Priority-Based Multidimensional Poverty

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What the Paper is about

- Proposes a new methodology of multidimensional poverty measurement based on self-stated responses to household spending priorities.
- Reveals the “relevant” deprivations.
- The stated top priorities permit identification of the poor in the context of their needs.
- Aggregates deprivations according to relative weights computed from data on priorities.
- Advantages: (1) eliminate ‘Command’ variables in favour of ‘Intrinsic’ wellbeing variables (2) deals with needs heterogeneity, (3) avoids arbitrariness of multidimensional poverty indices.
- Proposes an empirical application to Seychelles.

Discussion in Paper

- Criticizes MPI's (see Chakravarty and Bourguignon (2003), Alkire and Foster (2009), Alkire and Santos (2010) and Belhadj (2012)) for missing "relevant" deprivations because the deprivation indicators used are not well in phase with the actual needs as felt by the households themselves.
- Criticizes MPI's for arbitrariness in terms of choices of dimensions, weights, command vs needs variables, ignored needs heterogeneity (basic versus higher level needs) etc.
- Considers the notion of hierarchical needs (needs for democracy, civil society only make sense when minimal needs for "survival" have been met) and proposes measures which focus on basic as opposed to higher needs (the basic needs based approach).
- Distinguishing degrees of needs is useful because facilitates the definition of a target population for poverty alleviation policies using limited information, makes policy design easier under budget restrictions and increasing returns to scale in production of social services and permits two-stage budgeting under weak separability of the social objective.

The New Method.

- The data on spending priorities come from the sole survey question: “To what would you spend a small additional sum of money?”. (Note, this question could be framed many ways eliciting quite different responses, the paper examines one option among many possibilities).

Poverty Axioms should obey the following features

- The complete set of relevant wellbeing attributes under consideration must be defined. Already at this stage, using information on priorities can play a role. For example, one may restrict the attention to the attributes that have been stated as a priority by at least one person.
- The 'technical' axioms, for continuity, derivability, normalization, population scale invariance, etc. (Not discussed in this paper)
- One should use less information for identifying the poor than quantifying total poverty quantity. (e.g. consider a subset of 'priority' wellbeing attributes for identifying the poor, and a larger set for quantifying total poverty. (a type of partial focus axioms that can be applied to three levels: poverty incidence, poverty intensity or global multidimensional poverty)
- Some axioms should restrict how many of the individual deprivations on the selected attributes can be gathered to form individual poverty scores.
- Decomposition axioms can be used for guiding the aggregation of individual poverty scores.

The Measure.

- The m x n matrix D of deprivations is defined by its row-vectors d_i , i = 1,..,n. The element d_{ij}, the level of wellbeing deprivation in dimension j suffered by individual i.
- The j^{th} column of D describes the sample distribution of the j^{th} deprivation attribute and is denoted d^j. A '*meagre attribute*' j for individual i is defined by $d_{ij} > 0$, a 'non-meagre attribute' by $d_{ij} = 0$.
- Define the poor from a Union criterion carried out only for a subset of wellbeing attributes determined by and for each individual.
- The quantity of poverty suffered by the poor is separately specified using all the welfare attributes, in a fashion disconnected with the Union criterion.
- rule for identifying the poor is the Union rule *defined on the highest stated priority dimensions*. An estimated threshold is used to define the highest priority dimensions.

The Formula for the multidimensional poverty indicator, MP

- $I_{ij} = I_{[dij > 0]}$ and PR_i is the set of priorities retained for individual i. This latter case corresponds to the Union approach based on the aggregated household priorities and aggregated to the whole population. where w_j is the 'priority' weight allocated to attribute j chosen to equal to the proportion of monetary poor households who stated j as their first priority.
- $IM = 1/n \ \sum_i \ \{1 - \Pi_{\{j \text{ in } PRi\}} (1 - I_{ij})\}$ [the proportion of the population not satisfying at least one of their priorities] (no formal definition of $\Pi_{\{j \text{ in } PRi\}}$)
- $MP = 1/n \ \sum_i \ [\{ 1 - \Pi_{\{j \text{ in } PRi\}} (1 - I_{ij})\}\{\sum_j \ w_j \ I_{ij} \}]$,
- MP is generated by first computing at individual level the sum of all deprivation indices over all dimensions, weighted by the aggregate priority weights for every dimension. Then, the obtained individual score is multiplied by the dummy variable identifying the multidimensional poor, accounting for priorities in the design of the corresponding Union criterion. Finally, the results are summed over all individuals and divided by the population size.

Application (Based on the Seychelles)

- Designed the 2011 Living Conditions Survey (LCS), conducted in collaboration with the National Bureau of Statistics, provides information on basic needs for a large set of welfare dimensions (Muller, 2013).
- N = 1,125 households randomly selected for the 2006/07 Household Budget Survey re-surveyed from February to June 2011.
- Used answers on spending priorities.
- 1/3rd of households have some difficulty to obtain daily food (5 % considerable difficulty). 7 % of households admit to wear worn clothes and (10 % do not have adequate clothing for outing. 15 % of persons have stated health problems in the last twelve months (47 % for the elderlies).
- 7 % of households admit to electricity disconnection because of payment failures in past 12 months. 11 % not able to pay electricity in time.
- 10 % of the households state that they could not afford paying their water bill and slightly less than 5 % that they suffered water disconnection.

Priorities of the Monetary Poor and the Whole population

	Monetary Poor	Whole Population
Food	**12.20 (3)**	**14.08 (2)**
Water/Electricity bill	9.06 (5)	7.50 (5t)
Household appliances	5.57 (7)	4.21 (8)
Health	6.97 (6)	7.50 (5t)
Shelter	**34.49 (1)**	**32.37 (1)**
Uniforms/Shoes/School necessities	1.39	1.32
Private school	0.35	0.26
Clothing	0.35	0.26
Transportation	1.05	1.05
Debt repayment	9.76 (4)	11.05 (4)
Set aside for worst times	13.94 (2)	13.95 (3)
Don't know	0.35	0.13
Holiday	1.05	1.13
Other	3.48 (8)	5.13 (7)

Education of Head	Amount of Multidimensional Poverty	Incidence of Multidimensional Poverty	Incidence of Monetary Poverty
No Schooling	1.8	6.9	33.0
Primary	3.8	8.3	20.7
Secondary	4.0	10.0	14.1
Vocational/ Polytechnic	3.1	5.8	12.0
University (&pre)	2.7	6.5	0.0
Whole Country	3.6	8.1	17.0

Findings

- From LDV analysis expected # of household deprivations is around 2.
- At individual level, multidimensional poverty amount and multidimensional poverty incidence are highly correlated, while not with traditional Union or Intersection indicators
- Multidimensional poverty in Seychelles dominated by deprivations in shelter and in food (7%)
- 8.1 % of households are multi-dimensionally poor (12 % monetary poor households)
- As opposed to what results from monetary poverty, education is relatively weakly correlated with multidimensional poverty (consequence of policy of free accommodation for the low-educated)
- Coverage of the monetary poor by social welfare is dramatically low (15%); slightly better with multidimensional poor (22 %)
- Leakage of social benefits to the non-poor is huge: 85 %

Discussion.

- Appropriateness of the question.
- Characteristics of the household-household sharing rules.
- WRT Priorities of the Monetary Poor and the whole population, ranks (and proportions) are very close ??=> Homothetic preferences?? In which case we can rationalise the dimensions a great deal.
- WRT Poverty by head of household note diminution as dimensions increase. General problem -> empty space theory.