-0.226* (0.125)	0.023 (0.081)	0.117 (0.108)	-0.252 (0.166)	-0.227 (0.176)	5.139 (90.750)
Time elapsed	0.000 (0.001)	-0.000 (0.001)	0.001 (0.002)	-0.001 (0.002)	-0.000 (0.002)	0.004 (0.003)	-0.002 (0.003)	0.759 (1.552)
Time elapsed x Community Treatment	-0.001 (0.002)	-0.001 (0.002)	-0.001 (0.003)	-0.001 (0.002)	-0.001 (0.003)	-0.003 (0.004)	0.002 (0.004)	-1.358 (1.852)
Time elapsed x Hybrid Treatment	0.000 (0.002)	-0.001 (0.002)	0.005 (0.003)	0.000 (0.002)	-0.001 (0.003)	0.005 (0.004)	0.005 (0.004)	-0.322 (2.049)
Observations	5595	3617	1978	1791	1826	1052	926	1687
Mean in PMT treatment	0.30	0.18	0.52	0.13	0.23	0.55	0.48	366

Notes: All regressions include stratum fixed effects. Robust standard errors are shown in parentheses, adjusted for clustering at the village level. All coefficients are interpretable relative to the PMT treatment, which is the omitted category. The mean of the dependent variable in the PMT treatment is shown in the bottom row. All specifications include stratum fixed effects. *** p<0.01, ** p<0.05, * p<0.1

Appendix Table 4: Results of Different Targeting Methods on Error Rate – Heterogeneity for Java/Non-Java

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Sample:	Full population	By Income Status		By Detailed Income Status				Per-capita consumption of beneficiaries
		Exclusion Error	Inclusion Error	Rich	Middle income	Near Poor	Very Poor	
COMMUNITY	0.038* (0.022)	0.055** (0.023)	0.017 (0.040)	0.048** (0.024)	0.066* (0.035)	0.058 (0.051)	-0.030 (0.062)	26.028 (23.419)
HYBRID	0.021 (0.021)	0.016 (0.020)	-0.001 (0.038)	0.034 (0.023)	-0.001 (0.032)	0.025 (0.051)	-0.024 (0.057)	-3.088 (22.716)
COMMUNITY × Java	-0.016 (0.033)	-0.026 (0.037)	0.012 (0.056)	-0.047 (0.043)	-0.012 (0.053)	-0.016 (0.075)	0.035 (0.080)	-26.834 (36.993)
HYBRID × Java	0.019 (0.032)	0.053 (0.036)	0.016 (0.054)	-0.032 (0.043)	0.127** (0.051)	0.010 (0.075)	0.027 (0.075)	2.673 (37.739)

Notes: All regressions include stratum fixed effects. Robust standard errors are shown in parentheses, adjusted for clustering at the village level. All coefficients are interpretable relative to the PMT treatment, which is the omitted category. The mean of the dependent variable in the PMT treatment is shown in the bottom row. All specifications include stratum fixed effects. *** p<0.01, ** p<0.05, * p<0.1

Appendix Table 5: Simulated poverty impacts after subtracting targeting costs .

Transfer Size (Rp. 000s)		Poverty line = Poor			Poverty line = Very poor		
		PMT	Community	Hybrid	PMT	Community	Hybrid
No transfer	headcount	33.86	33.86	33.86	15.64	15.64	15.64
	pov. gap	9.45	9.45	9.45	3.55	3.55	3.55
	sq. pov gap	3.73	3.73	3.73	1.21	1.21	1.21
50	headcount	33.07	32.91	33.41	15.11	14.69	14.74
	pov. gap	8.96	8.92	8.96	3.22	3.17	3.22
	sq. pov gap	3.46	3.42	3.44	1.06	1.03	1.05
100	headcount	31.73	32.11	32.19	14.17	13.78	13.89
	pov. gap	8.43	8.43	8.42	2.88	2.84	2.88
	sq. pov gap	3.18	3.14	3.15	0.93	0.89	0.90
200	headcount	29.66	30.09	30.32	12.46	12.13	12.44
	pov. gap	7.53	7.56	7.54	2.40	2.34	2.35
	sq. pov gap	2.74	2.70	2.70	0.75	0.68	0.69
500	headcount	24.24	25.24	25.53	8.86	9.19	9.25
	pov. gap	5.78	5.89	5.87	1.70	1.59	1.62
	sq. pov gap	2.03	1.99	1.98	0.54	0.45	0.46

Note that these results are very similar to the main targeting results because the differences in targeting costs are small relative to the transfers considered here. Note that the transfer sizes above are monthly transfers in Rp. 000s. Assuming that targeting is done once per year, so the one-time cost of targeting is amortized over twelve monthly transfers, the costs of targeting per beneficiary are Rp. 7,000 for PMT, Rp. 3,100 for community, and Rp. 8,000 for hybrid.

Appendix Table 6: Are elite results driven by social connections?

	(1)	(2)	(3)	(4)
		Error	On beneficiary list dummy	
Elite connectedness	-0.034 (0.021)	-0.034 (0.021)	-0.078*** (0.023)	-0.078*** (0.023)
Connectedness	0.041* (0.023)	0.041* (0.023)	0.067*** (0.022)	0.067*** (0.022)
Elite connectedness × community treatment	-0.010 (0.035)	-0.002 (0.039)	-0.064* (0.034)	-0.075** (0.037)
Elite connectedness × hybrid treatment	0.003 (0.034)	-0.004 (0.036)	-0.022 (0.034)	-0.010 (0.037)
Elite connectedness × elite treatment	-0.032 (0.031)	-0.050 (0.047)	0.040 (0.031)	0.062 (0.043)
Elite connectedness × elite treatment × hybrid		0.030 (0.064)		-0.050 (0.061)
Connectedness × community treatment	-0.002 (0.038)	-0.026 (0.043)	0.008 (0.036)	0.019 (0.041)
Connectedness × hybrid treatment	0.041 (0.037)	0.064 (0.041)	0.055 (0.035)	0.042 (0.037)
Connectedness × elite treatment	-0.000 (0.035)	0.043 (0.051)	-0.004 (0.032)	-0.029 (0.047)
Connectedness × elite treatment × hybrid treatment		-0.090 (0.071)		0.050 (0.065)
Observations	5753	5753	5756	5756

Notes: All specifications include dummies for the community, hybrid, and elite treatment main effects, as well as stratum fixed effects; columns (2) and (4) also include a dummy for elite × hybrid. Robust standard errors in parentheses, adjusted for clustering at the village level. Dependent variable in columns (1) and (2) is the mis-target dummy for the full sample, as in column (1) of Table 4. Dependent variable in columns (3) and (4) is a dummy for being a beneficiary of the program. *** p<0.01, ** p<0.05, * p<0.1

Appendix Table 7: Rank correlation matrix of alternative welfare metrics

	(1)	(2)	(3)	(4)
	Consumption (r_c)	Community survey ranks (r_e)	Sub-village head survey ranks(r_e)	Self-Assessment (r_s)
Consumption (r_c)	1.000			
Community survey ranks (r_c)	0.376	1.000		
Sub-village head survey ranks(r_e)	0.335	0.746	1.000	
Self-Assessment(r_s)	0.264	0.447	0.407	1.000

Notes: This table reports the correlation matrix between the within-village ranks of the four variables listed. All correlations are statistically significantly different from 0 at the 1% level.