Urban Networks and Targeting: Evidence from Liberia

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Online Appendix

1 Data Collection Process

We generated rich data sources on household welfare and social connections within 13 densely-populated neighborhoods in Monrovia. The study entailed five stages. First, we canvased thirteen neighborhoods in three selected communities of Monrovia. A team of surveyors from Innovations for Poverty Action (IPA) conducted a household listing of 2,656 households. We successfully completed 2,434 listing surveys (92% survey rate) in which all adult members of each household were listed through a household roster. Second, we returned to each household within a two-week period to conduct a comprehensive socio-economic baseline survey (referred to in the main text as the "census") with heads of households or their partner. We completed 2,253 household surveys. Thus, we have baseline information on socio-economic information for 85% of households in the study area. The listing and baseline surveys were conducted between February and April 2018. Third, we invited individuals from a fifteen-percent sample of households to participate in a "Targeting Survey" to assess knowledge of the welfare of households in each community as well as elicit nominations for a cash transfer program. Fourth, IPA attempted to deliver a USD$80 cash grant to 280 households. Finally, we carried out an endline survey of the targeted cash transfer beneficiaries as well as a matched-pair control household.

Appendix Table 1 displays the number of households identified in each of the 13 administrative neighborhoods ("blocks") and the proportion of households surveyed in the household listing. The size of neighborhoods ranges from 73 to 408 households (mean 204, s.d. 95.2). Survey completion rates for the baseline ranged from 78.1% to 91.2%. In eleven out of the thirteen neighborhoods, we managed to complete a baseline survey with over 80% of households. As such, we believe that the baseline data provides a near-comprehensive perspective of household-level economic conditions and social networks within the 13 neighborhoods identified for the study.

2 Welfare Measures

We consider multiple welfare measures as previous work suggests that community observability of information about their neighbors' expenditures and about their neighbors' asset ownership may differ greatly, and may

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vary by context (Alderman, 2002; Karlan and Thuysbaert, 2019). These include: per capita expenditures, proxy means test score, and self-assessed poverty score.

We discuss each in turn.

2.1 Per Capita Consumption (PCE)

Among a ten-percent sample of households, we conducted a full household expenditures module. This module mirrored the expenditure module used by the Liberian central statistical office, LISGIS, in the 2014–15 Household Income and Economic Survey (HIES).[1] We carried out the full HIES expenditure module in order to assess and calibrate a reduced-length ("simple module") household expenditure module which was conducted among 100% of households in the baseline survey.

Among the ten-percent sample, mean per capita expenditures using the full expenditures module were 244.39 Liberian Dollars (USD$2.36 in purchasing power parity (PPP)). We also implemented a reduced-form expenditure module in which we collected data on aggregate expenses across five expenditure categories: food, clothing, health, school, and energy. Using the reduced-form expenditure module, among the same ten-percent sample of households we estimate mean per capita at 230.05 Liberian Dollars (USD$2.22 PPP). The reduced-form module under estimates per capita expenditures by an average of 6 percent. The "simple module" version of per capita expenditures is correlated with the full module estimate of per capita expenditures; however, the simple module slightly over predicts per-capita expenses in poor households and underestimates expenditures in high-expenditure households. Using the simple module for the full sample, our estimate of per capita expenditures is 259.39 Liberian Dollars (USD$2.51 PPP).

2.2 Proxy Means Score (PMT)

We collected asset information for the 10-question Proxy Means Test. Our proxy means test is based on the Poverty Probability Index (PPI), see `https://www.povertyindex.org`. We worked with the research team at IPA to implement the method outlined in Kshirsagar et al. (2017) to construct a PMT specifically for urban Liberia. Using a bootstrapped elastic net to select the combination of 10 variables that are consistently found to predict whether or not a household is below the national poverty line from the 2014–15 HIES, we arrived at a PMT module that asked about ownership of a telephone, chairs, wardrobes, computer, books, source of electricity, source of lighting, source of drinking water, household size, and region of the country. The PMT score for Monrovia ranges from 10 (the base score for the region in which Monrovia is located) and 100. Households at the lower end of the scale are predicted to be poorer than those at the upper end. The median household in our sample has a PMT score of 55.

2.3 Subjective Welfare Measure

Additionally, we asked households for their subjective assessment of their wealth relative to other households in their community using a version of the Cantril Ladder method (Cantril, 1966; Deaton, 2008). We posed the following question to each household:

> *Please imagine a 5-step ladder. On the bottom, the first step stand the poorest 20% of households in Zone X, Block Y. On the highest step, the fifth, stands the richest 20% of households in Zone X, Block Y.*

[1] Survey instruments accessed from `http://microdata.worldbank.org/index.php/catalog/2563/study-description`.

Where do you think your household stands when you think of how poor or wealthy your household is compared to others in your Block?

The median household considers itself to be on the second step of the Cantril ladder; 26 percent of households consider themselves to be on the lowest step of the ladder. Only 12 percent of households consider themselves to be on the top two steps of the ladder.

3 Social Network Data

Through a social network census, we identified intra-neighborhood social ties, even if a connected household was not available for the baseline survey. Our goal was to identify current and meaningful social ties between surveyed household and other households within the community. With our full baseline sample, we elicited social network connections using the following question:

For the next questions I ask you, the answer can only be people who live in this same block with you.

They also must be older than 18. I will ask you to name the 5 people to answer my question.

Who did you spend time with the most because you wanted to spend time with them, in the last 14 days?

We asked respondents to name up to five social ties within the community. Using this method, we successfully identified a total of 7,603 social ties within the 13 study blocks. The social network data allow us to perform detailed social network analysis within each block. In addition, we are able to compute measures of social network centrality (in-degree centrality and eigenvector centrality)[2]

4 Nomination of Neighbors to Assist in Targeting

During the baseline interview, we asked each survey respondent to nominate one member of their community to assist with targeting a social assistance program. We elicited community member nominations by one of the following questions:

1. *If we want to spread information about a social assistance program, to whom do you suggest we speak?*
2. *If we want to identify which people would be best to help us identify which people in this block would benefit most from a social assistance program, to whom do you suggest we speak?*
3. *If we want to identify which people would be best to help us identify which people in this block would benefit most from a cash gift for social assistance, to whom do you suggest we speak?*

For each baseline respondent, we randomly selected one of the three questions listed above. The purpose of randomizing the elicitation questions is to quantify the extent to which nominations are influenced by the potential of a cash transfer or other social assistance. 92 percent of households provided a nomination for the targeting assistance.

[2]In-degree centrality is the number of households who named your household as a link. Eigenvector centrality is a measure of influence within the network defined as the weighted sum of connections, where each connection's weight is determined by its own eigenvector centrality (like Google page-rank).

5 Subjective Welfare Results

Appendix Figure 4 displays the relationship between an individual's self-assessed poverty status and the probability of being assessed as poor by a neighbor. Households that marked themselves in the poorest quintile were identified as poor by neighbors who knew them 34% of the time; this contrasts with 26% for households who assessed themselves to be in the median quintile and 31% for households who assessed themselves in the highest quintile. These differences are objectively modest, non-monotonic and the average number of households marked poor by neighbors who know them in the lowest quintile is not statistically significant from this average in the highest quintile (though the lowest quintile average is statistically different from the median quintile).

Additionally, we may wonder whether the self-assessment information may be used as a self-targeting measure. The final column of Appendix Table 5 addresses this. People are indeed able to target themselves more accurately than neighbors who know them can; for both the per capita expenditure and proxy means score benchmarks, individuals are significantly more likely to assess their poverty status correctly than any group of neighbors. Yet, use of this mechanism for targeting in practice may suffer from incentive-compatibility issues.

6 Cash Grants

We conducted a matched-pairs design to establish a treatment and control group for the evaluation of a cash grant. First, we organized households that were nominated in the targeting survey to receive a cash grant into 8 strata. These strata were split by the type of targeting assistant (TA) (nominated leader, randomly selected leader, nominated non-leader, randomly selected non-leader) and the type of beneficiary nomination among the nominated cash beneficiaries.[3][4]

To give all poor households a non-zero probability of receiving a cash grant, we randomly selected households in the bottom 20% of the PMT score distribution to receive the cash grant. This random selection of household comprises the ninth strata.

Within each stratum, we identified matched pairs of households. We matched households on household size, the gender of household head, years in the community, in-degree centrality, betweenness centrality, per capita expenditures, PMT score, health and economic shocks, and the percent of TAs that knew the household in the targeting survey.

Our matching algorithm produced 560 pairs. Within each pair, we randomly selected one household to receive a cash grant. Beneficiaries of the cash grant drawing were eligible to receive USD$80. One member of each selected beneficiary household was invited by phone to collect their cash grant at the IPA offices in central Monrovia. Cash grant beneficiaries were required to verify their identity (name, age, gender, phone number). Cash grants were only distributed to verified members of the urban neighborhoods included in the study. Households were eligible for a maximum of one cash grant.

In total, 269 of the targeted 280 households collected the cash grant. Of those that did not collect the cash grant, five had moved away from Monrovia or were deceased and six refused to or were unable to visit the IPA office within the allotted time (3 weeks) to collect the cash grant.

[3]Each neighbor was asked to nominate two households for a cash grant. We randomized the order of the two questions we asked. One was "Think of households within this block, which household would make the most use out of a cash grant?" The second was "Within this block, is there a household who recently fell on hard times and would benefit most from a cash grant?".

[4]We occasionally refer throughout the Appendix to the neighbors that were asked to provide poverty information and cash transfer recipient nominations as "targeting assistants" or TAs for clarity.

Our preferred method of estimating treatment effects is a differences-in-means estimand stratified by matched pairs. The difference-in-means estimator provides an unbiased estimate of the average treatment effect. With matched pairs, the average treatment effect, $\widehat{\tau}$, is simply the within-pair difference between outcomes for the treatment and control averaged over all pairs. Equation 1 lays out the calculation for the difference-in-means estimator, where J is the number of matched pairs, N is the total number of households, and $\widehat{\tau_j}$ is the estimated difference between the mean of the treatment and control household in the jth matched pair. The standard error, $\widehat{SE}(\widehat{\tau})$, is estimated using Equation 2 (Gerber and Green, 2012; Imbens and Wooldridge, 2009). We do not control for any baseline characteristics in our estimation strategy as baseline characteristics are indirectly controlled for through the matched-pairs assignment.

$$\widehat{\tau} = \sum_{j=1}^{J} \frac{2}{N} \widehat{\tau_j} \tag{1}$$

$$\widehat{SE}(\widehat{\tau}) = \frac{1}{J(J-1)} \sum_{j=1}^{J} (\widehat{\tau_j} - \widehat{\tau})^2 \tag{2}$$

Appendix Table 8 displays difference-in-means estimates for the four main outcomes of interest. For each outcome, we display the pooled difference-in-means estimates using all matched pairs. The "PMT Targeted" row of the table displays the difference-in-means estimates for the 69 matched pairs that did not receive a nomination, i.e. were randomly sampled from the poorest quintile of the proxy-means score distribution. The "Best Use" row uses the 78 matched pairs that were nominated using the "Best Use" elicitation prompt in the Targeting Assistant (TA) survey. The "Hard Times" row uses the 75 matched pairs that were nominated using the "Hard Times" elicitation prompt in the TA survey.

Panel A of Appendix Table 8 shows the effects of the cash grant on per capita expenditures. Across all sub-samples—as well as the pooled estimate—we fail to reject the null hypothesis that the cash grant had zero impact on per capita expenditures. Panel B shows that, likewise, we do not observe any statistically significant impacts on household savings.

In Panel C of Appendix Table 8, we observe that the cash grant led to a *decrease* in financial satisfaction. Financial satisfaction is a dummy variable equal to one for the 'Satisfied' and 'Very Satisfied' responses to the question, "How satisfied are you personally with the financial situation of your household?" The estimate, however, does not survive Bonferroni for the four hypotheses that we test under this outcome.

Panel D of Appendix Table 8 shows our difference-in-means estimates for whether or not a household has an active business in operation. We see that those assigned to receive a cash transfer were more likely to be operating a business (p-value = 0.08). This effect is highest among cash beneficiaries that were not nominated through the TA survey, the coefficient on the "No Nomination" group survives a Bonferroni adjustment for four hypotheses at the 0.05 significance level.

Taken together, our results do not suggest that the cash grant impacted welfare and business activities in a clear and systematic manner. Moreover, there is no evidence that leveraging nominations directed cash grants towards households that would have a higher impact.

7 Attenuation Bias and Measurement Error

In our paper, we interpret a significant but objectively low ability to predict poverty as indicating that information within the neighborhoods is far from complete. However, an alternate interpretation is that

our estimates on the relationship between actual wealth and neighbor identification as a poor household is attributable to attenuation bias. Certainly it is the case that both our PCE and PMT measurements are measured with error relative to true "poverty".

In Figure 1 (Appendix Figure 2), we sorted households into neighborhood-level percentiles of PMT (PCE) and regressed whether a household was identified as poor on the percentile of neighborhood PMT (PCE) that the household fell in. This is our best estimate that neighbors rank many households as poor regardless of where they sit in the distribution of neighborhood PMT or PCE. This transformation has a consequence, however: we can't hope that measurement error is classical and obtain unbiased estimates of the relationship between wealth and being identified as poor by instrumenting PCE with PMT since a household is mechanically at the same percentile of the instrumented PCE distribution as they are in the PMT distribution. In fact, it is unclear to us as to how exactly we should anticipate that this transformation would interact with attenuation bias from measurement error.

What we can do, however, is run a slightly different regression. In particular, we can regress being identified as poor on the level of PCE and predict the level of PCE with the level of PMT. When we then interpret the (unbiased, in the case of classical measurement error) coefficient at the 10th and 90th percentiles of the PCE distribution, we can infer whether this unbiased estimator leads to different conclusions than our estimator from the percentile transformation.

We present the results of this analysis in Appendix Table 9. First, we present the results from an OLS regression of poverty on the level of PCE, measured in Liberian Dollars (LD) in Column 1. The relationship is significant but very small; the 90th percentile of households consumes about 340 LDs in PCE more than the 10th percentile. Using the OLS estimate we would infer that neighbors rank a 90th percentile household as poor only 2 percentage points less frequently than a 10th percentile household. Column 2 presents the IV regression, where PCE is instrumented by PMT. We see that the point estimate increases by an order of magnitude; using this estimate we would infer that the 90th percentile household is 20 percentage points more likely to be identified as poor than the 10th percentile households. Since about 30 percent of households are identified as poor, this estimate suggests that the 10th percentile household is about 40% likely to be identified as poor while the 90th percentile household is about 20% likely. If we interpret the difference between these two estimators as identifying the extent of attenuation bias, we conclude that PCE is measured with a great deal of error and that attenuation bias severely impacts this specification.

However, the results from the IV estimates are strikingly similar to the results from the transformation into neighborhood percentiles presented in Figure 1. In the main paper, we identify that moving from the 10th to the 90th percentile of the PMT distribution is associated with an 18 percentage point decrease in the likelihood of being identified as poor. The PCE difference is somewhat flatter (about 11 percentage points), but still, qualitatively similar to the instrumented specification. Thus, we conclude that the best evidence we have suggests the modest ability to predict poverty emphasized in the paper is not an artifact of measurement error, perhaps because the transformation into neighborhood percentiles effectively addressed measurement error in this context.

8 Comparison to Other Settings

The low accuracy rate we observe in our sample in urban Liberia is not much lower than in other similar contexts: In the urban Indonesian sample from Alatas et al. (2012) neighbors correctly discern PCE poverty

68.1% of the time, and PMT poverty 71.5% of the time.[5] This compares to the rural Indonesian sample in which these numbers were 69.1% and 71.6%, for per capita expenditures and proxy means score respectively, with per capita expenditure accuracy being significantly greater than the urban accuracy level. However, perhaps low overall accuracy rates should be unsurprising. Breza, Chandrasekhar and Tahbaz-Salehi (2018), for instance, show that villagers in India often don't know very much about other individuals in their networks, and specifically do not well identify network links between other individuals in their village.

Additionally, as many other other studies report overall accuracy rates, as well as inclusion and exclusion errors, we present these figures for the neighbors' rankings (compared to proxy means and consumption benchmarks) and proxy means score rankings (compared to consumption benchmark), in Appendix Table 7.

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[5]Though we cannot calculate a directly comparable measure to ours since the Indonesian respondents were asked to simply rank up to 8 households from poorest to richest, we construct this measure by counting those that are the 2 poorest among the 8 households according to expenditures or proxy means score as "poor" and counting it as correct when respondents rank the "poor" as one of the poorest two household on the list, and those not "poor" as not in the bottom two poorest households on their list.

9 Online Appendix Tables

Table 1: Count of Households by Neighborhood

Neighborhood	Households	Surveyed households	Adults in Roster	Prop. surveyed
C1	150	127	361	0.847
C2	251	222	536	0.884
C3	321	253	638	0.788
L1	408	372	1118	0.912
L2	227	186	514	0.819
L3	133	109	299	0.820
L4	190	160	351	0.842
W1	303	248	678	0.818
W2	190	160	401	0.842
W3	102	89	227	0.873
W4	159	138	361	0.868
W5	73	57	166	0.781
W6	149	132	347	0.886
Total	2656	2253	5997	0.848

Table 2: Summary Statistics, by Per Capita Expenditure Quintile

	Quintile 1 N=456	Quintile 2 N=450	Quintile 3 N=450	Quintile 4 N=450	Quintile 5 N=445	p-value
Per Capita Expend. (PCE)	0.55 (0.26)	1.20 (0.37)	1.82 (0.65)	2.83 (1.16)	6.19 (4.05)	0.00
Proxy Means Score (PMT)	46.62 (13.39)	50.43 (13.45)	54.62 (12.55)	56.41 (14.61)	61.31 (14.33)	<0.01
Subjective Welfare	2.07 (1.05)	2.29 (1.13)	2.39 (1.11)	2.43 (1.12)	2.42 (1.07)	<0.01
Meals per Day	1.56 (0.64)	1.73 (0.67)	1.79 (0.69)	1.84 (0.71)	2.02 (0.71)	<0.01
Female HH Head	0.29 (0.46)	0.24 (0.43)	0.26 (0.44)	0.25 (0.43)	0.24 (0.43)	0.40
Years in Community	11.60 (11.33)	11.38 (11.61)	9.17 (10.04)	9.18 (10.46)	9.07 (10.38)	<0.01
Community Leader	0.18 (0.38)	0.17 (0.38)	0.13 (0.33)	0.11 (0.31)	0.14 (0.34)	0.01
Christian	0.71 (0.45)	0.68 (0.47)	0.68 (0.47)	0.72 (0.45)	0.76 (0.43)	0.05
Assistance: # Family	0.68 (0.99)	0.84 (1.22)	0.85 (1.11)	0.90 (1.17)	1.01 (1.35)	<0.01
Assistance: # Friends	0.56 (1.04)	0.78 (1.25)	0.72 (1.11)	0.77 (1.26)	0.82 (1.29)	0.02
Negative Wealth Shock	0.47 (0.50)	0.48 (0.50)	0.51 (0.50)	0.52 (0.50)	0.52 (0.50)	0.31
Negative Health Shock	0.29 (0.46)	0.31 (0.46)	0.32 (0.47)	0.35 (0.48)	0.34 (0.47)	0.45
In-degree Centrality	3.60 (3.29)	3.44 (3.13)	3.20 (2.97)	2.99 (2.89)	2.90 (3.04)	<0.01
Eigenvector Centrality	0.16 (0.20)	0.15 (0.19)	0.15 (0.19)	0.14 (0.17)	0.12 (0.16)	0.02
Clustering Coefficient	0.22 (0.22)	0.24 (0.25)	0.23 (0.24)	0.26 (0.27)	0.26 (0.26)	0.02
Neighbor Nominations	0.80 (2.56)	0.82 (1.92)	0.70 (1.55)	0.61 (1.60)	0.69 (1.67)	0.41

Note: Per capita expenditure is in daily purchasing power parity terms. Subjective welfare is based on a five-level scale using the Cantril ladder. Standard deviations are in parenthesis. p-value is from the test for equality of means across all quintiles. The total number of observations (summing over quintiles) is not equal to 2656 due to missing data.

Table 3: Summary Statistics, by Neighbor Type

	Pop.	Ldr.	Nom.	Ldr. vs. Nom.	Ldr. vs. Pop.	Nom. vs. Pop.
	N=2656	N=345	N=820	p-value	p-value	p-value
Per Capita Expend. (PCE)	2.51 (2.75)	2.55 (3.14)	2.34 (2.59)	0.51	0.81	0.03
Proxy Means Score (PMT)	53.9 (14.6)	56.4 (15.3)	55.3 (13.7)	0.56	<0.01	<0.01
Subjective Welfare	2.32 (1.10)	2.45 (1.14)	2.44 (1.10)	0.26	0.02	<0.01
Meals Per Day	1.79 (0.70)	1.80 (0.68)	1.81 (0.69)	0.39	0.79	0.33
Female HH Head	0.25 (0.44)	0.20 (0.40)	0.24 (0.43)	0.19	0.01	0.23
Years in Community	10.1 (10.9)	12.3 (11.5)	11.7 (11.1)	0.61	<0.01	<0.01
Community Leader	0.14 (0.35)	1.00 (0.00)	0.20 (0.40)	<0.01	<0.01	<0.01
Christian	0.71 (0.45)	0.85 (0.36)	0.75 (0.44)	<0.01	<0.01	0.01
Assistance: # Family	0.86 (1.18)	0.90 (1.24)	0.89 (1.21)	0.62	0.54	0.36
Assistance: # Friends	0.73 (1.19)	0.70 (1.24)	0.77 (1.24)	0.15	0.65	0.32
Negative Wealth Shock	0.50 (0.50)	0.57 (0.50)	0.52 (0.50)	0.46	0.01	0.17
Negative Health Shock	0.32 (0.47)	0.34 (0.47)	0.34 (0.47)	0.42	0.57	0.19
In-degree Centrality	2.84 (3.04)	4.09 (3.69)	5.23 (3.52)	<0.01	<0.01	<0.01
Eigenvector Centrality	0.12 (0.18)	0.17 (0.22)	0.19 (0.23)	<0.01	<0.01	<0.01
Clustering Coefficient	0.21 (0.25)	0.20 (0.22)	0.22 (0.20)	0.30	0.02	0.03
Neighbor Nominations	0.63 (1.78)	1.59 (3.94)	2.06 (2.71)	<0.01	<0.01	<0.01

Note: Per capita expenditure is in daily purchasing power parity terms. Subjective welfare is based on a five-level scale using the Cantril ladder. Standard deviations are in parenthesis.

Table 4: Summary Statistics, by Nomination Prompt

	Nomination Prompt			
	1 N=614	2 N=516	3 N=558	p-value
Per Capita Expend. (PCE)	2.51 (3.15)	2.55 (2.95)	2.60 (3.77)	0.90
Proxy Means Score (PMT)	56.02 (13.35)	57.20 (13.70)	55.09 (14.46)	0.05
Subjective Welfare	2.55 (1.14)	2.59 (1.14)	2.50 (1.11)	0.42
Meals Per Day	1.78 (0.69)	1.78 (0.67)	1.75 (0.69)	0.66
Female HH Head	0.23 (0.42)	0.19 (0.39)	0.23 (0.42)	0.21
Years in Community	14.04 (12.31)	13.22 (11.84)	13.34 (11.41)	0.45
Community Leader	0.33 (0.47)	0.33 (0.47)	0.31 (0.46)	0.78
Christian	0.80 (0.40)	0.77 (0.42)	0.80 (0.40)	0.32
Assistance: # Family	1.02 (1.39)	1.00 (1.39)	0.75 (1.14)	<0.01
Assistance: # Friends	0.89 (1.28)	0.76 (1.12)	0.73 (1.11)	0.08
Negative Wealth Shock	0.60 (0.49)	0.54 (0.50)	0.55 (0.50)	0.11
Negative Health Shock	0.40 (0.49)	0.36 (0.48)	0.37 (0.48)	0.37
In-degree Centrality	7.33 (4.84)	6.92 (4.50)	7.44 (4.55)	0.16
Eigenvector Centrality	0.27 (0.28)	0.24 (0.26)	0.27 (0.28)	0.19
Clustering Coefficient	0.19 (0.18)	0.19 (0.19)	0.20 (0.17)	0.92
Neighbor Nominations	5.92 (9.10)	5.39 (8.58)	5.46 (8.79)	0.53

Notes: One of three nomination prompts was randomly assigned to each baseline respondent. Neighbors can be nominated by multiple respondents, thus appear across columns 1, 2, and 3. Per capita expenditure is in daily purchasing power parity terms. Subjective welfare is based on a five-level scale using the Cantril ladder. Standard deviations are in parenthesis. p-value is from the test for equality of means across all quintiles. The total number of observations (summing over columns) does not add to 2253 due to missing data.
Nomination Prompt 1: If we want to spread information about a social assistance program, to whom do you suggest we speak?;
Nomination Prompt 2: If we want to identify which people would be best to help us identify which people in this block would benefit most from a social assistance program, to whom do you suggest we speak?;
Nomination Prompt 3: If we want to identify which people would be best to help us identify which people in this block would benefit most from a cash gift for social assistance, to whom do you suggest we speak?

Table 5: Neighbor Targeting Quality

Variable	Random	Leaders	Nom.	Highly Nom.	Poor	High % Poor Nom.	Self
% All HH Known	32.0%	41.3%	35.8%	40.3%	34.1%	35.3%	
	(1.4)	(1.8)	(1.0)	(1.8)	(1.5)	(1.5)	
% Poor HH Known (PCE)	32.0%	43.4%	36.3%	40.8%	36.6%	35.5%	
	(1.7)	(2.1)	(1.3)	(2.2)	(2.0)	(1.9)	
%Poor HH Known (PMT)	32.3%	42.4%	34.5%	40.5%	34.2%	33.4%	
	(1.7)	(2.1)	(1.2)	(2.1)	(1.8)	(1.9)	
% Rated Correctly (PCE)	60.4%	62.4%	63.8%	64.2%	64.9%	60.2%	67.6%
	(1.5)	(1.6)	(1.0)	(1.5)	(1.6)	(1.5)	(1.0)
% Rated Correctly (PMT)	60.4%	63.2%	64.5%	64.9%	65.1%	65.4%	69.5%
	(1.5)	(1.6)	(1.0)	(1.6)	(1.6)	(1.6)	(1.0)
% Transfer Nom. Poor (PCE)	28.4%	26.0%	22.5%	23.5%	26.9%	29.3%	
	(2.8)	(3.0)	(2.1)	(3.7)	(3.2)	(3.6)	
% Transfer Nom. Poor (PMT)	30.6%	32.1%	26.8%	35.3%	30.6%	30.6%	
	(2.8)	(3.2)	(2.2)	(4.1)	(3.4)	(3.7)	

Standard errors are in parenthesis. Observations are at the ranked individual (rows 1-5) or transfer nomination (rows 6-7) level.

Table 6: Neighbor Targeting Quality

Variable	All	Random	Leaders	Nom.	P-value Random v. Leader	P-value Random v. Nom.	P-value Leader v. Nom.
% HH Known	34.3%	32.0%	41.3%	35.8%	0.00	0.027	0.01
	(0.8)	(1.4)	(1.8)	(1.0)			
PCE-Poor HH Known	34.6%	32.0%	43.4%	36.6%	0.00	0.049	0.00
	(1.0)	(1.7)	(2.1)	(1.3)			
PMT-Poor HH Known	33.2%	32.3%	42.4%	34.5%	0.00	0.29	0.00
	(1.0)	(1.7)	(2.1)	(1.2)			
PCE-Rated Correctly	63.4%	60.4%	62.4%	63.8%	0.35	0.05	0.44
	(0.8)	(1.5)	(1.6)	(1.0)			
PMT-Rated Correctly	63.9%	60.4%	63.2%	64.5%	0.20	0.025	0.50
	(0.8)	(1.5)	(1.6)	(1.0)			
Trans. Nom. PCE-Poor	25.7%	28.4%	26.0%	22.5%	0.57	0.094	0.34
	(1.7)	(2.8)	(3.0)	(2.1)			
Trans. Nom. PMT-Poor	28.7%	30.6%	32.1%	26.8%	0.73	0.29	0.17
	(1.7)	(2.8)	(3.2)	(2.2)			

Note: Standard errors are in parenthesis. Observations are at the transfer nomination level. P-values of the t-test of a different of two means are presented. This Table is not directly referenced in the text, but includes p-values of discussed comparisons for the reader's reference.

Table 7: Accuracy and Errors

	Neighbors (vs. Consumption Benchmark)	Proxy Means Score (vs. Consumption Benchmark)	Neighbors (vs. Proxy Means Score Benchmark)
Accuracy	63.7%	73.6%	65.0%
Exclusion Errors	13.1%	12.6%	12.7%
Inclusion Errors	23.2%	13.8%	22.2%

Note: Accuracy is the percentage of cases that a neighbor (or proxy means score) assessed another neighbor's poverty status correctly according to the benchmark in question, where poverty is defined as being in the bottom 20% of a given measure.

Table 8: Cash Grant Treatment Effects

	$\widehat{\tau}$ ($\widehat{SE}(\widehat{\tau})$)	p-value	95% CI
Panel A: Per capita Expenditures			
Pooled	5.75 (11.09)	0.60	[-16.11, 27.60]
PMT Targeted	9.13 (19.99)	0.65	[-30.76, 49.01]
Best Use	-21.04 (17.29)	0.23	[-55.47, 13.39]
Hard Times	30.49 (20.18)	0.14	[-9.73, 70.71]
Panel B: Household Savings			
Pooled	-69.01 (60.67)	0.26	[-188.56, 50.55]
PMT Targeted	-201.07 (189.17)	0.29	[-578.56, 176.42]
Best Use	-26.11 (37.60)	0.49	[-100.97, 48.75]
Hard Times	7.88 (20.70)	0.70	[-33.36, 49.12]
Panel C: Satisfied with HH Financial Situation			
Pooled	-0.05 (0.05)	0.33	[-0.14, 0.05]
PMT Targeted	-0.19 (0.08)	0.02	[-0.35, -0.03]
Best Use	0.10 (0.08)	0.21	[-0.06, 0.26]
Hard Times	-0.07 (0.07)	0.37	[-0.21, 0.08]
Panel D: Has Active Business			
Pooled	0.08 (0.05)	0.08	[-0.01, 0.17]
PMT Targeted	0.22 (0.08)	0.01	[0.05, 0.39]
Best Use	0.09 (0.07)	0.21	[-0.05, 0.23]
Hard Times	-0.05 (0.08)	0.51	[-0.21, 0.11]

Notes: Difference-in-means estimator with matched pairs shown in the column 1. Eicker-Huber-White robust standard errors in parentheses. Degrees of freedom: Pooled = 221, PMT Targeted = 68, Best Use = 77, Hard Times = 74.

Table 9: Neighbor ranking a Block Member as Poor vs. Per Capita Expenditures

	Dependent variable:	
	Neighbor indicates Block Member is Poor (0/1)	
	(1)	(2)
	OLS	IV
Per capita Expenditures (LD)	-0.00007^{***}	-0.0006^{***}
	(0.00002)	(0.0001)
Observations	3,887	3,887
Block FE	Yes	Yes
R^2	0.047	−0.047
Adjusted R^2	0.044	−0.050
Residual Std. Error (df = 3873)	0.448	0.470

Note: Standard errors are in parenthesis, and are clustered at the block level. In column 2, per capita expenditures are instrumented with Urban PPI (PMT) Score. First stage F statistic is 146.8. Observations are at ranking neighbor by known ranked neighbor level, and the outcome variable is a binary indicator which equals one whether a ranking neighbor denotes a ranked neighbor is in the poorest 20% of the block. *p<0.1; **p<0.05; ***p<0.01

10 Figures

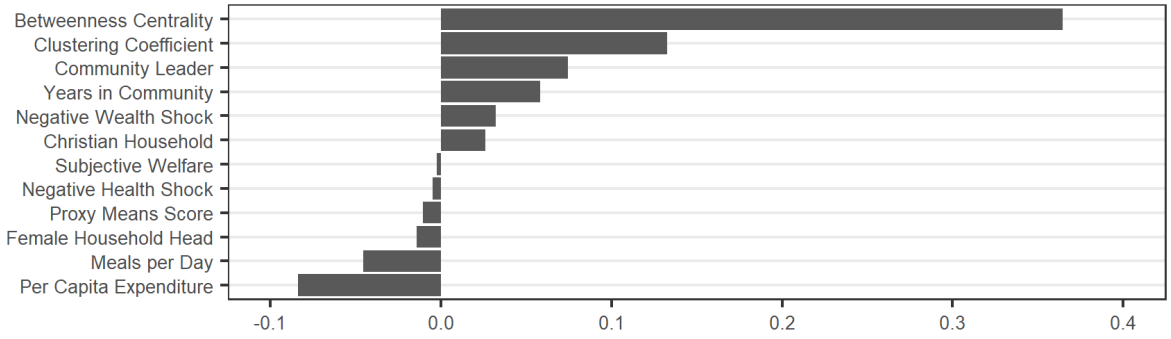

Figure 1: Correlation between social network and welfare measures: X-axis displays the correlation coefficient between eigenvector centrality and the measure on the Y-axis.

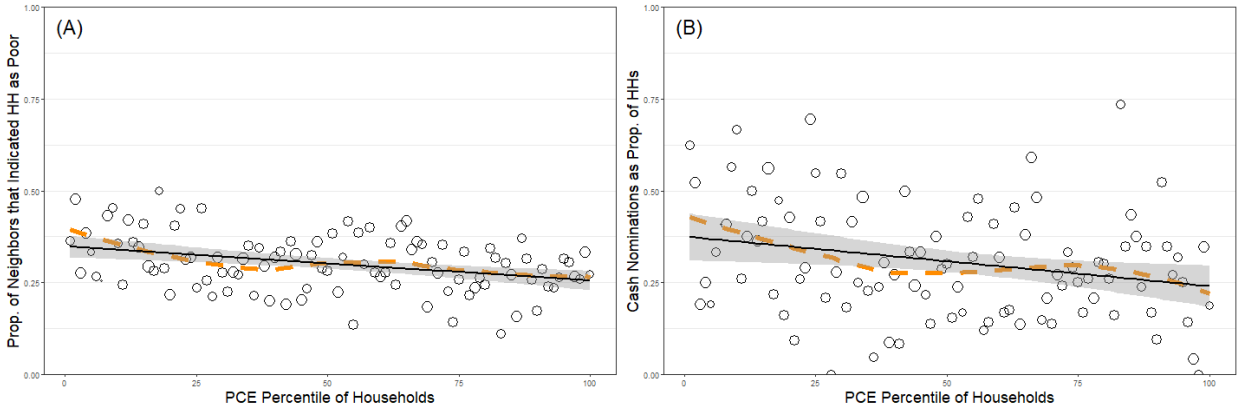

Figure 2: Identifying Poor Neighbors & Allocating Transfers Based on Consumption: The figure shows the relationship between targeting information provided by neighbors and poverty of households in the neighborhood. Panel A shows the relationship between the proportion of neighbors who voted households as poor and the percentile of households in the within-neighborhood per capita expenditure distribution. Panel B shows the relationship between the proportion of households nominated for a cash grant and the percentile of households in the within-neighborhood per capita expenditure distribution. The black line shows the weighted-least squares regression line. The shaded area shows the 95% confidence interval. And the orange dashed line depicts the local polynomial regression fit with smoothing parameter, α, equal to 0.75.

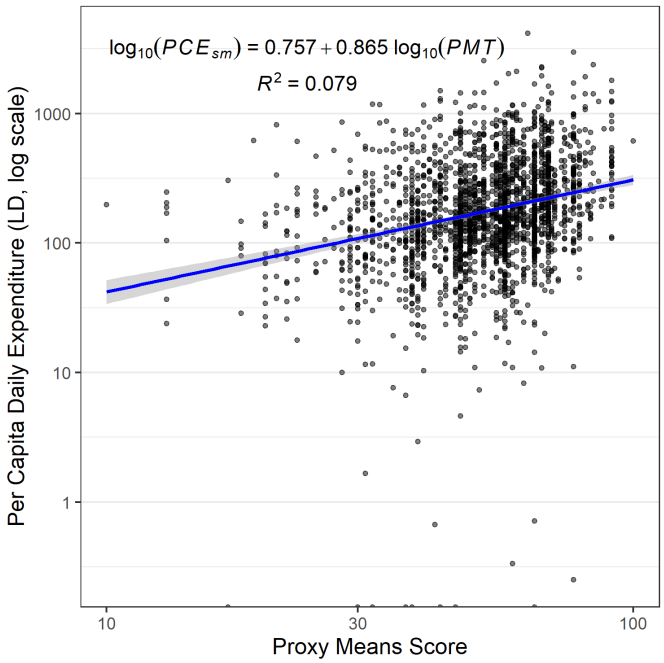

Figure 3: Relationship between Per capita daily expenditures and proxy means score (Not Directly Referenced in Text)

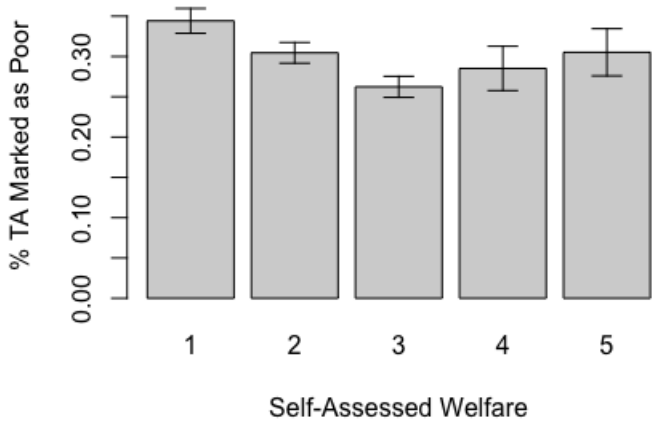

Figure 4: Subjective welfare of households Targeting Assistant Neighbors (TAs) identified as poor