

## "Does Monetary Poverty Capture All Aspects of Poverty? Results from 119 Countries"

by Jed Friedman, Francisco Ferreira, Maria Ana Lugo, Daniel Mahler, Minh Cong Nguyen and Dhiraj Sharma

Sabina Alkire, OPHI, University of Oxford, 7 November 2019

Tabita, Kenya

Rabiya, India

Stéphanie, Madagascar

Agathe, Madagascar

Dalma, Kenya

Ann-Sophie, Kenya

Valérie, Madagascar



# Nice!

- Clearly written landmark study.
- Pioneering: systematically cross \$1.90 with other indicators. First paper to do this at scale, quality.
- New tables – Table 4, Table 8
- Illuminating rural-urban, hh comp. disaggregation
- Huge amount of work and huge addition to the literature and understanding.

## Base Methodology: one concern

Paper *changes* weights of indicators in hh which lack children or which have a missing indicator, then *re-weights* other indicators up to dimensional weight.

Why? to reduce sample drop; improve retained sample

Unadmitted: This destroys dimensional breakdown.

Unknown: How often does this happen?

# Base Methodology: one concern

	\$	Enrol	Attain	Water	Sanit	Elect	Score
Ana	1	0	1	0	1	0	
Baba	1	.	1	0	1	0	
Cai	1	0	1	.	1	0	

Consider 3 persons who are each deprived in money, educational attainment, and sanitation only, but

**Ana has all six indicators**

**Baba does not have a school-aged child**

**Cai is missing data on water**

# Base Methodology: one concern

	\$	Enrol	Attain	Water	Sanit	Elect	Score
Ana	1/3	0	1/6	0	1/9	0	11/18
Baba	1/3	.	<u>1/3</u>	0	1/9	0	<b>14/18</b>
Cai	1/3	0	1/6	.	<u>1/6</u>	0	<b>12/18</b>
	100%	0%	100%	<b>0%</b>	100%	0	

So the weights change for Baba and Cai – other indicators are reweighted

The 3 are deprived in the same indicators, but their deprivation scores are different.

# Base Methodology: one concern

	\$	Enrol	Attain	Water	Sanit	Elect	Score
Ana	1/3	0	1/6	0	1/9	0	11/18
Baba	1/3	.	<u>1/3</u>	0	1/9	0	14/18
Cai	1/3	0	1/6	.	<u>1/6</u>	0	12/18
Cens Hj	100%	0%	100%	0%	100%	0	

**Dimensional Breakdown: Adjusted Headcount Ratio  $M_0$**   
is the weighted sum of the censored headcount ratios  
 $= (1/3)* 100\% + (1/6)*100\% + (1/9)*100\% = 11/18 = \underline{0.61}$

Equivalently, the Adjusted Headcount Ratio is the mean  
of the vector of deprivation scores:  
 $= 1/3*(11/18 + 14/18 + 12/18) = \underline{0.68}$  **NOT THE SAME**

# Base Methodology: one concern

Paper *changes* weights of indicators in hh which lack children or which have a missing indicator, then *re-weights* other indicators up to dimensional weight.

Why? to reduce sample drop; improve retained sample

Unadmitted: This destroys dimensional breakdown.

**Option 1:** report # of observations treated thus & explore the issue and justify dimensional breakdown if small.

**Option 2:** a) mark hh without children non-deprived in enrolment; b) usually drop hh missing indicators (bias  $\checkmark$ )

## Overlaps: one concern

The Venn Diagrammes create a union-based subindex for each 'dimension'. E.g. a person is deprived in infrastructure if they are deprived in 1, 2, or all 3 infrastructure indicators.

This is a useful, but very crude summary of material. The joint distributions are by indicator not dimension. But no information is provided about indicator pairs.

It seems essential to add a new table on matches/  
redundancy using from pairwise deprivation cross-tabs

# Redundancy: The % of possible matches between a pair of deprivations that occur (the % of matches / minimum h<sub>i</sub>)

## Average Deprivation in Pair-wise Indicators across 101 Developing Countries

Population deprived in each indicator		Years of schooling	School attendance	Child Mortality	Nutrition	Electricity	Sanitation	Drinking Water	Floor	Cooking Fuel
		14%	14%	17%	27%	22%	40%	26%	27%	53%
Percentage population simultaneously deprived in the column and row indicators										
Years of schooling	14%									
School attendance	14%	5%								
Child Mortality	17%	4%	5%							
Nutrition	27%	5%	6%	7%						
Electricity	22%	8%	7%	8%	9%					
Sanitation	40%	10%	10%	11%	15%	19%				
Drinking Water	26%	5%	5%	5%	8%	10%	13%			
Floor	27%	8%	8%	9%	12%	17%	22%	9%		
Cooking Fuel	53%	12%	12%	14%	19%	21%	33%	19%	25%	
Assets	23%	8%	7%	7%	10%	14%	19%	8%	16%	21%

Source: Own calculations using the proportion of pairwise simultaneous deprivation by country and multiplying this by the country population. Then population suffering each pairwise deprivation was obtained among 101 countries. The proportion expressed in this table has the 5.2 billion population of countries in 2011 as a denominator.

# On Measurement: Headcount Ratio

Paper profiles H without a justification.

**Requires justification:** such as

Most common: easy to understand

Can compare multi. H to \$1.90/day H.

But using H vs  $M_0$  loses things of note:

Dimensional breakdown: lost with H

Leaving No One Behind: patterns differ

(India paper here) – H far less sensitive

# On Measurement: H & M & D

As paper explains, D differs two ways:

- a) different identification (union vs 33%)
- b) D reflects inequality among the poor

Possible: AF 2019: M-Gamma class (*tomorrow*)

- a) same identification(s) (union, 33.33%)
- b) compare value of D to linked M

Suggestion: use 2+ poverty lines—global MPI tables report union, 20%, 33%, 40%, & 50%

# Little suggestions

- List countries
- Check Fig 5 (hh composition) – labels error?
- Define ‘limited’ sanitation/water categories
- Report intensity of deprivations among poor (A)
- Report censored headcount ratios (poor & deprived)
- Provide 3 decimals on MPI (as is done for H)
- **Words:** (identified as) **poor vs deprived** (in indicator)
- Report confidence intervals/standard errors
- Provide online country tables with full details (multiple poverty cutoffs; all indicator details, SEs)
- Post country syntax for replication & research

# Easy Illuminating Next Steps

- **Consumption vs Income:** look at overlaps of monetary/non-monetary by countries using each?
- 1.4% of all people are *only* monetary poor. Who are they? (hh size, gap) Is this income/consumption?
- Does big **poverty gap** => higher **intensity** of  $M_0$ ?
- Show **HH size** for monetary, multidimensional
- **Age disaggregation** to profile child poverty
- For each indicator report number of overlaps (OPHI team posters – deprived only in  $x, x+1, x+2, x+3\dots$

# Ambitious Next Steps

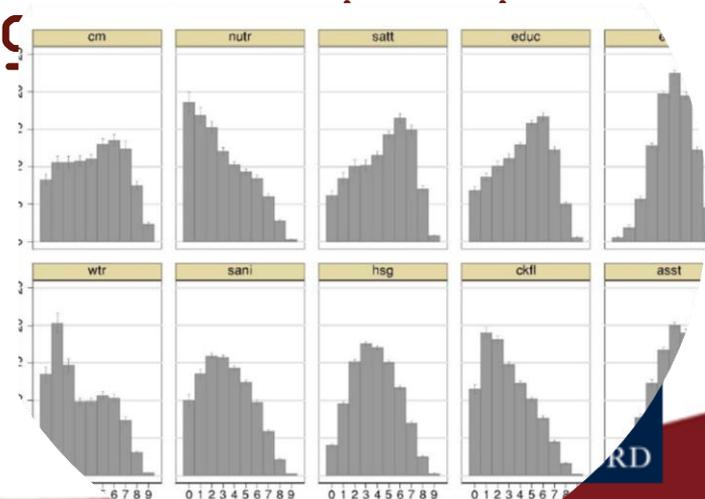
- **Conduct Robustness tests to parameters**
  - Pairwise comparisons (changing weights, cutoffs)
  - Sets of the poor (Identification/targeting)
    - See OPHI team's 2 **posters** on 231 weights and all poverty cutoffs, including for subnational regions

Note: OPHI's stata programmes public in Dec 19
- **Analyse global MPI and this measure**
  - Triangulate 5 shared indicators (*data quality, total error*)
  - Analyse differences in levels and trends by country.  
(This paper replaces **health** dimension with **\$1.90**, and has 3 of the 6 MPI living standard indicators).

# Example: Robustness (poster session)

Overall, 95.1% of MPI pairwise comparisons across countries are robust for poverty lines 20% to 50% considering standard errors  
In Sub-Saharan Africa, it's 95.6%; in South Asia and Arab States, 94.4%.

Overall, 89.7% of MPI pairwise comparisons across countries are robust for weights 25% to 50% per dimension, considering errors



The bars to the right show the share of people who are only deprived in each indicator, vs deprived in that indicator plus one, two, three, up to 9 others.

# Ambitious Next Steps

- **Recall: a multidimensional poverty measure** uses each household's response to code that household as deprived or non-deprived in that indicator. For that reason, indicators with short recall periods are avoided.
- **Probe household consumption aggregate accuracy for joint distribution of deprivation studies:**
  - Is monetary poverty status accurate at hh level?
  - What proportion of poor persons' consumption aggregate draws on 7-day recall questions? 30? 365?
  - Does this proportion vary for non-poor persons?
  - Re-analyse quarterly surveys, diaries & panel data to probe spurious volatility of different indicators.