

Community Networks and Poverty Reduction Programmes

Evidence from Bangladesh

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Introduction

- ▶ "Ultra poor" often bypassed by microfinance - to benefit from a loan you need to know what to do with it. [Murdoch 1998, Baland et al 2008, Grameen Bank 2009]
- ▶ In recent years, increase in number of NGO and government programmes targeting the "ultra poor", pioneered by BRAC
 - ▶ replicated at various countries (Haiti, Honduras, India, Pakistan, Peru, Ethiopia and Yemen.)
 - ▶ in Bangladesh alone 860,300 households to be targeted by 2011
- ▶ Such programmes involve a "large" asset transfer, accompanied with enterprise training and empowerment
 - ▶ Average targeted ultra-poor HH in our sample receives an asset worth 9958 TKs (\$145) - twice the mean value of ultra-poor assets at baseline, 24% of median assets in the community

Research Questions

- ▶ What are the direct effects of the programme on the targeted ultra poor and the composition of their networks?
- ▶ What are the spillover effects on the others in the community? Such a large transfer to the poorest is likely to affect the others
- ▶ Do these effects vary by the type of connection to the treated? Spillover effects on those connected to the ultra poor are likely to be different from those who are not connected

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- ▶ *Methodology:*
 - ▶ Full census of all the households in the village: observe universe of households directly and indirectly affected
 - ▶ Full map of social and economic networks, allowing us to identify:
 - ▶ ultra poor - "treated"
 - ▶ noneligible HHs who were connected to the treated - "indirectly treated", and the type of connection
 - ▶ noneligible HHs who were *not* connected to the treated

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- ▶ STUP (Specially Targeted Ultra Poor):
 - ▶ asset transfer 6000-12000 Takas (\$87-173) (e.g. 2 cows, 1 cow 2 goats, 1 cow 10 poultry, 5 goats)
 - ▶ enterprise training
 - ▶ subsistence allowance (Tk 15 per day)
 - ▶ health subsidy
 - ▶ social development support (training in rights & justice)
 - ▶ At the end of 2nd year: invitation to microfinance
- ▶ Village Elite Committees (GDBC)

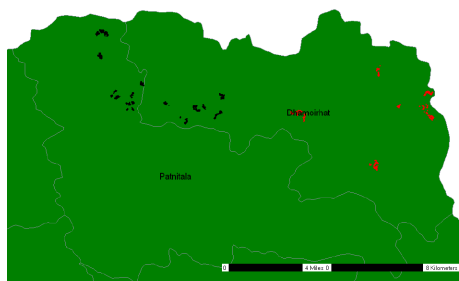
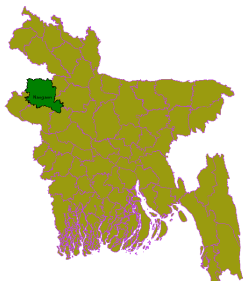
Identifying the "Ultra Poor"

- ▶ Identify area (BRAC Centre)
- ▶ Identify "spot" (BRAC branch office)
- ▶ Participatory wealth ranking (1 (richest) - 5 (poorest))
 - ▶ wealth rank 5 "community-selected ultra poor"
 - ▶ everyone in wealth rank 5 is included in a "primary selection survey"
 - ▶ further examination to verify exclusion/inclusion criteria
- ▶ Final selection

Identifying the "Ultra Poor"

- ▶ Exclusion criteria (all binding)
 - ▶ Household is borrowing from a micro-credit providing NGO
 - ▶ Household is recipient of government development program (e.g. poverty cards)
 - ▶ There is no adult woman in the household who is physically able
- ▶ Inclusion criteria (need to satisfy at least 3)
 - ▶ Total land owned including homestead is not more than 10 decimals
 - ▶ No adult male income earner in the household
 - ▶ Adult women in the household work outside the homestead
 - ▶ School going-aged children have to work
 - ▶ Household has no productive assets

Methodology



- ▶ Large scale randomized evaluation of the program underway
- ▶ This paper - census of everyone in the two branch offices in Naogaon - 1 treatment (black), 1 control (red) branch

Data

- ▶ 22 spots, 1620 households in treatment; 13 spots, 923 households in control
- ▶ Baseline survey 2007, annual followup surveys until 2011
- ▶ In addition to standard data on wealth and welfare we collect data on
 - ▶ which households they interact with, in each of the surveyed activities
 - ▶ family ties
 - ▶ market transactions - labour, land and other assets' sale and rental, credit
 - ▶ informal insurance - transfers in cash/kind (food, crisis-coping, other transfers)
 - ▶ socio-economic empowerment: aspirations, expectations, attitudes towards others and others' attitudes towards the household

Ultra-poor HHs at baseline, compared to HHs in higher wealth ranks

- ▶ are more likely to be female-headed: 45% for ultra-poor, 15% for other WR5, close to 0% for all others
- ▶ have lower human capital: literacy rate is 9% among ultra-poor (26% among other WR5 and 55% in top class); BMI of the leading female in the HH is 18.6 among ultra-poor, increasing by wealth up to 20.9 in top class
- ▶ have lower pce: ultra-poor's pce is 60% of middle class and 25% of upper class on average
- ▶ have lower wealth: value of HH durables of ultra-poor is 23% of middle class and 6% of top; value of business assets of the ultra-poor is 2.4% and .03% of middle and top classes respectively
- ▶ have different occupational structure than other wealth classes
 - ▶ spend more time as wage-workers outside the house (maid and agricultural day-labor)
 - ▶ devote much less time to livestock rearing (382 annual hrs among ultra-poor, 815 in middle class and 847 in top class)

Table 3: Proportion of HHs Connected to STUPs at Baseline

	Family Network	Market Network	Informal Insurance Network	Transfers to STUP	Receives Transfer from STUP	N
Everyone	.151 (.358)	.024 (.152)	.246 (.431)	.217 (.458)	.165 (.371)	2159
Among STUPs	.220 (.416)	0 (0)	.382 (.487)	.296 (.458)	.317 (.467)	186
Other WR5	.200 (.400)	.005 (.073)	.286 (.452)	.240 (.428)	.210 (.408)	371
WR4	.191 (.393)	.007 (.081)	.232 (.423)	.241 (.428)	.198 (.399)	602
WR3	.128 (.334)	.013 (.114)	.232 (.423)	.217 (.413)	.133 (.340)	392
WR2	.117 (.322)	.013 (.114)	.182 (.387)	.170 (.376)	.101 (.302)	307
WR1	.033 (.180)	.120 (.325)	.166 (.373)	.143 (.351)	.057 (.231)	301

Direct Effects on the Treated Ultra-Poor

Identification: Difference in Difference between selected ultra-poor HHs in treatment spots and control spots, at baseline and followup

- ▶ Outcomes directly affected by the programme: 5-fold increase in value of business assets, 6-fold in savings - ultra-poor HHs surpass average HH in WR4 in terms of assets
- ▶ Time devoted to livestock rearing increases by 1.5 times, to day-labour and maid decreases by 1.3 and 2 times respectively. Increase in HH chores (30%) and total time devoted to work (7%).
- ▶ Income of respondent doubles when we account for the stipend.
- ▶ 10% increase in pce, though imprecisely estimated, coming from non-food expenditure. Increase in number of HH durables (radio and bicycle)
- ▶ Improved human capital - BMI by 1.07, children's z-scores by .72
- ▶ Self-reported business skills for tasks that do not involve a third party improve by 20%, for tasks that involve others by $\sim 10\%$

Direct Effects on Social Networks

$$m_{j1} = \alpha^1 + \beta^1 T_j + \gamma^1 X_j + \epsilon_j \text{ if } m_{j0} = 1$$

$$m_{j1} = \alpha^2 + \beta^2 T_j + \gamma^2 X_j + \kappa_j \text{ if } m_{j0} = 0$$

- ▶ $m_{j1} = 1$ if household j is connected to at least 1 STUP at followup, 0 otherwise
- ▶ $m_{j0} = 1$ if household j is connected to at least 1 STUP at baseline, 0 otherwise
- ▶ T_j treatment branch
- ▶ X_j controls

Market network - no impact on average, but upper classes more likely to remain connected and make new connections to STUPs

Informal Insurance network - becomes larger. Ultra-poor are less likely to remain in network whereas class 3 are more likely. New ultra-poor and classes 4&5 are more likely to enter network

Table 7: Direct Effects on The Composition of STUP's Networks

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
	Market	Market	Market	Market	Insurance	Insurance	Insurance	Insurance
treat	0.147 (0.145)	0.006 (0.008)	0.024 (0.371)	-0.005 (0.010)	0.041 (0.044)	0.040*** (0.014)	-0.203*** (0.071)	0.261*** (0.051)
WR5			-0.042 (0.176)	0.002 (0.013)			0.032 (0.082)	0.092*** (0.030)
WR4			-0.764*** (0.195)	-0.009 (0.010)			-0.042 (0.066)	0.059** (0.025)
WR3			0.188 (0.325)	0.029 (0.019)			0.216* (0.123)	-0.038 (0.037)
WR2			0.024 (0.371)	0.012 (0.023)			-0.027 (0.117)	0.012 (0.036)
WR1			0.384*** (0.125)	0.078** (0.039)			0.086 (0.138)	-0.048 (0.032)
N	54	2105	54	2105	532	1627	532	1627
Baseline Connected	YES	NO	YES	NO	YES	NO	YES	NO

Indirect Effects of the Programme

- ▶ We analyze indirect effects on similar outcome variables for HHs that are (at baseline and followup)
 - ▶ in the family network of STUPs
 - ▶ in the informal insurance network of STUPs
 - ▶ have no connection to the STUPs
- ▶ We do not look at the indirect effects on the market network, as only 13 HHs are in this network both at baseline and followup
- ▶ Five findings are of note:
 - 1.** Neither connected nor unconnected HHs experience an increase in outcomes directly affected by the programme - business assets and savings.

2. The programme effects time-use of connected HHs: members of both family and insurance networks increase time devoted to HH chores at expense of leisure, the magnitude of the effect is comparable to same effect for the ultra-poor - about 400 hours per year

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5. Programme has no discernible impact on outcomes of non-connected HHs, ruling out any common trends that may be driving the findings for connected HHs.

- ▶ Difference between family and informal insurance networks is consistent with them having different functions:
 - ▶ family engages in wealth redistribution, affected by permanent increase in wealth (either by direct transfer from STUPs or reduction in transfers to STUPs)
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- ▶ These are only indicative, further work on different functions of these networks is underway

Conclusion

- ▶ Methodology - combining RCT evaluation with a full census in treatment and control locations, mapping entire social networks
- ▶ Programme transforms economic lives of the beneficiaries, composition of their social network, and selected outcomes of their network members
- ▶ As they exogenously become wealthier, beneficiaries establish connections with HHs in wealthier classes
- ▶ Spillover effects - distinction between HHs socially connected to beneficiaries and those that are not is crucial
- ▶ Spillovers are heterogenous by network type, indicating that family network shares wealth whereas informal insurance network shares information on business skills

Future Work

- ▶ Using data from future survey rounds, test if these short-run effects get smaller or larger in the long-run
- ▶ Identify the mechanisms behind the heterogenous spillover effects by network type
 - ▶ transfers to/from family network
 - ▶ information sharing with informal insurance network
- ▶ General equilibrium effects - prices