Why Multidimensional (MD) Poverty Measures?

Sabina Alkire, Oxford 2014
“Human lives are battered and diminished in all kinds of different ways.”  

Amartya Sen

UNDP’s Million Voices: ‘The clear message is: Eradicating poverty and hunger, achieving gender equality, and improving health and education services remain foremost in people’s priorities.’

Helen Clark, 23 Sept 2013
What is Poverty? Who is poor?

• “you can’t think of the future because you can only see how to survive in the present” (Urban youth, Ecuador)
• “When food becomes scarce, we only eat once a day to allow our children and husbands to eat three times a day” (Philippino Women)
• “Those without money have to wait” (Bangladesh)
• “Our parents did not go to school and so we are poor today. Education can change this.” (Youth, Nigeria)
• “I am afraid that they might kill my son for something as irrelevant as a snack.” (Brazilian woman).

Voices of the Poor: Can Anyone Hear Us? 2000
Why MD Poverty?

This session will briefly introduce some of the reasons that multidimensional measures of poverty (and well-being) are on the upswing.

In addition to moral or ethical motivations, they can be divided into three types:

1. Technical – they can be constructed
2. Empirical – they add information and value
3. Policy – they meet policy demands
Why the new emphasis on measurement?

*We can:*  
1) Data availability  
2) Computational and Methodological developments  

*We need to:*  
3) Monetary and Non-Monetary Household Deprivation Levels  
4) Income poverty trends  
5) Associations across non-monetary deprivations  
6) Economic Growth and Non-income Deprivations

*We are willing to:*  
7) National and international policy ‘demand’  
8) Political space for new metrics
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1. Relevant Data are Increasing

• Since 1985, the multi-topic household survey data has increased in frequency and coverage.
• Similarly significant increases have occurred with income and expenditure data, censusus.
• Other data sources can sometimes be merged.
• Technology now exists to process and analyse these data immediately.
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2. Computational and methodological developments

Increases of data availability together with increased computational power have led to the generation of new indices

- HDI, IHDI, Canada Index of Well-being, etc.
- Doing Business Index,
- Good Governance,
- Global Peace Index & related,
- SIGI & other gender-related
- CDI Index
- Social Protection, Global Hunger,
2. Computational and methodological developments

The appealing axiomatic properties of new methodologies have created new possibilities as well – for poverty but also other indices.

Over 50 published articles cite the AF methodology at present.

Applications of AF go beyond poverty and also include energy, resilience, time use, well-being, empowerment, and so on.

The first example: the GNH index of Bhutan is based on (1-M0).
Bhutan
Gross National Happiness
Nine Domains, 33 indicators
2008, 10, 12
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3. Income poverty is not a proxy for key non-income deprivations

Katzman (1989) found that 13% of households in Montevideo, Uruguay, were income poor but did not experience unsatisfied basic needs, whereas 7.5% were in the opposite case.

Ruggeri Laderchi (1997) concluded on the basis of Chilean data that ‘income in itself is not…conveying all of the information of interest if the aim is to provide a comprehensive picture of poverty’.

See also Klasen 2008
3. Income poverty is not a proxy for key non-income deprivations

Table 5. Lack of overlaps between monetary and CA poverty

<table>
<thead>
<tr>
<th>Capability poverty measured as</th>
<th>Education</th>
<th>Nutrition/health</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Children</td>
<td>Adults</td>
</tr>
<tr>
<td>% of CA poor not in monetary poverty:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Peru</td>
<td>32</td>
<td>37</td>
</tr>
<tr>
<td>% of monetary poor not CA poor:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>India</td>
<td>65</td>
<td>38</td>
</tr>
<tr>
<td>Peru</td>
<td>93</td>
<td>73</td>
</tr>
</tbody>
</table>

Source: Franco et al. (2002).

3. Income poverty does not closely proxy material deprivations in Europe

<table>
<thead>
<tr>
<th>Country</th>
<th>Neither persistently income poor nor deprived</th>
<th>Persistently income poor only</th>
<th>Persistently deprived only</th>
<th>Persistently income poor and deprived</th>
</tr>
</thead>
<tbody>
<tr>
<td>Denmark</td>
<td>82.8</td>
<td>6.9</td>
<td>8.9</td>
<td>1.4</td>
</tr>
<tr>
<td>The Netherlands</td>
<td>78.8</td>
<td>7.1</td>
<td>7.3</td>
<td>6.8</td>
</tr>
<tr>
<td>Belgium</td>
<td>73.0</td>
<td>9.3</td>
<td>8.8</td>
<td>8.9</td>
</tr>
<tr>
<td>France</td>
<td>70.8</td>
<td>11.6</td>
<td>8.5</td>
<td>9.0</td>
</tr>
<tr>
<td>Ireland</td>
<td>64.8</td>
<td>11.4</td>
<td>9.7</td>
<td>14.0</td>
</tr>
<tr>
<td>Italy</td>
<td>68.8</td>
<td>9.2</td>
<td>11.3</td>
<td>10.7</td>
</tr>
<tr>
<td>Greece</td>
<td>68.8</td>
<td>11.2</td>
<td>9.9</td>
<td>10.1</td>
</tr>
<tr>
<td>Spain</td>
<td>72.7</td>
<td>9.2</td>
<td>8.7</td>
<td>9.4</td>
</tr>
<tr>
<td>Portugal</td>
<td>64.5</td>
<td>12.0</td>
<td>11.3</td>
<td>12.2</td>
</tr>
<tr>
<td>All</td>
<td>70.7</td>
<td>10.4</td>
<td>9.2</td>
<td>9.7</td>
</tr>
</tbody>
</table>

Source: Whelan Layte Maitre 2004 Understanding the Mismatch between Income Poverty & Deprivation

See Nolan and Whelan 2011 Poverty and Deprivation in Europe for a review of empirical studies across Europe.
3. Income poverty does not closely proxy material deprivations in Europe

In Europe, while 20% of people are persistently income poor, and 20% are persistently materially deprived, ONLY 10% of people are BOTH persistently income poor and materially deprived.

This observation motivated the move in Europe to a multidimensional poverty measure EU 2020. Income doesn’t tell the full story – even of material deprivation in industrial economies.

See also: Nolan and Whelan 2011
3. Monetary poverty: important yet incomplete

Other issues:
• does not show how people are poor
• non-sampling measurement error (accuracy)
• time and cost of survey (data collection)
• comparability (rural-urban, international)
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A 2010 chapter by the above authors that reviewed trends in different MDGs 1990-2006 found that the trends of $1/day poverty did not match trends in other MDGs:
Figure 2.3 Heterogeneity across MDGs

correlation of annual growth rates, 1990–2006

growth in poverty headcount (%P, PPP)
growth in undernourishment

growth in poverty headcount (%P, PPP)
growth in primary education completion

growth in poverty headcount (%P, PPP)
growth in ratio of female-to-male enrollments in secondary education
Figure 2.3 (continued)

**correlation of annual growth rates, 1990–2006**

- Growth in poverty headcount (US$, PPP)
- Growth in under-5 mortality

**correlation of annual growth rates, 1990–2006**

- Growth in ratio of female-to-male enrollments in secondary education
- Growth in under-5 mortality

**correlation of annual growth rates, 1990–2006**

- Growth in primary education completion
- Growth in under-5 mortality

**correlation of annual growth rates, 1990–2006**

- Growth in ratio of female-to-male enrollments in secondary education
- Growth in primary education completion

*Source: Survey means from POVCAL.*
Growth? Claims are strong… and debated of the absolute trends of $1.25 vs four MDGs 1990-2012:

Panel I – Child Malnutrition

Panel II – Primary Completion Rate

Panel III – Gender Parity

Panel IV – Under Five Mortality Rate

Size of bubble depicts 2000 population
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5. Associations across indicators

Can we just choose a non-income indicator as a proxy of the main social deprivations? (empirical question)
5. Non-income deprivations

India NFHS data 2005-6, MPI set

% of people living in a hh where a child has died: **25.7%**
% of people living in a hh where no one has 5 yrs schooling: **18.2%**

Are they mostly the same people?

Less than one-third of the time.

<table>
<thead>
<tr>
<th>Anyone has 5 yrs of schooling</th>
<th>Child mortality</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Non-depr</td>
<td>Deprived</td>
</tr>
<tr>
<td>Non-deprived</td>
<td>61.8</td>
<td>12.5</td>
</tr>
<tr>
<td>Deprived</td>
<td>20.0</td>
<td>5.8</td>
</tr>
<tr>
<td>Total:</td>
<td>81.8</td>
<td>18.2</td>
</tr>
</tbody>
</table>
5. Non-income deprivations

India NFHS data 2005-6, MPI set

Another example: mortality and school attendance

Percentage of people living in a hh where a child has died: 25.7%
Percentage of people living in a hh where a child is not attending school: 21.2%

Are they mostly the same people? Less than 40% of the time.

<table>
<thead>
<tr>
<th>Child mortality</th>
<th>School Attendance</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Non-depr</td>
<td>Deprived</td>
</tr>
<tr>
<td>Non-depr</td>
<td>61.2</td>
<td>13.0</td>
</tr>
<tr>
<td>Deprived</td>
<td>17.6</td>
<td>8.1</td>
</tr>
<tr>
<td>Total</td>
<td>78.8</td>
<td>21.1</td>
</tr>
</tbody>
</table>
5. Non-income deprivations

Fig 1.2 – Trends in MDGs vary by indicator

5. Non-income deprivations

Fig 1.3 – The Importance of Understanding Joint Distribution of Deprivations in Brazil

Panel I

- Shelter
- Child in School
- Running Water
- Income ($2/day)
- Sanitation
- Education of Household

Percentage of Population Deprived

Panel II

Number of Deprivations

- Percentage of Population Deprived

Source: Battiston et al. (2013)
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6. Growth? Claims are strong
2008 Growth Commission

“Growth is not an end in itself. But it makes it possible to achieve other important objectives of individuals and societies. It can spare people en masse from poverty and drudgery. Nothing else ever has.”
6. Growth Commission

The Growth Commission 2008 generated a nuanced set of observations on sustained economic growth based on case studies of countries that had 7% growth for over 25 years.

Yet alongside great gains, after 25 years of growth:
- In Indonesia, 28% of children under five were still underweight and 42% were stunted
- In Botswana, 30% of the population were malnourished, and the HDI rank was 70 places below the GDP rank.
- In Oman, women earned less than 20% of male earnings.

Yet some other countries with lower growth had made greater progress in social indicators.
6. Growth? Claims are strong…and debated


‘The correlation between growth in GDP per capita and improvements in non-income MDGs is practically zero, . . . [thereby confirming] the lack of a relationship between those indicators and poverty reduction. Because it would be hard to believe that information on nonincome MDGs is so badly affected by measurement error that it is pure noise, this lack of a relationship reflects some relative independence among policy instruments governing progress in the various MDGs. Furthermore, it highlights substantive differences in country policies and circumstances that may affect the relationship between these policies. This interesting finding suggests that economic growth is not sufficient per se to generate progress in nonincome MDGs. Sectoral policies and other factors or circumstances presumably matter as much as growth.’
6. Dreze and Sen: An Uncertain Glory

**India**: strong economic growth since 1980s.

“Growth, of course, can be very helpful in achieving development, but this requires active public policies to ensure that the fruits of economic growth are widely shared, and also requires – and this is very important – making good use of the public revenue generated by fast economic growth for social services, especially for public healthcare and public education.”

Dreze and Sen ‘Putting Growth in its Place’ Outlook. November 2011
6. Economic Growth and Non-income Deprivations

Table 1.1 Comparison of India’s Performance with Bangladesh and Nepal

<table>
<thead>
<tr>
<th>Year</th>
<th>India</th>
<th>Bangladesh</th>
<th>Nepal</th>
</tr>
</thead>
<tbody>
<tr>
<td>GDP per capita (PPP, constant 2005 international $)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1990</td>
<td>1,193</td>
<td>741</td>
<td>716</td>
</tr>
<tr>
<td>2011</td>
<td>3,203</td>
<td>1,569</td>
<td>1,106</td>
</tr>
<tr>
<td>Growth (p.a.)</td>
<td>0.7%</td>
<td>0.5%</td>
<td>0.3%</td>
</tr>
<tr>
<td>Under-5 Mortality Rate</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1990</td>
<td>114</td>
<td>139</td>
<td>135</td>
</tr>
<tr>
<td>2011</td>
<td>61</td>
<td>46</td>
<td>48</td>
</tr>
<tr>
<td>Change</td>
<td>-53</td>
<td>-93</td>
<td>-87</td>
</tr>
<tr>
<td>Maternal Mortality Ratio</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1990</td>
<td>600</td>
<td>800</td>
<td>770</td>
</tr>
<tr>
<td>2010</td>
<td>200</td>
<td>240</td>
<td>170</td>
</tr>
<tr>
<td>Change</td>
<td>-400</td>
<td>-560</td>
<td>-600</td>
</tr>
<tr>
<td>Infant Immunization (DPT) (%)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1990</td>
<td>59</td>
<td>64</td>
<td>44</td>
</tr>
<tr>
<td>2011</td>
<td>72</td>
<td>96</td>
<td>92</td>
</tr>
<tr>
<td>Change</td>
<td>13</td>
<td>32</td>
<td>48</td>
</tr>
<tr>
<td>Female Literacy Rate, Age 15-24 Years (%)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1990</td>
<td>49</td>
<td>38</td>
<td>33</td>
</tr>
<tr>
<td>2010</td>
<td>74</td>
<td>78</td>
<td>78</td>
</tr>
<tr>
<td>Change</td>
<td>25</td>
<td>40</td>
<td>45</td>
</tr>
</tbody>
</table>

6. Income & AF MPIS

But if we put non-income deprivations all together in an MPI (that reflects joint distribution of deprivations), perhaps they follow monetary poverty levels or trends. Do they? (empirical question)
6. Income & non-AF measures:

– Klasen 2000: Poverty & deprivation in South Africa

**TABLE 10**

**Overlap and Differences Between Poor and Deprived Populations**

<table>
<thead>
<tr>
<th></th>
<th>Both</th>
<th>Poor, not deprived</th>
<th>Deprived, not poor</th>
<th>Neither</th>
</tr>
</thead>
<tbody>
<tr>
<td>Poor/Deprived, %</td>
<td>44.2</td>
<td>8.7</td>
<td>8.7</td>
<td>38.4</td>
</tr>
<tr>
<td>Poor/Deprived, Numbers (m.)</td>
<td>16.8</td>
<td>3.3</td>
<td>3.3</td>
<td>14.6</td>
</tr>
<tr>
<td>Poorest/Most Deprived, %</td>
<td>20.3</td>
<td>8.6</td>
<td>8.8</td>
<td>62.4</td>
</tr>
<tr>
<td>Poorest/Most Deprived, Numbers (m.)</td>
<td>7.7</td>
<td>3.2</td>
<td>3.3</td>
<td>23.7</td>
</tr>
</tbody>
</table>

Convergence and Divergence of Incidence of Poorest/Most Deprived by Population Groups (figures in parentheses sum to 100% in each column category such as race, the other figures sum to 100% in each row)
6. Income & AF MPIs

Cross Tabs of Multidimensional and Monetary Poverty with matching headcounts.

Recall: MPI indicators are differently defined, and their definition will affect cross-tabs.

Income would accurately identify multidimensionally poor people 20% to 65% of the time, depending on country, design, and level of MPI.

Note: work in progress

<table>
<thead>
<tr>
<th>Country</th>
<th>Income</th>
<th>AF</th>
<th>Income</th>
<th>AF</th>
<th>Income</th>
<th>AF</th>
<th>Income</th>
<th>AF</th>
<th>Income</th>
<th>AF</th>
</tr>
</thead>
<tbody>
<tr>
<td>Venezuela</td>
<td>16.8%</td>
<td>3.4%</td>
<td>20.2%</td>
<td>8.4%</td>
<td>2.0%</td>
<td></td>
<td>23.8%</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>South Africa</td>
<td>11.0%</td>
<td>3.0%</td>
<td>27.3%</td>
<td>34.0%</td>
<td>19.0%</td>
<td></td>
<td>55.9%</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>India</td>
<td>43.4%</td>
<td>14.3%</td>
<td>32.9%</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Vietnam</td>
<td>16.7%</td>
<td>5.7%</td>
<td>34.1%</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mexico</td>
<td>26.6%</td>
<td>10.4%</td>
<td>39.2%</td>
<td>74.9%</td>
<td>49.2%</td>
<td></td>
<td>65.7%</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Indonesia</td>
<td>16.5%</td>
<td>7.1%</td>
<td>43.0%</td>
<td>31.8%</td>
<td>18.4%</td>
<td></td>
<td>57.9%</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Nepal</td>
<td>24.9%</td>
<td>12.2%</td>
<td>49.1%</td>
<td>41.7%</td>
<td>27.0%</td>
<td></td>
<td>64.7%</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
6. Income & AF MPIs

$1.25/poverty and MPI do not trend together

(Alkire Roche Vaz 2014)
6. Income & AF MPIs: Does Growth reduce MPI across Indian States equally?

Percentage Change in MPI

Growth Rate of Per-capita SDP

-11.0% -10.0% -9.0% -8.0% -7.0% -6.0% -5.0% -4.0% -3.0% -2.0% -1.0% 0.0% 1.0% 2.0% 3.0% 4.0% 5.0% 6.0% 7.0% 8.0% 9.0%

-11.0% -10.0% -9.0% -8.0% -7.0% -6.0% -5.0% -4.0% -3.0% -2.0% -1.0% 0.0% 1.0% 2.0% 3.0% 4.0% 5.0% 6.0% 7.0% 8.0% 9.0%

Arunachal Pradesh

Andhra Pradesh

Arunachal Pradesh

Assam

Bihar

Madhya Pradesh

Manipur

Maharashtra

Meghalaya

Mizoram

Nagaland

Orissa

Punjab

Rajasthan

Tamil Nadu

Tripura

Uttar Pradesh

West Bengal

Andhra Pradesh

Karnataka

Goa

Kerala

Alkire and Seth

Asian Development Bank forthcoming
6. Conclusions:

Income does not strongly proxy MPI

Change in MPI vs Income vary

Growth and MPI reductions vary

MPI usually adds new information
Why the new emphasis on measurement?

*We can:*  
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*We are willing to:*  
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8) Political space for new metrics
60+ countries - including:

- The New York Times (US)
- TIME Magazine (US)
- Xinhua (China)
- Al Jazeera (Qatar)
- The Hindu (India)
- Dawn (Pakistan)
- BBC (UK)
- The Daily Nation (Kenya)
- Agence France Presse (France)
- The Wall Street Journal (US)
- The Economist (UK)
- The Cape Times (South Africa)
- The Australian (Australia)
- The Guardian (UK)
- The Financial Times (UK)
- Radio Netherlands

MPI Media Coverage

- The Huffington Post (US)
- Foreign Policy (US)
- The Hindu (India)
- Christian Science Monitor (US)
- The Globe and Mail (Canada)
- The Times of India (India)
The Global Multidimensional Poverty Peer Network (Global MPPN)

launched 6 June 2013, Oxford

Angola, Bhutan, Brazil, Chile, China, Colombia, ECLAC, Ecuador, El Salvador, Dominican Republic, Germany, India, Iraq, Malaysia, Mexico, Morocco, Mozambique, Nigeria, OECD, the Organization of Caribbean States, OPHI, Peru, Philippines, SADC, and Vietnam
Why the new emphasis on measurement?

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  3) Monetary and Non-Monetary Household Deprivation Levels  
  4) Income poverty trends  
  5) Associations across non-monetary deprivations  
  6) Economic Growth and Non-income Deprivations

*We are willing to:*  
  7) National and international ‘demand’  
  8) **Political space for new metrics**

*Technical*  

*Empirical*  

*Policy*
8. Interest in AF Poverty measure

1. **Birds-eye view** - can be unpacked
   a. by region, ethnicity, rural/urban, etc.
   b. by indicator, to show composition
   c. by ‘intensity’ to show inequality among poor

2. **Adds Value:**
   a. focuses on the multiply deprived
   b. shows joint distribution of deprivation.

3. **Incentives** to reach the poorest of the poor

4. **Flexible:** you choose indicators/cutoffs/values

5. **Robust** to wide range of weights and cutoffs
Why the new emphasis on measurement?

*We can:*  
1) Data availability  
2) Computational and Methodological developments  

*We need to:*  
3) Monetary and Non-Monetary Household Deprivation Levels  
4) Income poverty trends  
5) Associations across non-monetary deprivations  
6) Economic Growth and Non-income Deprivations  

*We are willing to:*  
7) National and International ‘demand’  
8) Political space for new metrics
Thanks!