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Targeting Efficiency:
How well can we identify the poor?

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Abstract

Effective identification of the target population is crucial to the success of aid programs. However, evidence suggests that the targeting efficiency of aid programs is less than perfect. For example, a report by the Indian National Sample Survey Organization found that 18% of the wealthiest 20% of the rural population (ranked by monthly per capita expenditure) held Below Poverty Line rationing cards. Thus, even if an aid program is theoretically claimed to be effective, the impact of the program can be diluted if the program does not reach the intended population. In this study, we evaluate the targeting efficiency of various assistance programs operated by the government of India and a program operated by Bandhan, a Kolkata-based micro finance institution. We find that the methods used by government programs fail to identify the poorest of the poor. On the other hand, Bandhan's process, including a Participatory Rural Appraisal (PRA), successfully targets a group that appears poorer in various respects. Our findings suggest that PRAs can generate a reasonably good indicator of economic well-being and can serve as the basis for targeting.

Contents

| | |
|---|----|
| 1. Introduction..... | 1 |
| 2. Data and data collection..... | 2 |
| 3. Targeting efficiency of government aid programs..... | 4 |
| 4. Analysis of Bandhan's identification process..... | 7 |
| 4.1. Overview of Bandhan's "targeting the ultra poor" | 7 |
| 4.2. Details of the identification process..... | 9 |
| 4.3. Analysis of the PRA process..... | 11 |
| 4.4. Analysis of Bandhan's verification process..... | 14 |
| 5. Conclusions..... | 18 |
| References..... | 20 |
| Annexure 1: Figures..... | 21 |
| Annexure 2: Tables | 26 |

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1. Introduction

Nearly all poverty alleviation programs target a particular sub-population. This feature is most readily apparent in programs designed to aid those who have suffered a particular tragedy, such as grants to widows of debt-ridden Maharashtra farmers, but is also generally true of large, broad based development interventions. At first blush, this may seem unremarkable and not to warrant particular consideration. But effective identification of the target population is crucial to the success of aid programs. If, for instance, households which are adequately nourished are identified as eligible for subsidized food, the program is unlikely to significantly reduce malnutrition.

When the targeted population is not distinguished by a well-defined, observable trait, however, identification of the intended population may be complicated. Evidence suggests that the targeting efficiency of aid programs is less than perfect. A report by the Indian National Sample Survey Organization found that 18% of the wealthiest 20% of the rural population (ranked by monthly per capita expenditure) held Below Poverty Line (BPL) rationing cards. That targeting inefficiency has real consequences is apparent from a 2006 story in *The Hindu* which reported on street protests carried out by families who had been denied their ration cards.

In this study, we evaluate the targeting efficiency of various assistance programs operated by the government of India. We find that the methods used to identify eligible households do not particularly target the poorest of the poor. In our sample, those who receive government assistance do not appear worse off, according to our measures of poverty, than households which do not.

We also evaluate the targeting efficiency of a process used by Bandhan, a Kolkata-based micro finance institution, to identify households eligible to participate in one of their programs designed to assist the poorest of the poor. This program offers eligible households grants consisting of income generating assets (livestock, inventory, etc.) as well as training and assistance operating a small-scale enterprise. The goal is to assist destitute households to establish a regular income source.

Our results indicate that Bandhan's process successfully targeted a group which appears poorer in various respects, particularly land ownership, assets and credit access. Along other dimensions of poverty, such as expenditure, the results are less crisp; it does not appear that per capita consumption among the identified group is less than among those not identi-

fied as eligible. This may be in part due to the fact that these families are smaller, so that their total expenditure (not per capita) is made smaller.

While we focus on this particular intervention, our study has broader relevance since the identification process employed in this setting included a Participatory Rural Appraisal (PRA). PRA's are widely practiced by NGOs, both within India and internationally, when conducting development interventions. Increasingly, PRA methodologies are used to identify beneficiaries for assistance programs. Consequently, it is important that the information collected from a PRA accurately reflects the conditions within the village where it was conducted.

There is some evidence suggesting that certain types of information can accurately be obtained using PRAs (see Chambers (1994) for an overview of various results). Specifically in West Bengal, Chattopadhyay and Duflo (2001) collected information on the infrastructure (water systems, etc.) of various villages using PRAs. The infrastructure was subsequently inspected to verify the information from the PRA, revealing that this information was highly accurate. In this study we assess the reliability with which PRAs can accurately rank village residents according to economic status.

Specifically, we evaluate how well our measures of poverty accord with the evaluation of poverty established by the PRA. This analysis reveals that those ranked as most poor in the PRA are in fact poorer than others in very observable dimensions such as land and asset ownership. They also have less access to credit. This suggests that the PRA can generate a reasonably good indicator of economic well-being and can serve as the basis for targeting.

2. Data and data collection

In order to improve their targeting process, Bandhan requested that we do a study to assess how effectively they were identifying the poorest households in each village, or the “Ultra Poor.” To accomplish this we conducted a detailed survey among those not identified as Ultra Poor in several villages as well as among those identified as Ultra Poor. This allows us to compare the economic situation of those identified as eligible to receive grants and those who were not identified.

Firstly the surveying team conducted a census of all households in the village. Each household was classified on a 1-5 scale along several characteristics, such as land holdings, quality of house, ownership of assets, education status, employment status, access to credit, etc. This census utilized similar classification criteria as the government administered BPL

census, which is intended to identify the population living below the poverty line and determine who is eligible for certain government assistance programs.

Due to the limited scale of this survey, the sampling frame was restricted to the poorer population within the village. To be considered for our survey, a household must meet one of the following requirements: own less than 1 acre of irrigated land or less than 2 acres of non-irrigated land, not live in a *pucca* house (i.e. one made of brick, stone or concrete), own less than 4 articles of clothing, and own none or only one durable household good.¹

Of 1,757 households enumerated in the economic census, 605 satisfied the criteria above. From this restricted list, a random sample of households was selected and administered a survey similar to that given to households identified as eligible for grants by Bandhan. This survey was conducted among 178 households in five villages; eight of these households were under consideration by Bandhan and were subsequently verified as eligible to receive a grant. Of the remaining 170 households, 121 appeared in the list of households from the PRA conducted by Bandhan. The other 49 households were not enumerated by the PRA. While it is of independent interest that the PRA process fails to enumerate some households, for the purposes of this study we restrict our analysis to the households appearing in the PRA list. Our final dataset contains these 121 households as well as 92 households identified as Ultra Poor by Bandhan.

Table 1 provides summary statistics for our entire sample as well as separately according to whether households were identified as Ultra Poor by Bandhan or whether they fall below the official poverty line for Rural West Bengal². As might be expected given the mandate of Bandhan's identification process and the sampling design of the additional survey, this is a relatively poor population. The mean per capita monthly average expenditure is Rs. 426 (\$1.25 per member per day in PPP adjusted 2006 U.S. dollars). Average expenditure on food and fuel is Rs. 303 (\$0.89 per member per day in PPP adjusted 2006 U.S. dollars). For both measures of consumption, approximately half the sample population spends less than one dollar a day and nearly all the population spends less than two dollars a day.

Other variables conform to what one would expect in this sample. Mean land holdings are 5.65 katthas (approximately 0.113 acres). In addition 21% of the sample is landless.

¹ The items considered were: computer, telephone, refrigerator, husking machine, color television, electric cooking appliances, costly furniture, LPG (gas) connection, light motor vehicle or commercial vehicle, tractor, two or three wheeler, motor van, power driven tiller.

² Based on the 2004-2005 Poverty Line Estimates by the National Sample Survey Organization. Below the poverty line for rural West Bengal is defined as having per capita consumption under Rs. 382.82.

While 46% of households have obtained loans, only 8% obtained credit from a formal source.³

As well as being poor, this population lacks education; average completed years of education per household member is 1.24 years and 23% of households have school aged children (5-14 years old) out of school.

This is also a vulnerable population; only 66% report that everyone in the household regularly eats two meals a day, approximately half of those surveyed report having experienced a medical shock⁴ in the last year, 21% suffered a medical shock requiring institutional care⁵ and 41% suffered an economic shock.⁶ Moreover, to the extent that receipt of assistance is an indication of need, this is a needy population; two thirds report receiving assistance from one of the government programs listed in the questionnaire (such as Below Poverty Line (BPL) rationing, subsidized housing, participation in employment generating schemes, etc.). Figures for the most common assistance programs are reported separately in Table 1.

On average, those identified as Ultra Poor have less land, fewer assets, less education and are more likely to be landless and have children out of school. Mechanically, those living below the official poverty line spend less than those who do not. They are also 15% less likely to report having experienced a medical shock requiring institutional care, a difference which is statistically significant at the 1% confidence level. Since this is defined as having spent more than Rs. 500 on institutional medical care this may partly result in their lower expenditure. When comparing the Ultra Poor to those below the poverty line, it is apparent that the Ultra Poor spend more per capita but they have less land, are more likely to be landless, have less access to formal sources of credit, are less educated and are more likely to lack able bodied adult household members (particularly male members).

3. Targeting efficiency of government aid programs

³ A formal source is defined as a commercial bank, government bank, self-help group or a cooperative. Informal sources include family members, friends, neighbors, moneylenders and shopkeepers.

⁴ A medical shock is defined as having spent more than Rs. 500 (44 PPP adjusted 2006 \$U.S.) on any one household member's medical care.

⁵ A medical shock requiring institutional care is defined as having spent more than Rs. 500 (44 PPP adjusted 2006 \$U.S.) on institutional medicine in the last year.

⁶ An economic shock is defined as any of the following occurring in the past year: house was severely damaged, livestock became ill, livestock died, conflict/dispute/legal case, or theft.

Since our survey inquired about receipt of assistance from various government poverty alleviation programs, we are able to assess to what extent this aid was directed to the poorest segment of the population. One limitation of this exercise is that, by design, all households in our sample are drawn from the bottom of India's economic spectrum. Even so, if these government programs aim to benefit the very poorest we should expect that either the poorest within our sample overwhelmingly receive this aid or that all households in our sample do. As is evident from Table 1 the latter case does not appear true; for instance only 29% receive BPL rationing and 10% have an Antodaya card.

Targeting for many government aid programs is based on the BPL census, conducted by the government to identify those households living below the poverty line. This census, however, has been criticized for systematic exclusion of extremely poor households. Moreover, there are concerns that the final lists of BPL households are directly manipulated to include non-poor households (Mukherjee, 2005). Jalan and Murgai (2007) find that many households who are below the poverty line according to consumption measures are incorrectly classified by the BPL census.

To assess the efficiency of this targeting process in these villages, we contrast the features of those who participate in government programs and those who do not. Specifically, we compare various expenditure measures, land holdings, house size, whether members eat two meals a day, access to credit, self-classification of financial condition and an index of asset holdings based on principal component analysis of durable goods and livestock holdings. By regressing various poverty indicators on a dummy indicating participation in a particular government program, and village dummies, we compare the mean of the poverty indicator between those that receive aid and those that do not.

In particular, we perform this comparison for four government aid programs; BPL and Antodaya rationing programs, the Indira housing program and employment generating schemes. The BPL and Antodaya programs provide a card which entitles households to purchase subsidized food and fuel at ration shops. BPL cards are intended for those living below the poverty line while Antodaya cards are intended to go to exceptionally poor households. The Indira housing program (Indira Awaas Yojana) evolved into its present form by 1996, and the goal of this program is to improve housing for the disadvantaged rural population. To this end grants are distributed to build or repair homes and, in some cases, loans are facilitated for these purposes. Preference for the Indira housing program is supposed to be given to those identified as below the poverty line by the government BPL census (Jalan and Mur-

gai, 2007). Preference may also be given to widows of servicemen. While a national program, local governments (District Panchayat, Gram Sabha and DRDA) bear some responsibility for the implementation of this program.

The National Rural Employment Guarantee Act (NREGA) was launched in 2005. The mission of NREGA is to provide “at least one hundred days of guaranteed wage employment in every financial year to every household whose adult members volunteer to do unskilled manual work and for matters connected therewith or incidental thereto.”⁷ Participation in the program requires registration with the Gram Panchayat (local official) to obtain a job card. Holders of this card become eligible to apply for jobs allocated under the program.

According to our results, the population which receives assistance from these programs is not statistically different, with respect to our poverty indicators, from the population which does not. Table 2 presents the results. For receipt of BPL rationing we are unable to reject that the means between the two groups are equal for any of the indicators of poverty. Moreover, some of the coefficients take the opposite sign than would be expected. The same is true when comparing households which have Antodaya cards with those that do not.

Only with respect to per capita non-food expenditure do beneficiaries of the Indira housing program appear statistically different (at the 10% confidence level) from their peers. However, no other measure is significantly different and, as in the other cases, several coefficients have the “wrong” sign.

Interestingly, there is at least the suggestion that households which have received work from an employment generating scheme are poorer than others. The coefficient on participation in this program enters with the predicted negative sign when any of the expenditure measures are taken as the left hand side variable, although no coefficient is significant at the 10% level. The results also suggest that these households own an average of 4.7 katthas (0.09 acres) less land, a difference which is significant at the 10% level. These results may be driven by the fact that there is also a component of self-selection in employment generating programs. Since benefits require work, only households who are poor enough to lack more attractive work opportunities will take up these programs. Mukherjee (2005) notes the potential of self-selecting programs to overcome barriers, whether political or practical, to effective targeting.

⁷ The National Rural Employment Guarantee Act of 2005. Retrieved from: The Gazette of India, New Delhi, Wednesday, September 7 2005 pp:1. <http://rural.nic.in/rajaswa.pdf>

Perhaps owing to the failures of censuses to identify poor households, many organizations have turned to other methods. A particularly popular method used for ascertaining the economic status of households is the Participatory Rural Appraisal (PRA). Indeed, Mukherjee (2005) draws on information gathered in PRAs to evaluate the targeting efficiency of the BPL census. The PRA process was pioneered in the 1980's and 90's, largely by government and non-government organizations in Kenya and India. By 1997, the practice had spread globally; PRA activities had been conducted in over 30 countries, both developing and developed, by the end of 1996. In India, PRA methods have been used by numerous NGOs as well as by several government agencies.⁸ International organizations, including USAID, Save the Children and Care International among others, also employ PRA methods in conducting their operations.⁹ In light of the targeting process used by Bandhan, we evaluate the accuracy with which PRAs can identify especially poor households. Firstly, however, we provide an overview of Bandhan's assistance program and the specifics of the process used to identify beneficiaries.

4. Analysis of Bandhan's identification process

4.1. Overview of Bandhan's "targeting the ultra poor"

It has been noted in various studies on the impact of microfinance that the benefits accruing to borrowers tend to be less apparent among the poorest of the poor (Morduch 1999, Rabbani, et al. 2006). Morduch (1999) remarks that this result lends credence to the argument that "poorer households should be served by other interventions than credit." One potentially constructive "other" intervention would be one which prepares the poorest of the poor to successfully participate in regular microfinance programs, which is precisely the aim of this project.

In theory, a production oriented loan, for example for the purchase of livestock, should generate the income stream to meet loan payments and thus could be extended to clients without an independent income source. In practice, however, micro credit institutions may be reluctant to extend loans to the poorest of the poor. For one thing, this population is

⁸ Chambers, 1997. p.114, 248

⁹ Burde, Dana. Save the Children's Afghan Refugee Education Program in Balochistan, Pakistan, 1995- 2005 2 Report, 2005 <http://www.savethechildren.org/publications/technical-resources/education/pakistan-afghan-refugees-education-project-report-9-26-05.pdf>; http://www.usaid.gov/regions/afr/success_stories/ghana.html; <http://www.care.org/careswork/projects/ETH051.asp>

likely to have pressing consumption needs and the loan may not be used for productive purposes. Moreover, an adverse shock is more likely to lead to default for a borrower who has no regular income; thus the bank may exclude the poorest from their client pool or, if the bank utilizes joint liability, other borrowers may be reluctant to form a borrowing group with this population.

This intervention aims to alleviate these constraints by helping the poorest of the poor establish a reliable income stream. To that end, Consultative Group to Assist the Poor (CGAP) has provided \$30,000 as grants for the purchase of income generating assets to be distributed to households identified as “Ultra Poor.” Grants of \$100 are being distributed to 300 beneficiaries residing in rural villages in Murshidabad, India (a district north of Kolkata) by Bandhan. The design of this program was based on the pioneering work of BRAC, a Bangladeshi development organization. For several years, BRAC has been distributing grants through its “Challenging the Frontiers of Poverty Reduction-Targeting the Ultra Poor (CFPR-TUP)” program with the aim of helping the absolute poorest graduate to microfinance.¹⁰ Working in close consultation with BRAC, Bandhan developed the criteria to identify the Ultra Poor. BRAC has also provided technical support for program implementation throughout the process.

The initial phase of the intervention consists of Bandhan identifying those eligible for the grants; the poorest of the poor within each village. To date, the identification process has occurred in 54 villages, with an average of 24 households identified as Ultra Poor in each village.

Following identification, half of the potential beneficiaries are randomly selected to receive assets. These households are contacted by Bandhan to select an enterprise they would like to undertake; generally households choose to use the grant to purchase livestock, either cows or goats, for the production of milk or meat. Rather than transferring cash, Bandhan procures the asset and distributes it to the beneficiaries. The grants are also used to finance other inputs, such as fodder and sheds to house the animals. In addition to disbursing the grants, Bandhan meets weekly with the beneficiaries to check on the status of the enterprise and to provide training. This training is both specific to the enterprise (e.g. methods of animal husbandry) and to teach general skills, such as numeracy.

Eighteen months after receipt of the asset, the beneficiaries will be eligible for microfinance provided by Bandhan.

¹⁰ BRAC website <http://www.brac.net/cfpr.htm>

4.2. Details of the identification process

To make the concept of “Ultra Poor” operational and define the targeted population, Bandhan used a set of criteria adapted from those used by BRAC in their CFPR-TUP program. Firstly, an eligible household must have an able-bodied female member. The rationale for this requirement is that the program is intended particularly to benefit women¹¹ and any benefit accruing from the grant requires that the beneficiary be capable of undertaking some enterprise. The second mandatory requirement is that the household not be associated with any micro finance institution (in keeping with the aim of targeting those who lack credit access) or receive sufficient support through a government aid program. “Sufficient support” was determined on a case-by-case basis by Bandhan; while many of the households they identified as Ultra Poor participate in some government aid program, they determined that this assistance was not sufficient to alleviate the poverty of the household. In addition to these two criteria, eligible households should meet three of the following five criteria: the primary source of income should be informal labor or begging, land holdings below 20 decimals (10 katthas, 0.2 acres), no ownership of productive assets other than land, no able bodied male in the household, and having school-aged children working rather than attending school.

To identify those households satisfying this definition of Ultra Poor, Bandhan utilizes a multi-phase process. The initial task is to identify the poorer hamlets in the region. Since Bandhan has operations in Murshidabad, this is accomplished by consulting with local branch managers who are familiar with the economic conditions in these villages.

In the second phase, Bandhan conducts PRAs in selected villages to identify the subset of the population most likely to be Ultra Poor. To ensure that the PRA includes a sufficient number of participants, Bandhan employees enter the village on the day prior to the PRA; they meet with teachers and other local figures to build rapport with the residents, announce that the PRA will occur on the following day and encourage participation. Bandhan aims for 12-15 PRA participants, but often the figure is as high as 20. Moreover, they encourage household members from various religions, castes and social groups to attend.

In this particular context, the PRA consists of social mapping and wealth ranking, following a sophisticated process to identify the poor. Firstly the main road and any prominent hamlets landmarks (temples, mosques, rivers, etc.) are etched into the ground, usually in front of a central house in the hamlet. Subsequently the participants enumerate each household

¹¹ While the majority of beneficiaries are female, some men were identified as eligible under special circumstances such as physical disability

residing in the hamlet and mark the location of the households on the hamlet map. For each household, the name of the household head is recorded on an index card.

In the wealth ranking stage, the index cards are sorted into piles corresponding to socio-economic status. To accomplish this, Bandhan's employees select one of the index cards and inquire about that household's occupation, assets, land holdings and general economic well being. They then take another card and ask how this household compares to the prior household. A third card is selected, classified as similar in wealth to one or the other of the prior households and then whether it is better off or worse off than that household. This process is continued until all the cards have been sorted into piles, usually 5 of them, corresponding to poverty status (the fifth pile representing the poorest group). Often a large percentage of the cards end up in the fifth pile, in which case these households are sorted in a similar manner into two or more piles.

PRA participants are involved in determining what criteria constitute a disadvantaged household, relative to their neighbors, within that particular area. Additionally, the relative socio-economic status of a given household, which determines into which pile they will be sorted, is established through the discussion of participants. Based on the belief that a lively discussion among many people will generate the most precise definition of (relative) poverty and facilitate accurate wealth ranking, Bandhan attempts to include the voices of many villagers in the discussions. Anecdotally, however, it is sometimes the case that a few prominent voices dominate the PRA process and largely determine the ranking of households. A potential concern is that these persons may misrepresent the socio-economic status of certain households (for example friends, relatives or households favored by that individual) in the expectation that the households identified as most disadvantaged will receive some assistance. Although Bandhan does not reveal the details of the intervention at the time of the PRA¹² there may be an implicit association of PRAs with future development programs.

Following the PRA, Bandhan selects the households assigned to the lowest few ranks (progressively taking higher categories until they have approximately 30 households). In the second phase of their identification process a Bandhan employee visits these households to conduct a short questionnaire. The questionnaire pertains to the criteria for Ultra Poor classification; inquiring about the presence of an able-bodied woman, presence and ability to work of a male household head, land holdings, assets, NGO membership, etc. Based on the

¹² The stated intent of the PRA is simply to assess the economic situation of the villages for research purposes.

information collected in this survey, Bandhan narrows its list of potentially Ultra Poor households to 10-15.

In the final stage of the process, the project coordinator, who is primarily responsible for administration of this program, visits the households. He verifies the questionnaire through visual inspection and conversations with the household members. Final identification is made by the project coordinator, according to the established criteria and his subjective evaluation of the households' economic situation.

4.3. Analysis of the PRA process

Using data collected from the PRAs carried out by Bandhan, we are able to investigate the extent to which the use of a PRA can improve targeting by identifying the sub-population of interest. For each household in our sample, we observe the wealth rank (corresponding to the pile of index cards into which that household name was sorted) determined by the PRA. These ranks range from 1 to 6, representing categories classified as “very rich”, “rich”, “average”, “poor”, “very poor” and “exceptionally poor.” A lower rank corresponds to richer households. In Table 3 we investigate how those identified in the PRA as “very poor” or “exceptionally poor” (PRA rank of 5 or 6) compare to those with a PRA rank below 5. Specifically we regress our indicators of poverty on a dummy indicating PRA rank of 5 or 6 and a set of village dummies.

Those assigned a high PRA rank appear poorer than others in several important respects. Firstly, these households tend to have substantially less land than others. On average, very or exceptionally poor households own 6.3 katthas (0.13 acres) less land. The coefficient is statistically significant at the 1% confidence level and the magnitude of the point estimate is substantial; this difference represents 74% of mean land holdings among those not identified as Ultra Poor (8.5 katthas).

Figure 1, which plots the cumulative distribution functions (cdfs) of land holdings separately for those ranked very or exceptionally poor in the PRA and those given a lower rank, confirms these results. The distribution of those given a PRA rank of 1-4 appears to stochastically dominate the distribution of households ranked 5 or 6, meaning that for a given level of land holdings a higher percentage of those ranked 5 or 6 own less than that quantity of land than the corresponding percentage for those ranked 1-4. The advantage of this comparison relative to the regression analysis is that it reveals differences between the two groups that are unaffected by a few exceptionally large landowners; focusing on the population with low val-

ues of land holdings, the figure reveals that those ranked 5 or 6 tend to own even less than others.

We also find that these households are poorer in terms of asset holdings: when our index of durable goods and livestock is taken as the left hand variable the coefficient on the PRA rank dummy is negative and significant at the 1% confidence level. While these households do not appear to be any less likely to have taken loans, they are 12% less likely to have obtained these loans from a formal source, a difference which is also significant at the 1% confidence level. The table also indicates that these households are 17% less likely to report regularly eating two meals a day. This coefficient is significant at a 5% confidence level. While not statistically different from zero, our point estimates suggest that this group lives in smaller homes, is more likely to be under the official poverty line and to self-classify their financial situation as worse than their lower ranked neighbors. Oddly, however, when we consider our various measures of expenditure, the coefficients take the unexpected, positive, sign. None of these coefficients are distinguishable from zero but the point estimates are still perplexing.

Differences in per capita expenditure, however, are not entirely informative when the outcome of interest is not expenditure itself but the economic well-being implied by an expenditure level (Olken 2003). One issue is with equivalence scales; certain household members, such as children, may require only a fraction of the expenditure required by others, such as adults, to achieve the same level of well-being, such as nutritional status. Furthermore, per capita variables do not account for economies of scale (it may be cheaper per capita to feed or clothe a large family) and public goods (a radio, for example, benefits all members although the per capita cost is higher in a small household). In light of these considerations, we re-run the regressions while controlling for household size, and present these results in Table 4. For the expenditure variables, none of the coefficients on the PRA rank dummy are statistically different from zero. However, when considering food and fuel expenditures and total expenditures less institutional medical expenditures the coefficient now takes the expected negative sign, although the estimates are not significant at the 10% confidence level. When total expenditures or non-food expenditures are taken as the left hand side variable, the coefficients remain positive but are drastically smaller. These results suggest that when averaging across households of all sizes those ranked very or exceptionally poor appear to spend more per capita. When comparing two households with the same number of members, however, the

households ranked poorer appear to spend less per capita (with respect to food and fuel expenditures and total expenditures less institutional medical expenditures).

As a robustness check, we also controlled for total household members when considering other indicators of poverty which should not necessarily be impacted by household size (land holdings, credit access, etc.). When considering these other variables the estimated differences between those ranked very or extremely poor and those ranked richer do not change appreciably.

These expenditure patterns are illustrated visually in Figures 2, 3, 4 and 5 which show the cdfs for total, food, non-food and total less institutional medical expenditure per capita expenditure for the two groups. The divergence of the cdfs for higher levels of expenditure when considering non-food expenditures suggests that that higher expenditure and higher PRA rank could both be driven by an omitted variable. For example, an economic shock to the household could simultaneously increase expenditures and also cause villagers to view the afflicted household as less fortunate. In Table 5 we investigate this hypothesis.

Using a linear probability model specification, we regress a dummy indicating PRA status of 5 or 6 on land holdings, per capita consumption and a set of variables which may cause villagers to perceive a household as especially poor.¹³ Since PRA rank is relative to other households in the same geographic area, these specifications contain a set of village dummies. Also, in light of the importance of household size, we condition on the number of household members. In all specifications the coefficient on per capita total monthly expenditure is statistically indistinguishable from zero. For land holdings the coefficient takes the predicted negative sign and is statistically significant. The table shows that having suffered a shock is not a significant determinant of high PRA status; the coefficients on having experienced a medical shock in the last year (i.e. having spent more than Rs. 500 on any member's medical care), having experienced a medical shock requiring institutional care (i.e. having spent more than Rs. 500 on institutional medical care) and on having experienced an economic shock (house was severely damaged, livestock became ill, livestock died, conflict/dispute/legal case or theft) are all indistinguishable from zero. Nor are households which have been identified by the government as in need of aid, indicated by participation in some government aid program, more likely to be seen as particularly poor by their neighbors. We do find that education is correlated with PRA status; an additional year of schooling per capita makes households 5% less likely to be ranked very or exceptionally poor and a house-

¹³ We also did this exercise using OLS and PRA rank in levels (1-6), the results are similar.

hold with a child out of school is 16% more likely to be so ranked. Both of these coefficients are significant at the 5% confidence level. The presence of disabled household members also appears important in determination of PRA rank. In particular we find that households with a disabled female member are 37% more likely to have been cast in the bottom piles during the PRA. It is possible that this feature of high ranked households would contribute to higher expenditure; treating these disabilities may raise expenditures and, if the disabled member is unable to contribute to household chores, expenditure on services may rise. Another result from this exercise is that the presence of an able-bodied adult (older than 14) male makes households 30% less likely to be assigned the highest PRA ranks.¹⁴

4.4. Analysis of Bandhan's verification process

In addition to conducting PRAs, Bandhan visited and interviewed households several times to identify those to be classified as Ultra Poor. In this section, we analyze how the additional verification narrowed the targeted population and how those identified as Ultra Poor differ from those not so identified.

The fourth column in Table 1 offers some insight into this question. It is apparent that households identified as Ultra Poor have less land. On average they have 6.65 katthas (0.13 acres) less and they are 12.6 percentage points more likely to be landless, differences which are both statistically different from zero at or above a 5% confidence level. In terms of assets, the Ultra Poor are in fact poorer on average; they live in smaller homes and own fewer durable goods and livestock, these differences are also significant at or above a 5% confidence level. Like those classified as poor in the PRA, the Ultra Poor are less likely to have obtained credit from a formal source, by 9 percentage points, but are no less likely to have obtained loans. They classify themselves as poorer and are less likely to report eating two meals a day, but these differences are not statistically different. The Ultra Poor are also less educated, the average member of an Ultra Poor household has completed 0.7 less years of schooling, significant at the 1% level. It is 6 percentage points more likely that an Ultra Poor household contains a disabled female member. While there is no statistical difference with respect to disabled male members, Ultra Poor households are 34 percentage points more likely to lack an able-bodied adult male (using 18 years and above as the definition of adult). Although the differences are not generally statistically different from zero, the table indicates that Ultra Poor households report higher expenditure than other households. Another noteworthy fea-

¹⁴ This coefficient is similar in magnitude using over 18 years as the definition of adult.

ture of Ultra Poor households is that only half include an able bodied adult male member whereas nearly 90% of not Ultra Poor households do, a difference which is statistically significant at the 1% confidence level.

To increase the precision of our comparison, we control for village specific characteristics. Table 6 shows regressions of various indicators of poverty on a dummy indicating whether the household was identified as Ultra Poor by Bandhan as well as a set of village dummies. In general, this exercise confirms what can be gleaned from the summary statistics; Ultra Poor households have about 6 fewer Katthas (0.12 fewer acres) of land, live in smaller houses, own fewer assets, are 7% less likely to obtain formal credit and 13% less likely to report regularly eating two meals a day. All of these results are statistically significant at or above a 10% confidence level. Figure 6 depicts the land holding cdfs for the two groups. It suggests that the distribution of the Ultra Poor is stochastically dominated by that of the not Ultra Poor.

For the most part, our analysis of the PRA itself and of Bandhan's identification process as a whole have similar implications. Both those ranked as very or exceptionally poor in the PRA as well as those identified as Ultra Poor tend to have less land, fewer assets and limited credit access relative to others. Moreover, they tend to be less educated households, to lack an able bodied adult male and to report food insecurity. This is not particularly surprising, since Bandhan selects households with a high PRA rank to visit for subsequent verification. In this section, we attempt to disentangle which characteristics of Ultra Poor households are determined by the PRA and which are determined by Bandhan's subsequent verification process.

To accomplish this we restrict our sample only to those households which were ranked as very or exceptionally poor in the PRA, leaving us with 110 observations. Of these 110 households Bandhan identified 85 as Ultra Poor and the remaining 25 as not Ultra Poor. Table 7 Panel A compares the Ultra Poor households to the others. The point estimates, while not statistically significant, suggest that the Ultra Poor have higher expenditure even when compared only to others ranked very or exceptionally poor. In Panel B we control for household size which results in smaller, but still positive coefficients. In terms of assets, credit access, food security and self-classification of financial situation we can not make a clear distinction between the Ultra Poor and others. The most salient result is that Ultra Poor households own less land, 3.2 katthas less on average. The economic magnitude of this coefficient is quite large since it represents 128% of mean land holdings within this very or exceptionally

poor group. Although not statistically significant, the point estimates indicate that they are more likely to be landless. The Ultra Poor also live in smaller homes on average.

Along some dimensions, Bandhan's verification process does not appear to identify a population which is very different from that identified by the PRA. However, according to indicators of poverty which are easily observed by household visits, such as land and house size, Bandhan did successfully narrow the population identified by the PRA to the poorest within the group.

A noteworthy difference between the implications of Table 6 and the summary statistics is that the regression framework suggests that the Ultra Poor spend more than others and that these differences are statistically different from zero. In particular, our results suggest that the average Ultra Poor household spends Rs. 67 more per household member per month than not identified households and Rs. 35 more per household member per month on food and fuel. The point estimates are considerable in magnitude since Rs. 35 represent 12% of the mean per capita monthly food and fuel expenditure. Figures 7, 8, 9 and 10 illustrate these differences graphically, showing the cdfs of total, food and fuel, non-food and total less institutional medical monthly per capita expenditure for the Ultra Poor and the not Ultra Poor. Given that per capita consumption is a widely used and important indicator of poverty, we are keenly interested in ascertaining what drives these results.

Figure 8 suggests that there are a few Ultra Poor households reporting rather high food and fuel expenditures. To assess the extent to which outliers might impact our results we dropped the top 2% of our sample ranked by per capita monthly food and fuel expenditure (this represents 5 observations, all of which were Ultra Poor households). Using this restricted sample we regressed per capita monthly food and fuel expenditure on a dummy for having been identified as Ultra Poor and village dummies, the coefficient on the Ultra Poor dummy drops from 35.6 to 12.4 and is no longer statistically significant (p value 0.46).

Since they tend to own much less land, it may be that the Ultra Poor spend more on food because they do not produce anything for home consumption and the non Ultra Poor may underestimate the value of what they produce at home.¹⁵ Since we lack complete information on home production we are unable to test this conjecture directly. We do, however, investigate this concern by restricting our sample only to those households with 15 or less katthas (0.3 acres) of land (this causes us to drop 21 observations or 10% of our sample). We run

¹⁵ Although the questions in our survey were meant to include all consumption rather than just expenditure, it is possible that our variables do not accurately reflect consumption, perhaps due to misinterpretation of the question or difficulty estimating the value of home production.

the same regressions for the expenditure variables as in Table 6, the results in Table 8 show that the differences in total and non-food expenditure between the Ultra Poor and not Ultra Poor are amplified when considering only these households. In terms of food and fuel expenditure, the estimate of the difference between the two groups is essentially the same. This suggests that home production of food is not the primary reason for these differences.

We also ran these regressions using the disaggregated components of per capita monthly food and fuel expenditure. When considering each item separately the coefficient on having been identified as Ultra Poor generally remains positive, as is shown in Table 9. These coefficients, however, are imprecisely estimated; the only variables for which we can detect a statistically significant difference are “Other food” and “Fuel and Light.” The latter finding in particular, coupled with the observation that Ultra Poor households tend to have fewer members, suggests that there may be economies of scale driving our previous results; if a home is to be lit or a meal cooked regardless of how many people reside in that home, then per capita fuel and light expenditure will appear larger in a smaller household.

In Table 10 we re-ran the regression from Table 6, controlling for total number of household members. The estimated differences in expenditure between the Ultra Poor and not Ultra Poor are substantially lower in this specification, ranging from 46% lower for food and fuel expenditure and to 79% lower for total expenditure less institutional medical expenditure. None of these coefficients were statistically different from zero. We perform the same robustness check as when analyzing the PRA and find that the coefficients do not appreciably change when considering variables that should not necessarily be impacted by household size.

A final factor which may cause us to observe Ultra Poor households spending more than non Ultra poor households is if Ultra Poor households have experienced economic shocks (e.g. need to repair hose damage or pay medical bills). This will be particularly true if having experienced such a shock makes a household more likely to be identified as Ultra Poor. Closer inspection of the expenditures enumerated by the households revealed that this phenomenon may occur; several of the most costly single expenditures were for institutional medical care (hospitalizations, etc.) in the last year. Moreover, the largest of these expenditures were reported by those identified as Ultra Poor; the maximum such expenditure reported by a not identified household is Rs. 10,000 ($\approx \$255$) whereas identified households reported expenditures of Rs. 10,000, 12,000, 16,000, 35,000 and 60,000 ($\approx \$255-1,538$).

This concern is what motivated us to look separately at per capita monthly average expenditure less institutional medical expenditure in the preceding analysis. We now turn to directly investigating whether such shocks make a household more likely to be identified as Ultra Poor.

We do not find, however, that suffering a medical or economic shock makes a household particularly likely to be identified as Ultra Poor. The variables which appear to determine identification as Ultra Poor are generally the same as those which determine PRA rank (see table 11). With the exception of having a child out of school, which is not statistically significant at the 10% level in this case, the coefficients are also of very similar magnitude as when considering the determinates of PRA status. We also investigate the determinates of identification as Ultra Poor conditional on PRA rank by performing similar analysis on the sample of households ranked as very or exceptionally poor in the PRA. Table 12 shows that for these households, the only significant determinant of identification as Ultra Poor is the presence of an able bodied adult male, which makes identification as Ultra Poor 26% less likely.

As another measure of the effectiveness of Bandhan's identification process, we consider who they "left out." Specifically, we calculate how many of the households not identified as Ultra Poor in our sample have per capita expenditure or land holdings below the median value among those who were identified within that particular village: that is, we look at how many of the not identified are "poorer" than the median identified household in their village. Table 13 presents these results. It turns out that many of the households which Bandhan did not identify are poorer than the median identified household; 61% of the not identified households spent less on food than the median identified household in their village, for total expenditure the figure is 55% and for land holdings it is 39%. 21% satisfy all these criteria.

5. Conclusions

Targeting a sub-population can be challenging, particularly when the target group is defined by a broad, ill-defined characteristic such as "extreme poverty." Various mechanisms can be employed to learn who the poorest of the poor actually are. Censuses to record household characteristics are one such method. However, this approach suffers from the fact that many indicators of poverty are not easily observable. This pitfall can be partially over-

come by interviewing household members, but individual interviews may not necessarily elucidate accurate measures of unobservable characteristics.

Another method is to conduct group discussions, such as a PRA, which rely not only on the responses of a specific household but also the input of their neighbors to ascertain which households are most disadvantaged.

In this paper, we consider the relative performance of each of these mechanisms with respect to identifying the poorest of the poor. We examine various government assistance programs which utilize a census as part of their targeting process. Our results suggest that these programs do not overwhelmingly reach the very poorest which may be due to deficiencies in the identification process.

We next evaluate a particular identification process employed by Bandhan, a micro finance institution, to target the poorest of the poor. This process included both a PRA and household surveys to verify and supplement the information collected in the PRA. We do this by comparing characteristics of households ranked as especially poor in the PRA by their neighbors to other households within the village. The comparison indicates that the ranking from the PRA accurately identifies a poorer sub-population along various important dimensions of poverty, most notably with respect to land holdings, assets and credit access.

Finally, we consider what further gains can be made by following a PRA with household visits and surveys. We find that the additional steps taken by Bandhan narrows the identified population to those who are more disadvantaged in crucial respects, particularly land holdings.

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Annexure 1: Figures

Figure 1

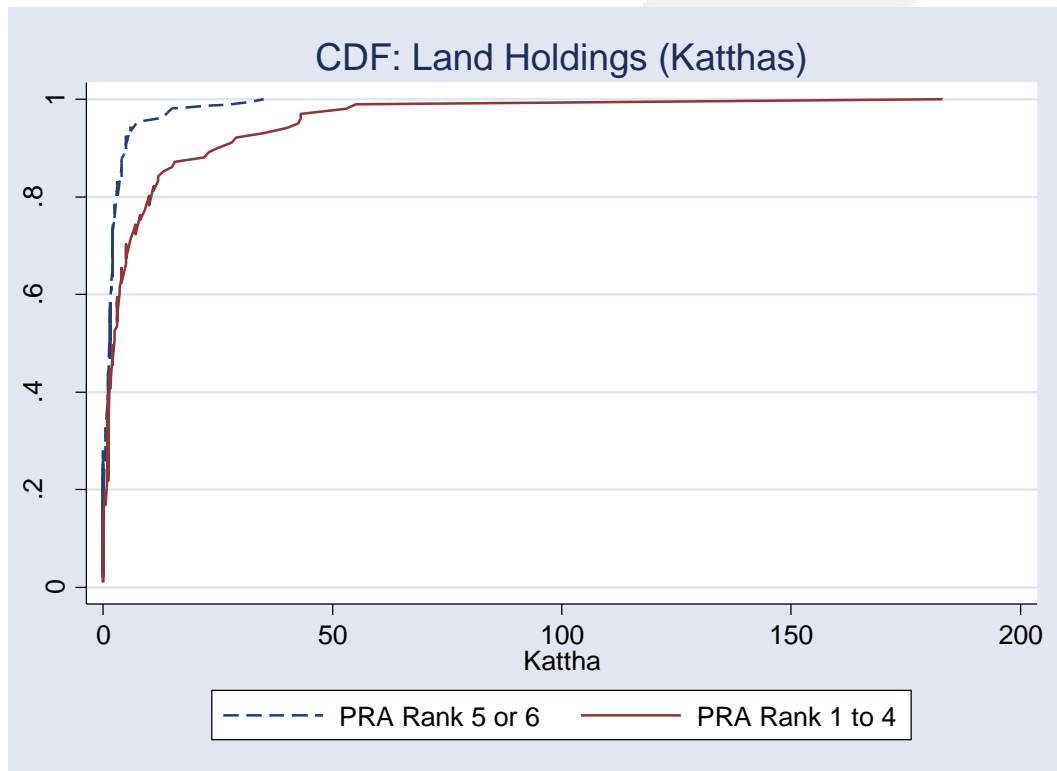


Figure 2

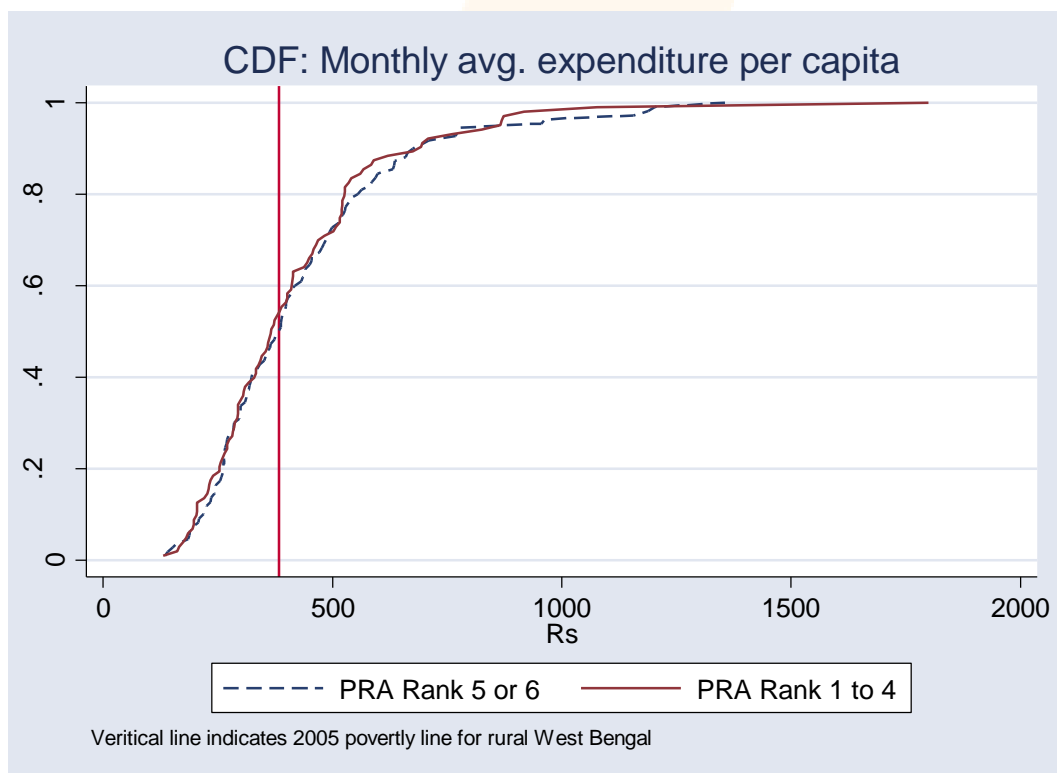


Figure 3

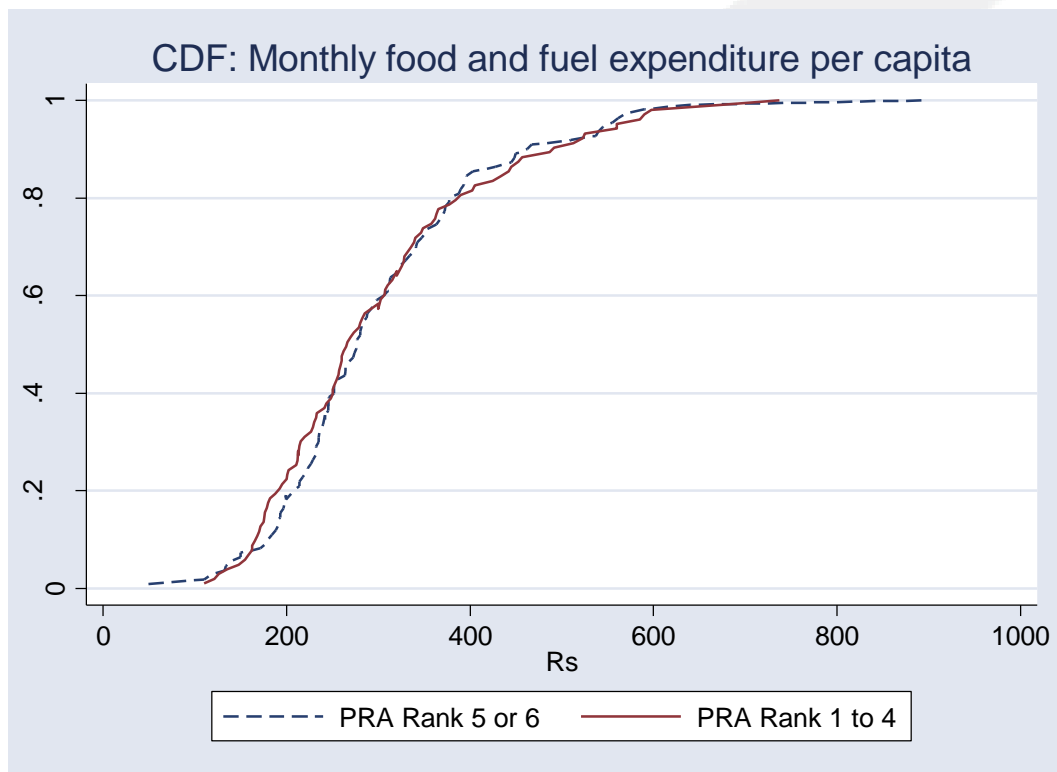


Figure 4

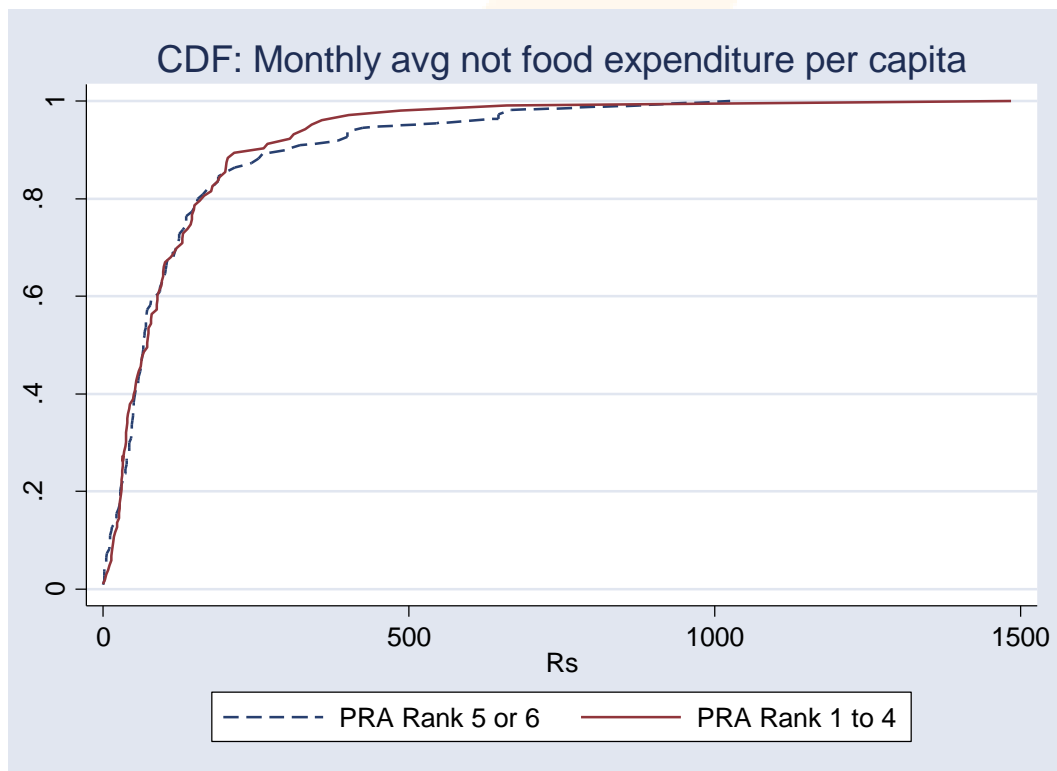


Figure 5

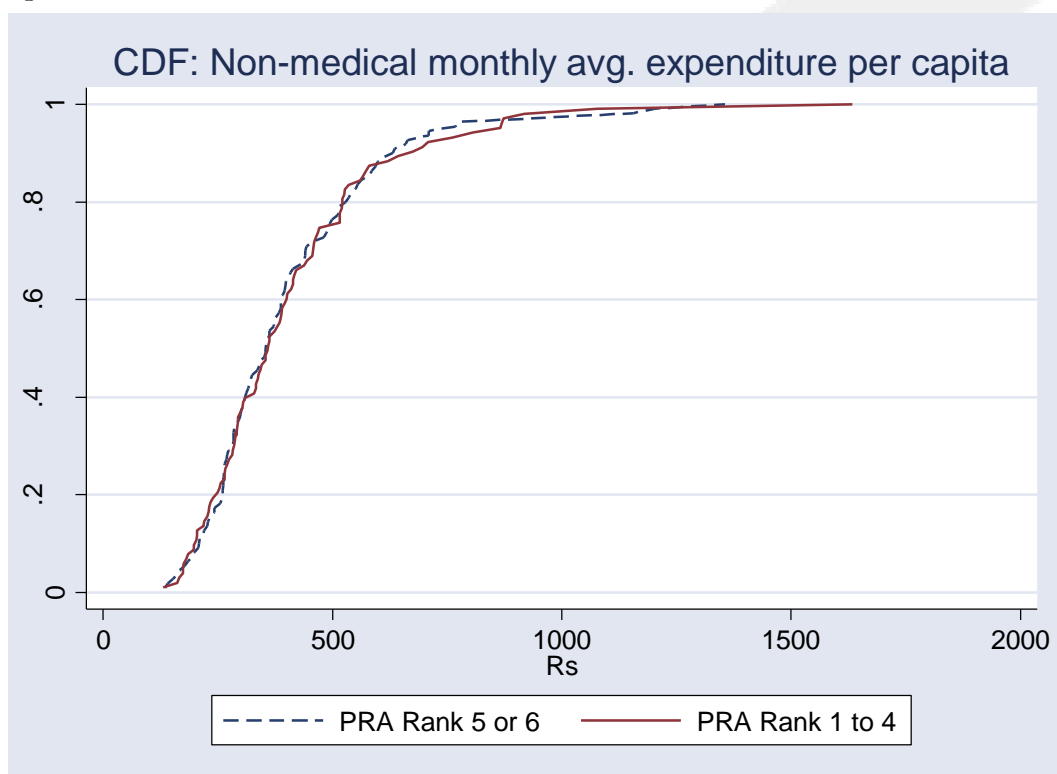


Figure 6

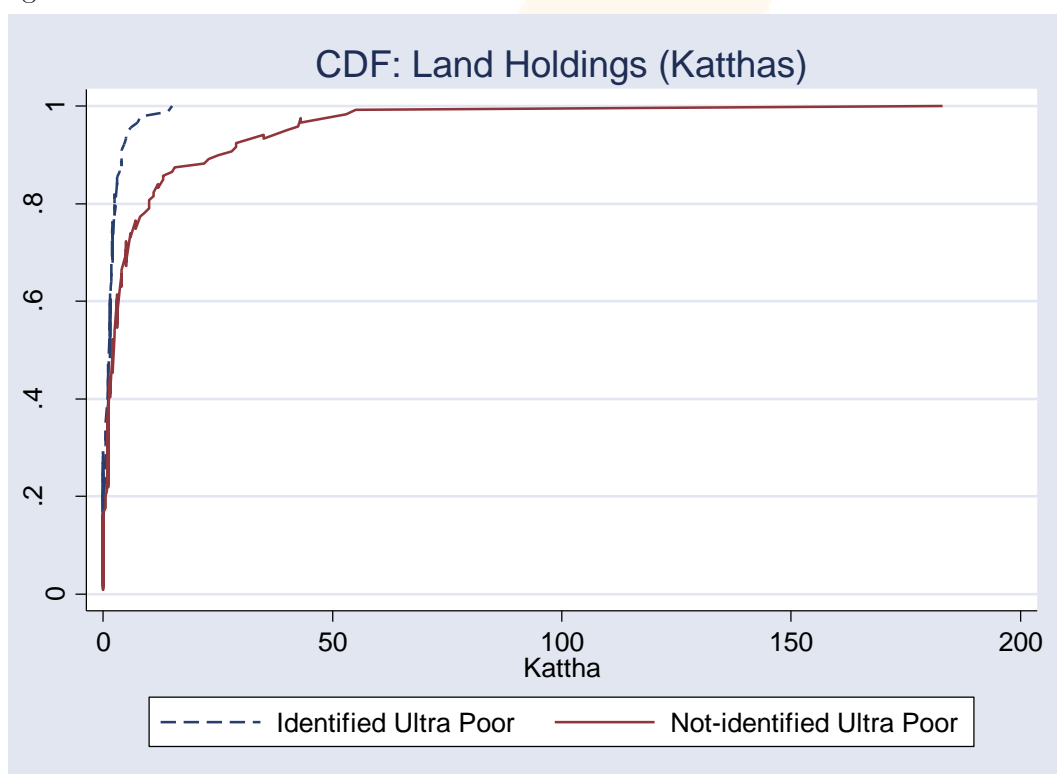


Figure 7

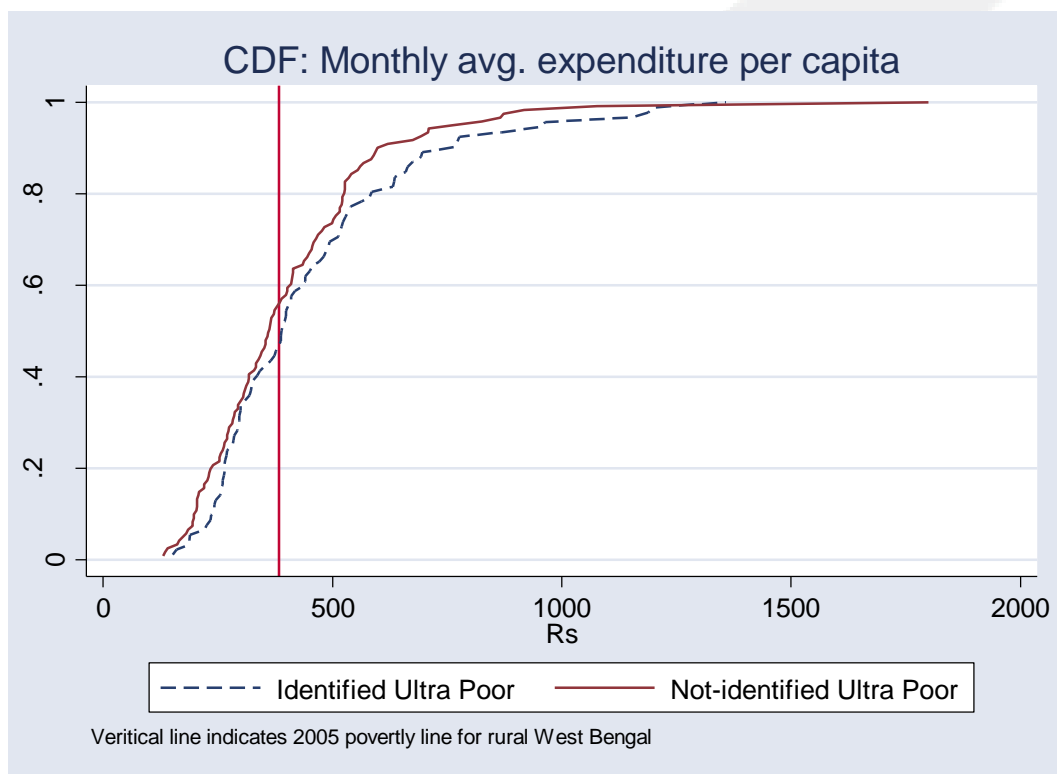


Figure 8

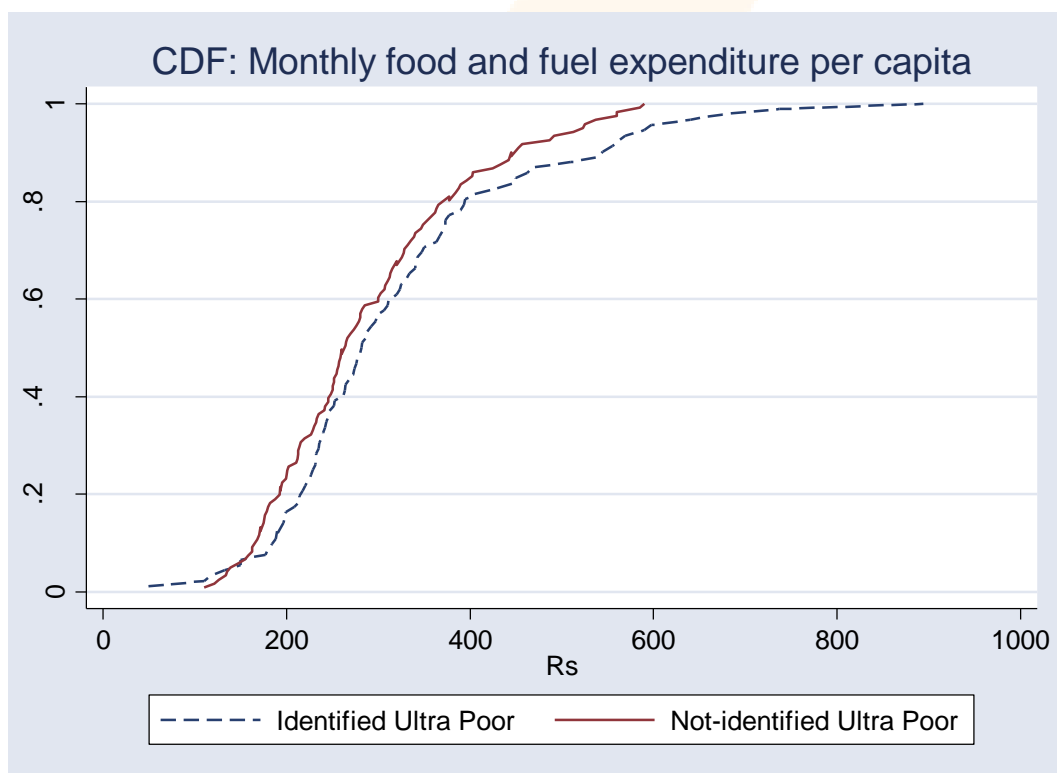


Figure 9

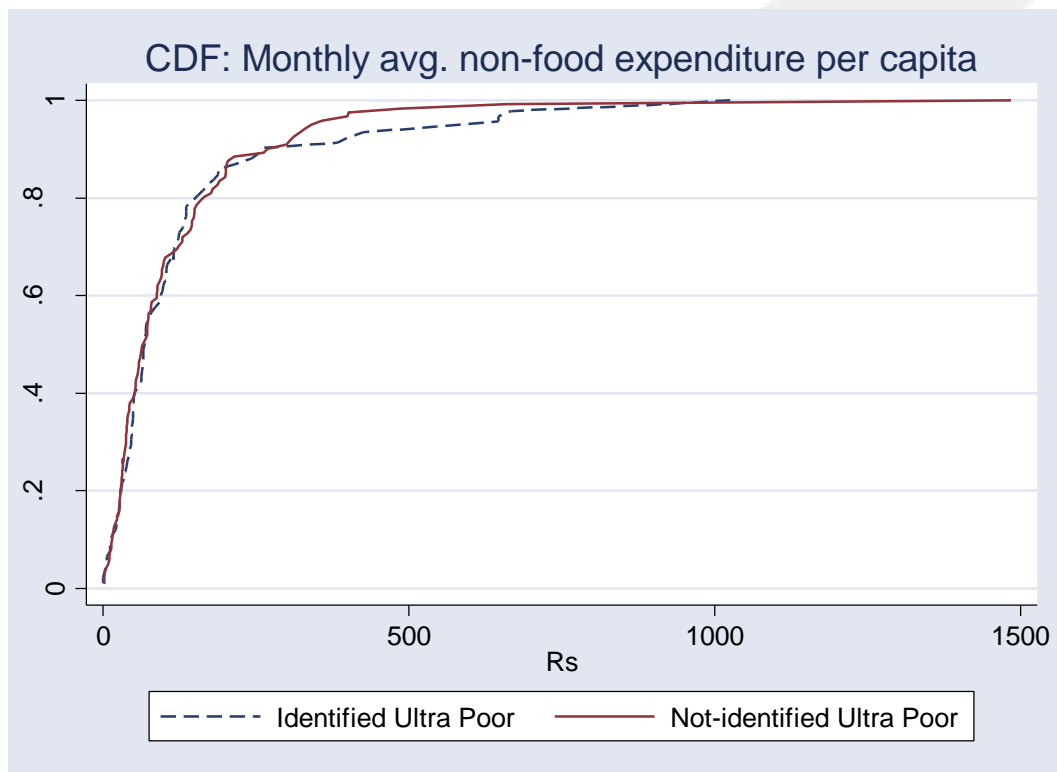
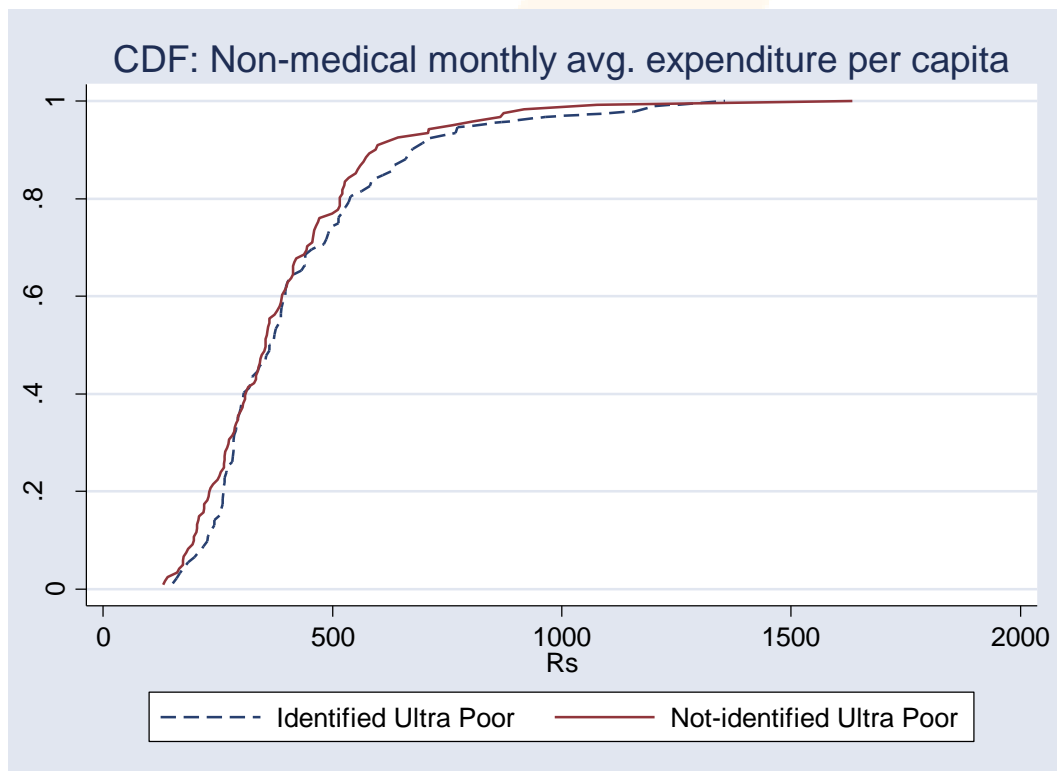


Figure 10



Annexure 2: Tables

Table 1

| | Summary Statistics | | | | | | | |
|---|--------------------|--------------------|--------------------|--|--------------------|-------------------|---------------------------|------------------------------|
| | Entire Sample | Not Ultra Poor | Ultra Poor | Difference (Ultra Poor - Not Ultra Poor) | Not BPL | BPL | Difference (BPL- Not BPL) | Difference (Ultra Poor- BPL) |
| Ranking from PRA | 4.56 (1.39) | 3.75 (1.25) | 5.62 (0.69) | 1.87 (0.144)** | 4.63 (1.45) | 4.50 (1.34) | -0.13 (0.19) | 1.12 (0.10)** |
| Number of household members | 4.29 (1.70) | 4.69 (1.54) | 3.77 (1.77) | -0.91 (0.227)** | 3.65 (1.68) | 4.90 (1.49) | 1.25 (0.218)** | -1.13 (0.16)** |
| Per capita monthly avg. expenditure | 425.65 (229.79) | 405.24 (218.63) | 452.48 (242.27) | 47.24 (31.69) | 586.78 (230.82) | 271.90 (63.06) | -314.88 (22.955)** | 180.58 (15.46)** |
| Per capita monthly food/fuel expenditure | 302.69 (127.68) | 288.99 (111.09) | 320.70 (145.36) | 31.71 (17.568)+ | 385.73 (127.85) | 223.46 (58.62) | -162.27 (13.527)** | 97.24 (10.41)** |
| Per capita monthly non-food expenditure | 122.96 (174.67) | 116.25 (167.28) | 131.78 (184.50) | 15.53 (24.20) | 201.05 (222.25) | 48.44 (36.15) | -152.61 (21.578)** | 83.34 (14.13)** |
| Per Capita monthly avg. expenditure minus institutional medical expenditure | 406.43 (215.21) | 394.01 (208.20) | 422.75 (224.20) | 28.74 (29.77) | 551.18 (223.09) | 268.31 (63.40) | -282.88 (22.252)** | 154.44 (15.20)** |
| Per capita daily avg. expenditure (PPP adjusted 2006) | 1.25 (0.68) | 1.19 (0.64) | 1.33 (0.71) | 0.14 (0.09) | 1.73 (0.68) | 0.80 (0.19) | -0.93 (0.068)** | 0.53 (0.05)** |
| Per capita daily food/fuel expenditure (PPP adjusted 2006) | 0.89 (0.38) | 0.85 (0.33) | 0.95 (0.43) | 0.09 (0.052)+ | 1.14 (0.38) | 0.66 (0.17) | -0.48 (0.040)** | 0.29 (0.03)** |
| Below official poverty line (for rural West Bengal, 2005) | 51.17% (0.50) | 55.37% (0.50) | 45.65% (0.50) | -9.70% (0.07) | | | | |
| Land Holdings (Katthas) | 5.65 (15.49) | 8.49 (19.92) | 1.84 (2.54) | -6.65 (2.126)** | 6.07 (19.74) | 5.25 (10.02) | -0.82 (2.15) | -3.40 (0.90)** |
| Landless | 21.13% (0.41) | 15.70% (0.37) | 28.26% (0.45) | 12.60% (0.056)* | 22.12% (0.42) | 20.18% (0.40) | -1.90% (0.06) | 8.08% (0.05)+ |
| Number of rooms in house | 1.29 (0.52) | 1.40 (0.60) | 1.15 (0.36) | -0.25 (0.071)** | 1.25 (0.48) | 1.33 (0.56) | 0.08 (0.07) | -0.18 (0.05)** |
| Principal component analysis for durable goods and livestock | 1.60 (1.13) | 1.75 (1.22) | 1.42 (0.96) | -0.33 (0.154)* | 1.67 (1.25) | 1.54 (0.99) | -0.13 (0.15) | -0.12 (0.11) |
| Household has outstanding loan | 45.54% (0.50) | 42.98% (0.50) | 48.91% (0.50) | 5.90% (0.07) | 45.19% (0.50) | 45.87% (0.50) | 0.70% (0.07) | 3.04% (0.05) |
| Household has outstanding loan from formal source | 8.45% (0.28) | 12.40% (0.33) | 3.26% (0.18) | -9.10% (0.038)* | 8.65% (0.28) | 8.26% (0.28) | -0.40% (0.04) | -5.00% (0.02)* |
| Self classification of financial situation (1-10 scale) | 2.38 (1.54) | 2.50 (1.55) | 2.21 (1.52) | -0.30 (0.21) | 2.59 (1.69) | 2.17 (1.35) | -0.41 (0.210)+ | 0.03 (0.16) |
| Average years of schooling per household member | 1.24 (1.75) | 1.55 (1.89) | 0.82 (1.46) | -0.73 (0.238)** | 1.29 (1.77) | 1.18 (1.74) | -0.11 (0.24) | -0.36 (0.17)* |
| There is a HH member 5-14 years old not attending school | 23.00% (0.42) | 22.31% (0.42) | 23.91% (0.43) | 1.60% (0.06) | 18.27% (0.39) | 27.52% (0.45) | 9.30% (0.06) | -3.61% (0.05) |
| Regularly eat two meals a day | 66.20% (0.47) | 69.42% (0.46) | 61.96% (0.49) | -7.50% (0.07) | 71.15% (0.46) | 61.47% (0.49) | -9.70% (0.07) | 0.49% (0.05) |
| Household gets BPL rationing | 29.38% (0.46) | 31.93% (0.47) | 26.09% (0.44) | -5.80% (0.06) | 28.16% (0.45) | 30.56% (0.46) | 2.40% (0.06) | -4.51% (0.05) |
| Households has Antodaya card | 10.19% (0.30) | 9.48% (0.29) | 11.11% (0.32) | 1.60% (0.04) | 8.00% (0.27) | 12.26% (0.33) | 4.30% (0.04) | -1.15% (0.04) |
| Received work from employment generating scheme | 49.77% (0.50) | 56.20% (0.50) | 41.30% (0.50) | -14.90% (0.069)* | 45.19% (0.50) | 54.13% (0.50) | 8.90% (0.07) | -12.82% (0.05)* |
| House from Indira Housing Plan | 8.96% (0.29) | 5.00% (0.22) | 14.13% (0.35) | 9.10% (0.039)* | 9.62% (0.30) | 8.33% (0.28) | -1.30% (0.04) | 5.85% (0.03) |
| Receives some form of government aid | 68.54% (0.47) | 71.07% (0.46) | 65.22% (0.48) | -5.90% (0.06) | 64.42% (0.48) | 72.48% (0.45) | 8.10% (0.06) | -7.26% (0.05) |
| Household suffered health shock | 52.58% (0.50) | 55.37% (0.50) | 48.91% (0.50) | -6.50% (0.07) | 57.69% (0.50) | 47.71% (0.50) | -10.00% (0.07) | 1.21% (0.05) |
| Household suffered health shock requiring institutional care | 21.13% (0.41) | 23.14% (0.42) | 18.48% (0.39) | -4.70% (0.06) | 28.85% (0.46) | 13.76% (0.35) | -15.10% (0.055)** | 4.72% (0.04) |
| Household suffered economic shock | 41.31% (0.49) | 40.50% (0.49) | 42.39% (0.50) | 1.90% (0.07) | 42.31% (0.50) | 40.37% (0.49) | -1.90% (0.07) | 2.02% (0.05) |
| HH member with disability(physical or mental) | 22.07% (0.42) | 22.31% (0.42) | 21.74% (0.41) | -0.60% (0.06) | 20.19% (0.40) | 23.85% (0.43) | 3.70% (0.06) | -2.11% (0.05) |
| Adult(15+) female with disability(physical or mental) | 5.16% (0.22) | 2.48% (0.16) | 8.70% (0.28) | 6.20% (0.030)* | 6.73% (0.25) | 3.67% (0.19) | -3.10% (0.03) | 5.03% (0.02)* |
| Adult(15+) male with disability(physical or mental) | 15.96% (0.37) | 16.53% (0.37) | 15.22% (0.36) | -1.30% (0.05) | 13.46% (0.34) | 18.35% (0.39) | 4.90% (0.05) | -3.13% (0.04) |
| Child(<15) with disability(physical or mental) | 3.76% (0.19) | 5.79% (0.23) | 1.09% (0.10) | -4.70% (0.026)+ | 1.92% (0.14) | 5.50% (0.23) | 3.60% (0.03) | -4.42% (0.02)* |
| Able bodied male adult (15+) | 74.18% (0.44) | 87.60% (0.33) | 56.52% (0.50) | -31.10% (0.057)** | 71.15% (0.46) | 77.06% (0.42) | 5.90% (0.06) | -20.54% (0.05)** |
| Able bodied female adult (15+) | 96.24% (0.19) | 96.69% (0.18) | 95.65% (0.21) | -1.00% (0.03) | 93.27% (0.25) | 99.08% (0.10) | 5.80% (0.026)* | -3.43% (0.02)* |

Notes: This table presents means of the variables given in each row for the entire sample, separately for the Ultra Poor and not Ultra Poor. Column 4 indicates the difference in means between the Ultra Poor and not Ultra Poor. Standard deviations are given in parenthesis.

+ significant at 10%; * significant at 5%; ** significant at 1%

Table 2

| Characteristics of recipients of government aid | | | | | | | | | | | | | | |
|---|--|---|--|--|-------------------------------|--------------------------------------|--|--|---|--|---|---|--|--|
| | Per capita monthly avg. expenditure | Per capita monthly food/fuel expenditure | Per capita monthly non-food expenditure | Per Capita monthly avg. expenditure minus institutional medical expenditure | Land Holdings (Katthas) | Number of rooms in house | Regularly eat two meals a day | Self classification of financial situation (1- 10 scale) | Household has outstanding loan | Household has outstanding loan from formal source | Below offical poverty line (for rural West Bengal, 2005) | Principal component analysis for durable goods and livestock | Able bodied male adult (15+) | Able bodied female adult (15+) |
| Household gets BPL rationing | -4.433 (35.44) | 10.389 (19.20) | -14.822 (27.18) | 1.346 (33.22) | -2.543 (2.35) | 0.002 (0.08) | -0.038 (0.07) | -0.11 (0.24) | -0.001 (0.08) | 0.008 (0.04) | 0.006 (0.08) | -0.12 (0.17) | 0.1 (0.07) | 0.007 (0.03) |
| Observations | 211 | 211 | 211 | 211 | 206 | 211 | 211 | 211 | 211 | 211 | 211 | 211 | 211 | 211 |
| R-squared | 0.03 | 0.08 | 0.02 | 0.03 | 0.08 | 0.06 | 0.04 | 0.03 | 0.01 | 0.1 | 0.07 | 0.02 | 0.03 | 0.01 |
| Households has Antodaya card | -18.124 (50.52) | 6.611 (28.74) | -24.735 (38.64) | -12.283 (48.69) | -1.837 (3.59) | -0.082 (0.12) | 0.166 (0.11) | 0.194 (0.36) | -0.154 (0.12) | -0.022 (0.06) | 0.139 (0.11) | 0.147 (0.26) | -0.094 (0.10) | -0.005 (0.05) |
| Observations | 206 | 206 | 206 | 206 | 201 | 206 | 206 | 206 | 206 | 206 | 206 | 206 | 206 | 206 |
| R-squared | 0.05 | 0.09 | 0.03 | 0.04 | 0.07 | 0.06 | 0.05 | 0.03 | 0.02 | 0.09 | 0.08 | 0.02 | 0.02 | 0.01 |
| House from Indira Housing Plan | -40.93 (55.77) | 31.519 (30.18) | -72.448 (42.581)+ | -19.612 (52.34) | -0.786 (3.79) | -0.055 (0.13) | 0.113 (0.11) | 0.251 (0.37) | 0.188 (0.12) | 0.071 (0.06) | -0.032 (0.12) | -0.149 (0.28) | -0.27 (0.106)* | 0.05 (0.05) |
| Observations | 212 | 212 | 212 | 212 | 207 | 212 | 212 | 212 | 212 | 212 | 212 | 212 | 212 | 212 |
| R-squared | 0.04 | 0.09 | 0.03 | 0.03 | 0.08 | 0.06 | 0.04 | 0.03 | 0.02 | 0.09 | 0.07 | 0.02 | 0.05 | 0.02 |
| Received work from employment generating scheme | -34.538 (39.20) | -28.531 (21.19) | -6.007 (30.13) | -34.165 (36.74) | -4.691 (2.609)+ | 0.036 (0.09) | 0 (0.08) | -0.43 (0.26) | 0.08 (0.09) | 0.008 (0.05) | 0.129 (0.08) | 0.198 (0.19) | 0.104 (0.08) | -0.002 (0.03) |
| Observations | 213 | 213 | 213 | 213 | 208 | 213 | 213 | 213 | 213 | 213 | 213 | 213 | 213 | 213 |
| R-squared | 0.04 | 0.09 | 0.02 | 0.04 | 0.09 | 0.06 | 0.04 | 0.04 | 0.01 | 0.09 | 0.08 | 0.03 | 0.03 | 0.01 |

Standard errors in parentheses

+ significant at 10%; * significant at 5%; ** significant at 1%

Notes: Each panel shows a separate set of regressions where the variables in the row panel is taken as the independent variables and the variable indicated in the column is the dependent variable.

Regressions include village dummies

Table 3

| Analysis of PRA process | | | | | | | | | | | | | | |
|---|--|---|--|--|-------------------------------|--|-----------------|--------------------------------|--|--|---|--|---|--|
| | Per capita monthly avg. expenditure | Per capita monthly food/fuel expenditure | Per capita monthly non-food expenditure | Per Capita monthly avg. expenditure minus institutional medical expenditure | Land Holdings (Katthas) | Per Capita Land Holdings (Katthas) | Landless | Number of rooms in house | Regularly eat two meals a day | Self classification of financial situation (1- 10 scale) | Household has outstanding loan | Household has outstanding loan from formal source | Below offical poverty line (for rural West Bengal, 2005) | Principal componen t analysis for durable goods and livestock |
| PRA Rank of Very Poor or Exceptionally Poor | 29.019 (33.44) | 9.724 (18.14) | 19.294 (25.67) | 6.363 (31.40) | -6.279 (2.187)** | -0.988 (0.402)* | 0.032 (0.06) | -0.054 (0.08) | -0.171 (0.068)* | -0.275 (0.22) | 0.083 (0.07) | -0.115 (0.039)** | -0.06 (0.07) | -0.428 (0.163)** |
| Observations | 213 | 213 | 213 | 213 | 208 | 208 | 213 | 213 | 213 | 213 | 213 | 213 | 213 | 213 |
| R-squared | 0.04 | 0.08 | 0.02 | 0.03 | 0.11 | 0.09 | 0.14 | 0.06 | 0.06 | 0.04 | 0.01 | 0.13 | 0.07 | 0.05 |

Standard errors in parentheses

+ significant at 10%; * significant at 5%; ** significant at 1%

Notes: Regressions of various indicators of poverty on a dummy for the household having a PRA status equal to 5 or 6. Each column represents a distinct left hand side variable. Zero-one outcome variables are estimated with a linear probability model.

Regressions include village dummies

Table 4

| Analysis of PRA process conditional on household size | | | | | | | | | | | | | | |
|---|---|---|--|--|-------------------------------|--|------------------|--------------------------------|--|--|---|--|--|---|
| | Per capita monthly avg. expenditure | Per capita monthly food/fuel expenditure | Per capita monthly non-food expenditure | Per Capita monthly avg. expenditure minus institutional medical expenditure | Land Holdings (Katthas) | Per Capita Land Holdings (Katthas) | Landless | Number of rooms in house | Regularly eat two meals a day | Self classification of financial situation (1- 10 scale) | Household has outstanding loan | Household has outstanding loan from formal source | Below official poverty line (for rural West Bengal, 2005) | Principal component analysis for durable goods and livestock |
| PRA Rank of 5 or 6 | 1.43 (32.20) | -4.733 (17.54) | 6.163 (25.60) | -23.06 (29.71) | -5.759 (2.210)** | -1.028 (0.408)* | 0.027 (0.06) | -0.011 (0.08) | -0.165 (0.069)* | -0.288 (0.23) | 0.093 (0.08) | -0.103 (0.039)** | 0.003 (0.07) | -0.258 (0.151)+ |
| Number of household members | -45.739 (9.289)** | -23.969 (5.059)** | -21.77 (7.385)** | -48.78 (8.572)** | 0.928 -0.642 | -0.072 -0.119 | -0.008 -0.017 | 0.072 (0.022)** | 0.01 -0.02 | -0.022 -0.066 | 0.016 -0.022 | 0.019 (0.011)+ | 0.104 (0.020)** | 0.282 (0.044)** |
| Observations | 213 | 213 | 213 | 213 | 208 | 208 | 213 | 213 | 213 | 213 | 213 | 213 | 213 | 213 |
| R-squared | 0.14 | 0.17 | 0.06 | 0.16 | 0.12 | 0.09 | 0.14 | 0.11 | 0.06 | 0.04 | 0.02 | 0.14 | 0.18 | 0.21 |

Standard errors in
parentheses

+ significant at 10%; * significant at 5%; ** significant at 1%

Notes: Regressions of various indicators of poverty on a dummy for the household having a PRA status equal to 5 or 6. Each column represents a distinct left hand side variable. Zero-one outcome variables are estimated with a linear probability model.

Regressions include village dummies

Table 5

| Determinates of PRA rank | | | | | | | | | | |
|--|----------------------|----------------------|----------------------|----------------------|----------------------|----------------------|-----------------------|----------------------|-----------------------|-----------------------|
| Dependent variable: PRA Rank of 5 or 6 | | | | | | | | | | |
| Per capita monthly avg. expenditure | 0.000003 (0.00) | 0.000025 (0.00) | 0.000068 (0.00) | 0.000039 (0.00) | 0.000056 (0.00) | 0.000043 (0.00) | 0.000063 (0.00) | 0.000044 (0.00) | 0.000035 (0.00) | 0.00004 (0.00) |
| Land Holdings (Katthas) | -0.01 (0.002216)* | -0.01 (0.002211)* | -0.01 (0.002207)* | -0.01 (0.002195)* | 0.00 (0.002319)+ | -0.01 (0.002226)* | -0.01 (0.002133)** | -0.01 (0.002203)* | -0.01 (0.002167)** | -0.01 (0.002247)** |
| Number of household members | -0.04 (0.021922)+ | -0.04 (0.021828)+ | -0.04 (0.021383)+ | -0.05 (0.022048)* | -0.03 (0.02) | -0.04 (0.021618)+ | -0.01 (0.02) | -0.04 (0.021664)+ | -0.04 (0.021059)+ | -0.04 (0.021329)+ |
| Adult(15+) male with disability(physical or mental) | | | | | | | | | | 0.12 (0.09) |
| Adult(15+) female with disability(physical or mental) | | | | | | | | | 0.37 (0.142321)** | |
| Able bodied female adult (15+) | | | | | | | | -0.10 (0.17) | | |
| Able bodied male adult (15+) | | | | | | | -0.30 (0.078528)** | | | |
| Receives some form of government aid | | | | | | 0.04 (0.08) | | | | |
| Average years of schooling per household member | | | | | -0.05 (0.019539)* | | | | | |
| There is a HH member 5-14 years old not attending school | | | | 0.16 (0.080472)* | | | | | | |
| Household suffered economic shock | | | -0.06 (0.07) | | | | | | | |
| Household suffered health shock requiring institutional care | | 0.05 (0.08) | | | | | | | | |
| Household suffered health shock | 0.06 (0.07) | | | | | | | | | |
| Observations | 208 | 208 | 208 | 208 | 208 | 208 | 208 | 208 | 208 | 208 |
| R-squared | 0.17 | 0.17 | 0.17 | 0.19 | 0.19 | 0.17 | 0.23 | 0.17 | 0.2 | 0.18 |

Standard errors in parentheses

+ significant at 10%; * significant at 5%; ** significant at 1%

Notes: The table shows a linear probability model specification where the dependent variable is a zero one indicator for having PRA status equal to 5 or 6.

Regressions include village dummies

Table 6

| Analysis of identification process | | | | | | | | | | | | | | |
|------------------------------------|--|---|--|--|-------------------------------|--|-----------------|--------------------------------|--|--|---|--|---|---|
| | Per capita monthly avg. expenditure | Per capita monthly food/fuel expenditure | Per capita monthly non-food expenditure | Per Capita monthly avg. expenditure minus institutional medical expenditure | Land Holdings (Katthas) | Per Capita Land Holdings (Katthas) | Landless | Number of rooms in house | Regularly eat two meals a day | Self classification of financial situation (1- 10 scale) | Household has outstanding loan | Household has outstanding loan from formal source | Below official poverty line (for rural West Bengal, 2005) | Principal component analysis for durable goods and livestock |
| Identified as Ultra Poor | 67.155 (34.216)+ | 35.662 (18.548)+ | 31.493 (26.41) | 43.746 (32.23) | -6.299 (2.262)** | -0.968 (0.416)* | 0.038 (0.06) | -0.219 (0.076)** | -0.133 (0.071)+ | -0.26 (0.23) | 0.105 (0.08) | -0.068 (0.040)+ | -0.115 (0.07) | -0.442 (0.168)** |
| Observations | 213 | 213 | 213 | 213 | 208 | 208 | 213 | 213 | 213 | 213 | 213 | 213 | 213 | 213 |
| R-squared | 0.05 | 0.1 | 0.02 | 0.04 | 0.11 | 0.08 | 0.14 | 0.09 | 0.05 | 0.04 | 0.02 | 0.1 | 0.08 | 0.05 |

Standard errors in parentheses

+ significant at 10%; * significant at 5%; ** significant at 1%

Notes: Regressions of various indicators of poverty on a dummy indicating whether the household was identified as Ultra Poor by Bandhan. Each column represents a distinct left hand side variable. Zero-one outcome variables are estimated with a linear probability model.

Regressions include village dummies

Table 7

Analysis of identification process: Sample restricted to households with PRA rank of 5 or 6

| | Per capita monthly avg. expenditure | Per capita monthly food/fuel expenditure | Per capita monthly non-food expenditure | Per Capita monthly avg. expenditure minus institutional medical expenditure | Land Holdings (Katthas) | Per Capita Land Holdings (Katthas) | Landless | Number of rooms in house | Regularly eat two meals a day | Self classification of financial situation (1- 10 scale) | Household has outstanding loan | Household has outstanding loan from formal source | Below official poverty line (for rural West Bengal, 2005) | Principal component analysis for durable goods and livestock |
|--------------------------------|--|---|--|---|-------------------------------|--|------------------|--------------------------------|--|--|---|--|---|---|
| Panel A | | | | | | | | | | | | | | |
| Identified as Ultra Poor | 59.604 (54.86) | 16.721 (30.31) | 42.884 (42.83) | 40.099 (51.03) | -3.183 (1.176)** | -0.702 (0.336)* | 0.073 (0.11) | -0.382 (0.116)** | 0.007 (0.12) | -0.032 (0.36) | 0.076 (0.12) | 0.032 (0.04) | -0.125 (0.12) | -0.141 (0.25) |
| Observations | 110 | 110 | 110 | 110 | 107 | 107 | 110 | 110 | 110 | 110 | 110 | 110 | 110 | 110 |
| R-squared | 0.08 | 0.09 | 0.05 | 0.06 | 0.1 | 0.07 | 0.13 | 0.13 | 0.07 | 0.05 | 0.03 | 0.05 | 0.09 | 0.05 |
| Panel B | | | | | | | | | | | | | | |
| Identified as Ultra Poor | 42.326 (52.05) | 7.457 (28.86) | 34.869 (42.33) | 19.691 (46.43) | -3.116 (1.192)* | -0.809 (0.331)* | 0.066 (0.11) | -0.358 (0.114)** | 0.008 (0.12) | -0.078 (0.36) | 0.09 (0.12) | 0.035 (0.04) | -0.078 (0.11) | -0.064 (0.23) |
| Number of household members | -43.281 (11.788)** | -23.204 (6.537)** | -20.077 (9.585)* | -51.121 (10.516)** | 0.115 (0.27) | -0.185 (0.075)* | -0.018 (0.02) | 0.058 (0.026)* | 0.001 (0.03) | -0.113 (0.08) | 0.037 (0.03) | 0.009 (0.01) | 0.116 (0.025)** | 0.193 (0.053)** |
| Observations | 110 | 110 | 110 | 110 | 107 | 107 | 110 | 110 | 110 | 110 | 110 | 110 | 110 | 110 |
| R-squared | 0.19 | 0.19 | 0.09 | 0.23 | 0.1 | 0.13 | 0.13 | 0.17 | 0.07 | 0.07 | 0.05 | 0.06 | 0.25 | 0.16 |

Standard errors in parentheses

+ significant at 10%; * significant at 5%; ** significant at 1%

Notes: Regressions of various indicators of poverty on a dummy indicating whether the household was identified as Ultra Poor by Bandhan. Each column represents a distinct left hand side variable. Zero-one outcome variables are estimated with a linear probability model.

Regressions include village dummies

Table 8

Analysis of identification process: Sample restricted to those with less than 15 katthas of land

| | Per capita monthly avg. expenditure | Per capita monthly food/fuel expenditure | Per capita monthly non- food expenditure | Per Capita monthly avg. expenditure minus institutional medical expenditure |
|--------------------------|---|---|---|---|
| Identified as Ultra Poor | 79.334 (33.092)* | 37.638 (19.565)+ | 41.696 (23.963)+ | 56.075 (31.456)+ |
| Observations | 192 | 192 | 192 | 192 |
| R-squared | 0.06 | 0.08 | 0.02 | 0.05 |

Standard errors in parentheses

+ significant at 10%; * significant at 5%; ** significant at 1%

Notes: Regressions of various indicators of poverty on a dummy indicating whether the household was identified as Ultra Poor by Bandhan.

Regressions include village dummies

Table 9

| Differences in dissaggregated components of expenditure | | | | | | | | | |
|--|------------------|------------------|-----------------|----------------|-----------------|-----------------|---|--------------------|--------------------|
| Per capita monthly expenditure on | | | | | | | | | |
| | Cerials | Dairy | Oil | Vegetables | Fruit and Nuts | Egg, Fish, Meat | Other food (sipce, sugar, salt, beverage) | Pan, Tobacco, etc. | Fuel and Light |
| Identified as Ultra Poor | 11.551 (8.76) | -2.167 (1.47) | 5.643 (4.25) | 2.06 (5.67) | 1.294 (1.07) | 4.16 (3.17) | 6.587 (3.314)* | 1.187 (3.87) | 5.068 (1.775)** |
| Observations | 213 | 213 | 213 | 213 | 213 | 213 | 213 | 213 | 213 |
| R-squared | 0.06 | 0.02 | 0.08 | 0.06 | 0.02 | 0.01 | 0.06 | 0.02 | 0.09 |

Standard errors in parentheses
+ significant at 10%; * significant at 5%; ** significant at 1%

Notes: Regressions of various measures of expenditure on a dummy indicating whether the household was identified as Ultra Poor by Bandhan.
Regressions include village dummies

Table 10

| Analysis of identification process conditional on household size | | | | | | | | | | | | | | |
|--|--|---|--|--|-------------------------------|--|----------|--------------------------------|--|--|---|--|--|---|
| | Per capita monthly avg. expenditure | Per capita monthly food/fuel expenditure | Per capita monthly non-food expenditure | Per Capita monthly avg. expenditure minus institutional medical expenditure | Land Holdings (Katthas) | Per Capita Land Holdings (Katthas) | Landless | Number of rooms in house | Regularly eat two meals a day | Self classification of financial situation (1- 10 scale) | Household has outstanding loan | Household has outstanding loan from formal source | Below official poverty line (for rural West Bengal, 2005) | Principal component analysis for durable goods and livestock |
| Identified as Ultra Poor | 35.14 | 19.116 | 16.024 | 9.327 | -5.632 | -1.037 | 0.032 | -0.174 | -0.125 | -0.277 | 0.118 | -0.053 | -0.041 | -0.237 |
| | (33.30) | (18.14) | (26.53) | (30.85) | (2.315)* | (0.427)* | (0.06) | (0.076)* | (0.072)+ | (0.24) | (0.08) | (0.04) | (0.07) | (0.16) |
| Number of household members | -43.799 | -22.637 | -21.162 | -47.088 | 0.851 | -0.088 | -0.008 | 0.062 | 0.011 | -0.023 | 0.019 | 0.022 | 0.102 | 0.281 |
| | (9.319)** | (5.076)** | (7.424)** | (8.635)** | -0.651 | -0.12 | -0.017 | (0.021)** | -0.02 | -0.066 | -0.022 | (0.011)+ | (0.020)* | (0.044)** |
| Observations | 213 | 213 | 213 | 213 | 208 | 208 | 213 | 213 | 213 | 213 | 213 | 213 | 213 | 213 |
| R-squared | 0.14 | 0.18 | 0.06 | 0.16 | 0.11 | 0.09 | 0.14 | 0.13 | 0.05 | 0.04 | 0.02 | 0.12 | 0.18 | 0.21 |

Standard errors in parentheses

+ significant at 10%; * significant at 5%; ** significant at 1%

Notes: Regressions of various indicators of poverty on a dummy indicating whether the household was identified as Ultra Poor by Bandhan. Each column represents a distinct left hand side variable. Zero-one outcome variables are estimated with a linear probability model.

Regressions include village dummies

Table 11

| Determinates of Identification as Ultra Poor | | | | | | | | | | |
|--|--|----------------------|-----------------------|----------------------|----------------------|----------------------|-----------------------|----------------------|----------------------|----------------------|
| | Dependent variable: Identified as Ultra Poor | | | | | | | | | |
| Per capita monthly avg. expenditure | 0.000221 (0.00) | 0.000205 (0.00) | 0.000186 (0.00) | 0.000196 (0.00) | 0.000209 (0.00) | 0.000196 (0.00) | 0.000219 (0.00) | 0.000197 (0.00) | 0.000189 (0.00) | 0.000196 (0.00) |
| Land Holdings (Katthas) | -0.01 (0.002119)** | -0.01 (0.002112)* | -0.01 (0.002110)** | -0.01 (0.002115)* | 0.00 (0.00) | -0.01 (0.002125)* | -0.01 (0.002003)** | -0.01 (0.002104)* | -0.01 (0.002068)* | -0.01 (0.002155)* |
| Number of household members | -0.04 (0.020957)* | -0.05 (0.020853)* | -0.05 (0.020446)* | -0.05 (0.021253)* | -0.04 (0.020237)* | -0.05 (0.020643)* | -0.01 (0.02) | -0.05 (0.020698)* | -0.05 (0.020100)* | -0.05 (0.020449)* |
| Adult(15+) male with disability(physical or mental) | | | | | | | | | | 0.03 (0.09) |
| Adult(15+) female with disability(physical or mental) | | | | | | | | | 0.36 (0.135844)** | |
| Able bodied female adult (15+) | | | | | | | | -0.02 (0.16) | | |
| Able bodied male adult (15+) | | | | | | | -0.34 (0.073758)** | | | |
| Receives some form of government aid | | | | | | 0.03 (0.07) | | | | |
| Average years of schooling per household member | | | | | -0.04 (0.018633)* | | | | | |
| There is a HH member 5-14 years old not attending school | | | | 0.02 (0.08) | | | | | | |
| Household suffered economic shock | | | 0.03 (0.07) | | | | | | | |
| Household suffered health shock requiring institutional care | | -0.02 (0.08) | | | | | | | | |
| Household suffered health shock | -0.04 (0.07) | | | | | | | | | |
| Observations | 208 | 208 | 208 | 208 | 208 | 208 | 208 | 208 | 208 | 208 |
| R-squared | 0.23 | 0.23 | 0.23 | 0.23 | 0.25 | 0.23 | 0.3 | 0.23 | 0.25 | 0.23 |

Standard errors in parentheses

+ significant at 10%; * significant at 5%; ** significant at 1%

Notes: The table shows a linear probability model specification where the dependent variable is a zero one indicator for having been identified as Ultra Poor.

Regressions include village dummies

Table 12

Determinates of Identification as Ultra Poor: Sample restricted to households with PRA rank of 5 or 6

| | Dependent variable: Identified as Ultra Poor | | | | | | | | | |
|--|--|----------------------|----------------------|----------------------|----------------------|----------------------|-----------------------|----------------------|----------------------|----------------------|
| Per capita monthly avg. expenditure | 0.000152 (0.00) | 0.00014 (0.00) | 0.000103 (0.00) | 0.000151 (0.00) | 0.000143 (0.00) | 0.000131 (0.00) | 0.0002 (0.00) | 0.000127 (0.00) | 0.000137 (0.00) | 0.000127 (0.00) |
| Land Holdings (Katthas) | -0.02 (0.007913)* | -0.02 (0.008033)* | -0.02 (0.007889)* | -0.02 (0.007861)* | -0.02 (0.007900)* | -0.02 (0.007971)* | -0.02 (0.007613)** | -0.02 (0.007923)* | -0.02 (0.007875)* | -0.02 (0.007964)* |
| Number of household members | -0.02 (0.02) | -0.02 (0.02) | -0.02 (0.02) | -0.01 (0.02) | -0.02 (0.02) | -0.02 (0.02) | 0.01 (0.02) | -0.02 (0.02) | -0.02 (0.02) | -0.02 (0.02) |
| Adult(15+) male with disability(physical or mental) | | | | | | | | | | -0.01 (0.10) |
| Adult(15+) female with disability(physical or mental) | | | | | | | | | 0.19 (0.14) | |
| Able bodied female adult (15+) | | | | | | | | -0.04 (0.18) | | |
| Able bodied male adult (15+) | | | | | | | -0.26 (0.085608)** | | | |
| Receives some form of government aid | | | | | | 0.03 (0.09) | | | | |
| Average years of schooling per household member | | | | | -0.02 (0.03) | | | | | |
| There is a HH member 5-14 years old not attending school | | | | -0.14 (0.09) | | | | | | |
| Household suffered economic shock | | | 0.07 (0.08) | | | | | | | |
| Household suffered health shock requiring institutional care | | -0.04 (0.10) | | | | | | | | |
| Household suffered health shock | -0.04 (0.08) | | | | | | | | | |
| Observations | 107 | 107 | 107 | 107 | 107 | 107 | 107 | 107 | 107 | 107 |
| R-squared | 0.21 | 0.21 | 0.21 | 0.23 | 0.21 | 0.21 | 0.28 | 0.21 | 0.22 | 0.21 |

Standard errors in parentheses

+ significant at 10%; * significant at 5%; ** significant at 1%

Notes: The table shows a linear probability model specification where the dependent variable is a zero one indicator for having been identified as Ultra Poor.

Regressions include village dummies

Table 13

| How many were "left out" of the Ultra Poor group? | | | | | |
|--|---|---|---|--|---|
| Village | Total not identified as Ultra Poor | Of those not identified as Ultra Poor: | | | |
| | | Total with less food&fuel expenditure than median identified household in that village | Total with less total expenditure than median identified household in that village | Total with less land than median identified household in that village | Total with less in terms of all 3 categories |
| Balarampur | 11 | 7 | 7 | 5 | 4 |
| Binkar | 24 | 15 | 16 | 14 | 7 |
| Chardiar | 33 | 18 | 13 | 7 | 2 |
| Charsungai | 30 | 20 | 14 | 10 | 6 |
| Khidirpur | 23 | 14 | 17 | 11 | 6 |
| Entire sample | 121 | 74 | 67 | 47 | 25 |