Multidimensional Poverty: One Aim, Three Approaches, Quite a Few Different Results

IARIW-WORLD BANK CONFERENCE: NEW APPROACHES TO DEFINING AND MEASURING POVERTY IN A GROWING WORLD

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POVERTY, IN ALL ITS DIMENSIONS

• idea of poverty as a multidimensional concept – early acceptance, evolutions over time

• Numerous empirical applications in the previous decade
  • Internationally comparable (e.g. Human Development Report)
  • National, specialised
  • Sub-national

• Shifting understandings and purposes of MD poverty studies
  • National poverty reduction strategies
  • Policies and programming
  • Millennium Development Goals
  • Sustainable Development Goals
Three approaches to measuring multidimensional poverty

We expand upon three of the most current and relevant approaches to measuring multidimensional poverty:

- Consensual deprivation method
- Multidimensional Poverty Index (MPI)
- Multiple Overlapping Deprivation Analysis (MODA)

Perspective of their use as tools for measuring children’s poverty and deprivation.

Comparisons on the basis of headcount rate (H%) of children identified as multidimensionally poor, for ease of interpretation and comparability.
Purpose of research

- Provide a state of affairs of the most commonly used and relevant measures for estimating multidimensional poverty - esp. for children
- Disentangle the main drivers of differences in poverty headcount rates among the three measures
- Clear up common misconceptions in the merit of each measure for research, policymaking and programming purposes

→ On the basis of critical review and comparative estimates, explain how these measures lead to varying results, and the implications thereof for research and policymaking.
Approach

1. Systematic comparisons & literature review of the three measurement tools on the basis of their theoretical frameworks and empirical application
   - Theoretical underpinnings
   - Unit of analysis
   - Aggregation and weighting
   - Estimations and implications thereof

2. Empirical analyses comparing preliminary estimations of multidimensional deprivation headcount rate (%) of each approach, on the basis of common parameters of analysis/input indicators
Example:
Child Poverty and deprivation in UGANDA

What % of children are multidimensionally poor in Uganda?
Using the consensual method, 56% of children age 0-17 years are considered multidimensionally deprived, experiencing a low standard of living.

Data: 2016/17 Uganda National Household Survey (UNHS), 2016 Uganda Demographic and Health Survey (UDHS)

According to the Global MPI, disaggregated by age group, 60% of children age 0-17 years are considered multidimensionally poor and living in multidimensionally poor households.

Data: 2016 Uganda Demographic and Health Survey (UDHS)

“SSA-MODA” approach for Uganda

Using a cross-country, Sub-Saharan Africa MODA approach,

64% of children age 0-17 years are counted as multidimensionally deprived, with a threshold of at least 3 dimensions.

Data: 2016 Uganda Demographic and Health Survey (UDHS)
## Multidimensional poverty headcount rate ($H, \%$) of children age 0-17 years in Uganda

<table>
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<tr>
<th>Measure</th>
<th>$k$</th>
<th>$H (%)$</th>
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<td>Consensual method (UNICEF, 2019)</td>
<td>33% (6 out of 18 indicators)</td>
<td>56.0%</td>
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<td>33%</td>
<td>59.7%</td>
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<td>SSA-MODA (UNICEF, forthcoming)</td>
<td>$\geq 3$ out of 6-7 dimensions</td>
<td>63.9%</td>
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What accounts for these differences in the multidimensional poverty headcount rates?
1. Unit of Analysis

- Unit of analysis vs. unit of measurement
- Consensual method: individuals, i.e. children
- MODA: individuals, i.e. children
- Global MPI: individuals living in households
  - Individuals are considered MPI-poor if they live in MPI-poor households
# Multidimensional poverty headcount rate (H, %) of children age 0-17 years in Uganda

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<td>Child-MPI*</td>
<td>20%</td>
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* Based on the methodology of C-MPI for Thailand, Bhutan and Rwanda (OPHI, 2017; OPHI, 2019; NISR, 2018)
2. Conceptual Framework

- Central in the 3 approaches is the concept of deprivation and how they are defined
- The theoretical underpinnings of each of these measures is different.
- Important implications for the conceptualisation of definition of poverty and deprivation.
- Different conceptualisations of poverty and deprivation → different approaches to measurement and sourcing of indicators
2. Conceptual Framework

**Consensual Deprivation**
- Relative poverty theory (Townsend 1979)
- Basic needs approach (Gordon & Pantazis, 1997)

**Multidimensional Poverty Index (MPI)**
- Capability approach; basic needs (Alkire, 2007; Sen, 2001; Sen & Foster, 1997)

**Multiple Overlapping Deprivation Analysis (MODA)**
- Rights-based approach; existing legal convention; life-cycle approach (de Neubourg, Chai, de Milliano, Plavgo et al., 2013; UN General Assembly, 1989, 2015);
- Medium between capability and consensus, esp. in national studies
3. Selection of dimensions and indicators

On the basis of the conceptual framework

• Consensual method – *(UGA: 18 indicators)*
  • Only deprivation indicators representing items and activities deemed to be affordable necessities of life, by a majority of the sampled population, are included

• MPI *(UGA C-MPI: 5 dimensions, 9 indicators)*
  • Deprivation indicators defined in terms of essential capabilities and functionings that enable individuals the freedom to live a good life, or one they have reason to value

• MODA *(UGA N-MODA: 6-7 dimensions, 18 indicators)*
  • Deprivation indicators represent unfulfilled children’s rights
3. Dimension and indicator selection

Example: Education dimension (child-level)

- **Consensual method – is schooling necessary?**
  - Child considered deprived in an education-related indicator (e.g. “all school fees, correct uniform, school equipment”) if the majority of the population sample decides that this indicator is a *necessity of life, and individuals do not have and cannot afford it** (34%)
  - If does not fit criteria, not included

- **MPI* - is child at school?**
  - Single education indicator: Child of school age *does not attend school*, based on global, national MPI and child MPI studies (14%)

- **MODA* - is child at school and learning?**
  - Education dimension made up of at least two of several indicators:
    - School-age child does not attend school (14% of 6-17Y)
    - Child is beyond primary school age and has not completed primary education (75%)
    - Child is two or more years behind in correct grade for age (48%)
3. Dimensions, indicators, weights ➔ implicit vs. explicit weighting

**Consensual method and MODA:**
- **implicit equal weighting of dimensions/indicators following the conceptual framework MPI:**
- **explicit weighting (equal across dimensions, equal within dimensions across indicators), imposed by the researcher's own decision**

<table>
<thead>
<tr>
<th>Consensual Method</th>
<th>Dimension</th>
<th>Indicator</th>
<th>Threshold</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Implicit:</strong></td>
<td></td>
<td><strong>Housing conditions</strong></td>
<td>lives in a dwelling whose main floor material is earth/sand, wood planks or other material, OR the main roof material is thatch/palm leaf, wood planks or other, OR the main walls material is cane/palm/trunks, bamboo with mud, plywood, reused wood, or other.</td>
</tr>
<tr>
<td><strong>Explicit:</strong></td>
<td></td>
<td><strong>Cooking fuel</strong></td>
<td>lives in a household where solid fuels are used for cooking and the cooking is done inside the dwelling.</td>
</tr>
<tr>
<td><strong>Explicit:</strong></td>
<td></td>
<td><strong>Asset ownership</strong></td>
<td>lives in a household that owns less than 1 information device (radio, television, telephone)</td>
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<table>
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<tr>
<td></td>
<td>1/15</td>
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More relevant for MPI and MODA

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<th>Deprivation cutoff</th>
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<td><strong>Education</strong></td>
<td>School attendance</td>
<td>Child is of school age and not attending school</td>
<td></td>
</tr>
<tr>
<td>(N-MODA with age groups)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Primary school attainment</td>
<td>Child is beyond primary school age and has not completed school</td>
<td></td>
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<tr>
<td><strong>ECD</strong></td>
<td>Books &amp; Toys</td>
<td>Child is younger than 3 years and does not have at least 1 book</td>
<td></td>
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<td></td>
<td>Support for learning</td>
<td>3-4 years and does not do 4 or more of the 7 possible activities with the main caregiver</td>
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C-MPI weights and indicator selection, MODA calculations and vice versa

Simulated various iterations to estimate H%, calculating C-MPI based on indicator selection of a rights-based MODA approach; MODA calculations based on MPI weights and indicators

Confirm: 1) small to no difference with equivalent thresholds set; 2) larger differences when setting higher poverty thresholds, largely due to differences in weighting and dimension structures.

Thresholds

Poverty measures are naturally sensitive to the threshold set

Omitted for simplicity
Conclusions

• Arithmetic and theoretical differences between the methods exist and are important to understand
  • However, empirical for evidence in this case study show that these are not large given similar conditions; they all try to capture the same phenomenon
  • In general MD child poverty in UGA is high (at least 2/3)
  • Frameworks are flexible - differences should not be exaggerated and confused for merit – the researcher’s CHOICES are more important

• What is the truth?
  • Depends on what question is being asked.
  • What is the purpose? Research vs. policy design

• Usefulness and merit for policy design and programming?
  • All three methods have been claimed to be useful for policy design – they are differently useful
Future Research / Next steps

• Additional robustness checks, calculation of confidence intervals to determine overlap in distributions and poverty headcount rates of different measures
• Calculation of overlap of children identified by Child-MPI and MODA measures and all their iterations.
• Supplementary tests of sensitivity to inclusion of additional indicators
• Additional countries, where possible