

Comparing Approaches to the Measurement of Multidimensional Child Poverty

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COMPARING APPROACHES TO THE MEASUREMENT OF MULTIDIMENSIONAL CHILD POVERTY

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Abstract: The Sustainable Development Goal (SDG) target 1.2 implies that both monetary and non-monetary or multidimensional (MD) child poverty would be measured and monitored, and that the associated indicators would be defined nationally. However, very few countries routinely measure child MD poverty. This paper seeks to provide some guidance on the topic by presenting and comparing two approaches which are now some of the most widely used. The first approach is the Multiple Overlapping Deprivation Analysis (MODA) which was developed by UNICEF. MODA is a child specific MD poverty measure rooted in the rights-based framework of the Convention on the Rights of the Child (CRC). The second measure we present and compare is the Multidimensional Poverty Index (MPI) developed by the Oxford Poverty and Human Development Initiative which has computed the MPI for over 100 countries using a universal global standard. We compare the global version of the measures, applying them to four countries: Cambodia, Ghana, Mali, Mongolia. The two approaches, while sharing many similarities, do not lead to the same results. In deciding on their individual strategy to measure and track SDG Target 1.2, countries will need to reflect on both the underlying purpose of the target, and to evaluate the inevitable trade-offs between the two approaches.

Keywords: multi-dimensional poverty; child poverty

JEL: I32; J1

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1. INTRODUCTION

Children make up almost a third of the world's population and nearly one half of the population in least developed countries.¹ Universally, children are one of the most vulnerable groups in society, as they depend on others and do not command economic resources of their own. Across the world, children are at the highest risk of poverty: the World Bank and UNICEF estimate that extreme poverty rates for children are double those of adults (Newhouse, Suarez-Becerra, and Evans, 2016). Growing up in poverty can have long-term consequences, negatively affecting the life chances of future adults, with associated consequences for all of society (Brooks-Gunn and Duncan, 1997). Addressing child poverty is thus a powerful way to achieve equality of opportunities for all. Within this context, the recently released Sustainable Development Goals (SDGs) explicitly include child poverty as a target under Goal 1:

By 2030, reduce at least by half the proportion of men, women and children of all ages living in poverty in all its dimensions according to national definitions.²

The phrasing of the specific target implies that the child poverty target would include both monetary and non-monetary or multidimensional (MD) poverty, and that the associated indicators would be defined nationally. This is in contrast to Target 1.1 which refers to the eradication of extreme monetary poverty as measured by a uniform global standard of USD1.25 per person per day. The unique phrasing of Target 1.2 thus calls for countries to define their own individual measures of multidimensional poverty for children.

Child monetary poverty is typically defined as a share of children living in households below the poverty line. Virtually every developing country now has its own national monetary poverty line, so both conceptually and practically the definition and subsequent measurement and monitoring of child monetary poverty at the national level will be straightforward. Even so, many countries still do not routinely report a specific child poverty rate.³ However, the definition and subsequent measurement of child MD poverty is not straightforward. First, most countries do not already have a MD poverty measure that is nationally defined and routinely tracked (Bhutan and Mexico are notable exceptions to this generalization). Second, what constitutes MD poverty for children is not the same as for adults. Indeed, even among children, deprivation and associated MD poverty for a 1-year-old is likely to be very different from that of a 17-year-old, so that even if a national or household level of MD poverty exists, it may not be appropriate for measuring actual well-being among children, let alone tracking its evolution over time.

So with countries world-wide now tasked with the job of defining and monitoring child MD poverty, what can be done? This paper seeks to provide some guidance on the topic by presenting and comparing two approaches which we believe might be good starting points for countries that are

¹ UN Population Division – World Population Prospects, the 2015 revisions.

² <https://sustainabledevelopment.un.org/post2015/transformingourworld/publication>

³ <https://blogs.unicef.org/blog/7-facts-about-child-poverty-you-should-know/>

grappling with this issue for the first time. However, the comparison is limited to the comparable, global version of the measure, while it will not address the issue of a specific, national measure of child MD poverty.

The first approach is the Multiple Overlapping Deprivations Analysis (MODA) which was developed by the UNICEF Office of Research in collaboration with the UNICEF Social Inclusion Unit of the Programme Division (de Neubourg, Chai, de Milliano, and Plavgo, 2013). MODA is a child-specific MD poverty measure rooted in the rights-based framework of the Convention on the Rights of the Child (CRC). MODA has been applied as a global cross-country measure for over 40 low-income countries, and provided the first estimates of the number of children living in MD poverty in sub-Saharan Africa (de Milliano and Plavgo, 2014).

The second measure we present and compare is the Multidimensional Poverty Index (MPI) developed by the Oxford Poverty and Human Development Initiative which has computed the MPI for over 100 countries using a universal global standard similar to the USD1.25 a day monetary poverty line.⁴ Given that the MPI already exists for so many countries, and assuming that the micro data files would be made publically available, a country can easily compute ‘the proportion of children living in MPI-poor households’, a measure that would be similar to the calculation of child monetary poverty, where a household level well-being measure (e.g. income or consumption) is applied to each individual living in that household. It is worth emphasizing that the MPI is not a child-specific measure, though several indicators within the MPI are measured for children living in the household.

We are here comparing the cross-country and comparable version of the two methodologies: both measures have been adapted specifically to national contexts to produce national estimates of MD poverty. In particular, MODA has been applied in national contexts in over 40 countries to date, including countries as varied as Armenia, Iceland, Laos and Tanzania. Given the considerable global experience in adopting the MODA method to national contexts, and the child specificity of the measure, it can represent a solid reference for countries seeking guidance and ideas for their own national measure. The MPI has also been adapted to several countries, including Armenia, Chile, Costa Rica, El Salvador, and includes different indicators and dimensions based on what is deemed to characterize MD poverty in the specific context.⁵ In Bhutan a child Multidimensional Poverty Index was developed. While we recognize that the ‘national definition’ is one of the key points of SDG 1.2, the discussion of different adaptations of the two measures to national contexts is beyond the scope of the present work.

Both MPI and MODA are widely used measures, and, while a country may chose an alternative methodology for its national measure, these are the two main options for countries intending to measure child MD poverty.

Therefore, the key objectives of this paper are first to describe in a transparent fashion the key differences and similarities between these two widely used MD poverty measures; second to assess

⁴ <http://www.ophi.org.uk/>

⁵ <http://www.ophi.org.uk/wp-content/uploads/Informing-Policy-brochure-web-file.pdf>

how wide the difference is in overall estimates of child MD poverty; and third, to assess to what extent they identify the same individual children as deprived or not deprived. We apply the two measures to the same data sets from four countries in three different continents and with different levels of development: Cambodia, Ghana, Mali and Mongolia. Our key research question is how, and through which paths, the two approaches lead to different results in terms of child MD poverty, and what are the implications of choosing one measure over the other. The answers to these questions will be valuable to countries across the globe that are beginning to develop child MD poverty measures to track and report progress against Target 1.2 of the SDGs.

2. APPROACHES TO MEASURING MULTIDIMENSIONAL CHILD POVERTY

Sen (1979, 1981) distinguishes between two main characteristics of poverty measures: *identification* and *aggregation*. The former refers to the mechanism that separates the poor from the non-poor, while the latter specifies how information about the poor is combined into a summary statistic. In a review of approaches to child poverty measurement, Roelen and Gassman (2008) argue that the identification step is key to child poverty measurement because it focuses squarely on what it means for a child to be poor. It raises the question of the unit of analysis, the resource base, and the poverty line (the cut-off that separates poor children from the non-poor).

If the child, rather than the household, is the unit of analysis, then the poverty measure has to assess the situation of children in their own right without making assumptions about the intra-household distribution of resources. (However, in practice such assumptions may have to be made for data reasons). Meanwhile, the resource base refers to the domains of children's lives that allow the poor to be distinguished from the non-poor. It could range from one dimension (e.g. income) to several (e.g. health, nutrition, and education). Finally, as the unit of analysis, the resource base and the poverty line all identify individual children as poor, this information is aggregated into an overall child poverty measure to capture the incidence, depth and severity of poverty at the population level, or to create an aggregate group-based (or dashboard) poverty index.

Different conceptual approaches can inform the identification step, leading to different decisions regarding the unit of analysis and the resource base of the poverty measure. For instance, the Atkinson Commission on Global Poverty distinguishes between subjective, basic needs, capabilities and minimum rights perspectives on non-monetary poverty, but judges only the latter two as "intrinsically multidimensional" (World Bank 2017, p. 155). The capabilities approach views poverty as more than just a lack of resources, but also as deprivation of a person's opportunities to "achieve those things that she has reason to value" (Sen 2009, p. 231). Sen's capabilities perspective informed the construction of the Global Multidimensional Poverty Index based on three dimensions: health, education and the standard of living (Alkire et al. 2015; Alkire and Santos 2010). Although Sen's definition of capabilities potentially leads to a long list of dimensions to define poverty, the choice of the MPI's dimensions is inevitably restricted by the data (Ravallion 2011).

However, the capabilities approach does not necessarily lend itself to the study of child poverty because, dependent on those around them, "children might not have the power to fully utilize their set of capabilities" (Roelen et al., 2010, p. 131). Instead, most studies of multidimensional child poverty rely on the rights-based approach to define its dimensions (but see Trani et al., 2013 for an exception). In a pioneering comparative analysis of multidimensional child poverty in all the developing regions of the world, Gordon et al. (2003) drew on specific articles of the Convention on the Rights of the Child (United Nations, 1989) to operationalise dimensions of child poverty, such as food, water, sanitation, health, shelter, education, information and access to basic services. Roche (2013) used these dimensions in a national study of child poverty in Bangladesh. Building on Gordon et al. (2003) as well as the analysis of child poverty in Vietnam by Roelen et al (2010), studies of multidimensional child poverty that use UNICEF's Multidimensional Overlapping

Deprivation Analysis framework (de Neubourg et al. 2012) define the dimensions of child poverty using the child rights approach (e.g. Chzhen et al., 2016; Chzhen and Ferrone, 2016; De Milliano and Handa, 2014). MODA defines child deprivation as non-fulfilment of child rights in the domains of survival, development, protection and social participation.

The child rights based approach also informed the construction of several well-known macro-level dashboard indices of child well-being (Bradshaw et al., 2007; Bradshaw and Richardson, 2009; OECD, 2009; Save the Children, 2008; Unicef Innocenti Research Centre, 2007; UNICEF Office of Research, 2013). Unlike multidimensional measures that rely on a single source of data in order to count the number of deprivations for each child, dashboard indices combine country-level information from different sources. Although dashboards can also be used to monitor multidimensional poverty, they do not allow for a study of overlaps between individual dimensions (World Bank 2017).

Unlike dashboard indices, both MODA and the MPI rely on a single source of micro data for all their dimensions. Both use Alkire and Foster's (2011) 'dual cut-off' method for counting deprivations on the individual or household level and aggregating them into a national measure of MD poverty.⁶ Both approaches produce estimates of headcount and intensity of poverty, and a synthetic index, composed according to the Alkire-Foster methodology (Alkire, Foster et al., 2015), and both eschew purely monetary indicators. The use of synthetic indexes, as in the MPI and the Adjusted Headcount Ratio (referred to as M0) produced by MODA, while more correct in capturing both the width and depth of poverty, is not suitable to measure the SDG target, for which measures of headcount will be better suited: for this reason, the comparison between the two approaches in this paper will focus primarily on the headcount measure.

The MPI and MODA also differ in several conceptual, operational and presentational ways that may have important implications for monitoring MD child poverty reduction (Chzhen and Ferrone, 2016). Different operational choices are due, at least in part, to the conceptual underpinnings of the MPI and MODA approaches to MD child poverty measurement: while the MPI is rooted in Sen's capabilities perspective, MODA uses the child rights approach. Table 1 (page 12) summarises key features of the MPI and MODA.

MODA uses the child as the unit of analysis, rather than the adult or household, and evaluates child-specific deprivations wherever possible. For instance, the dimensions of education, nutrition, health and protection from violence are defined at the level of the child (or all children in the household). Household-level dimensions such as water, sanitation and information access are defined at the level of the household because they are meant to affect all household members equally and there is usually no information about the intra-household distribution of these resources. In contrast, the MPI is household-based, but it can be disaggregated to report the share of children living in MPI-poor households. This implies that all children in the household are equally poor or non-poor. However, in practice, MODA-based studies also make assumptions about the

⁶The first cut-off identifies individuals deprived in a particular dimension, while the second cut-off identifies the MD poor individuals (i.e. those who are deprived in a number of (weighted) dimensions above that cut-off).

intra-household distribution of resources when they use child-specific deprivation questions asked about all children in the household as a group (e.g. Chzhen et al., 2016). Second, MODA calibrates indicators by age as finely as possible given the data available to reflect different needs of children as they grow up, following the life cycle approach.⁷ The MPI focuses on the household as a whole rather than its individual members. Age is taken into account in the nutrition indicator (any child under 5 years in the household who is malnourished) and the education indicator (at least one school-age child is not attending school), but outcomes are nevertheless applied to the whole household.

MODA and the MPI also differ in the way they weight and aggregate indicators of poverty. MODA first aggregates its indicators into dimensions and then counts the number of dimensions each child is deprived in, while the MPI assigns indicators to three dimensions notionally (health, education and living standard) and aggregates indicators directly into an index. MODA indicators are usually combined into dimensions using the union approach, as each indicator is deemed equally important for a child in that dimension and a lack of deprivation in one cannot make up for deprivation in another – there is no trade-off between children’s rights. This leads to all indicators having implicit equal weighting. In contrast, the MPI assigns equal weights to each of its three dimensions so that an individual indicator has a lower weight if there are more indicators in this dimension. The cross-country MODA uses one or two indicators per dimension (and five or six dimensions per age group) while the Global MPI has two indicators each in health and education, but six indicators in the living standard dimension. However, it should be noted that some of the indicators present in the MPI imply, *de facto*, a ‘union-type’ of aggregation (see, for example, the water indicator, in the Living Standard dimension). At the same time, some of the MODA dimension have two indicators which apply to two different subset of the population, attributing, in practice, only one indicator to the dimension.

Although the MODA approach to weighting and aggregation of indicators may be more in line with the rights-based framework underlying child well-being, it is likely to result in higher child MD poverty headcounts (as opposed to the share of children in MPI-poor households). The different approaches to weighting and aggregation also lead to differences in the sensitivity of the MD poverty headcount to changes in just one indicator. MODA is fully sensitive to variation in a single indicator only when this indicator defines the entire dimension (i.e. one indicator per dimension). When there are two indicators per dimension, the sensitivity to the change in the status of one indicator will depend heavily on the initial state of the other: if both indicators denote non-deprivation, a deterioration in one of them would lead to a child being deprived in the whole dimension. However, if one of the indicators already denoted deprivation, the state of the child would not change (she would remain deprived). This is a consequence of the fact that dimensions, not indicators, are the central focus of MODA, in accordance with a rights-based approach. Meanwhile, the MPI is sensitive to variation in any indicator because all indicators have separate weights. Thus, it may be more difficult to register an improvement in the MD headcount under MODA, meaning it represents a more conservative approach to monitoring MD child deprivation than the MPI

⁷ For example, the ‘infant and young child feeding’ indicator in the nutrition dimension reflects the different nutritional needs of children aged under 6 months, and older children.

At the same time, it should be noted that many of the indicators that constitute the MPI could be considered dimensions of deprivation in their own right: nutrition, water, sanitation, etc.

Table 1 – Key features of MODA and the MPI

	Cross-Country MODA	Global MPI
Conceptual framework	Children's rights (e.g. CRC).	Basic needs/capabilities.
Unit of analysis	Child (could be extended to measure MD poverty of adults).	Household/adult (disaggregating children living in MD poor households is straightforward).
Age-specific indicators	Yes (e.g. 0-5, 6-11, 12-17).	No.
Data requirements	All data must come from a single survey (often DHS or MICS) to allow multidimensional poverty to be assessed.	All data must come from a single survey (often DHS or MICS) to allow multidimensional poverty to be assessed.
Aggregation of indicators into dimensions	Aggregates indicators into dimensions using the union approach, i.e. an individual is deprived in a dimension if he/she is deprived in at least one indicator within the dimension.	Assigns indicators to three dimensions and aggregates indicators directly into one index.
Number of indicators per dimensions	One or two (preferably two indicators in each dimension).	Typically two to six indicators per dimension.
Weighting	Dimensions are weighted equally; reports the 'number of dimensions' an individual is deprived in.	Dimensions have the same weight and indicators are weighted equally within dimensions.
Overlaps analysis	Routinely reports overlaps illustrating where the individual is deprived in multiple dimensions.	Supports analysis of overlaps between dimensions at the household level.
Sensitivity to changes in indicators	Sensitive to variation in a single indicator only when this indicator defines the entire dimension (i.e. one indicator per dimension). When there are two indicators per dimension, both would have to improve to register an improvement in the dimension.	Sensitive to variation in a single indicator because each indicator has a separate weight.
Use of monetary indicators ⁸	Excludes monetary indicators.	Excludes monetary indicators.
MD threshold	Produces a deprivation count index between 0 and the maximum number of dimensions considered (e.g. 6 dimensions) for each child, but does not have a predefined cut-off to define a poor child (e.g. 2 out of 6 dimensions).	Produces an index between 0 and 1 for each household and has a predefined 'global' cut-off to define poor households (e.g. 0.33). Additional reported cut-offs are 0.20 and 0.50.
Headline population-level MD measure	Produces headcount, intensity and intensity-adjusted headcount measures.	Produces headcount, intensity and intensity-adjusted headcount measures.
Lead agency	UNICEF.	UNDP and Oxford Poverty and Human development Initiative (OPHI).

⁸ If the base of data contains information on monetary indicators (e.g. household income/expenditure surveys) both MODA and MPI can provide overlap analysis with monetary indicators.

There are also presentational differences. Rather than picking one 'poverty' cut-off (e.g. 33 per cent of 10 weighted indicators in the MPI), MODA-based results usually present the entire distribution of dimensional deprivations as well as the headcount ratios and other poverty statistics associated with every possible cut-off. However, the cut-off of two or more deprivations is generally used as the 'poverty line' to define deprived children. Where the survey contains information on monetary poverty, the cut-off can be drawn at a point that best discriminates between children living in poor and non-poor households (Chzhen and Ferrone, 2016; Ferrone and Chzhen, 2016). MODA also draws specific attention to the degree of overlap between different dimensions of deprivation, which helps identify the most vulnerable children and target interventions appropriately.

However, since both cross-country MODA and the MPI draw on similar sources of data (i.e. Multiple Indicator Cluster Surveys (MICS) and Demographic and Health Surveys (DHS)) and are similarly constrained by their content, we evaluate the extent to which MODA and the MPI identify the same children as MD poor using the same data in four different countries. We also identify and discuss the sources of any discrepancies between the two measures. Finally, we assess the sensitivity of both measures to improvements in the same indicators by using simple simulation techniques.

3. DATA AND METHODS

3.1. Data

To contrast MD poverty measures based on the MODA and MPI methodologies, we use four country case studies: Cambodia, Ghana, Mali and Mongolia. The analysis uses data from Multiple Indicator Cluster Surveys (MICS) in Ghana, Mali and Mongolia and from a Demographic and Health Survey (DHS) in Cambodia.

MICS is a household survey that provides internationally comparable data on topics including child nutrition, child health, education, access to information, and living conditions. The MICS questionnaires are designed by UNICEF and modules are chosen and customized according to the data needs in the country, which lead to slight differences in data collected across countries. Similarly DHS is a nationally representative household survey providing data on population, health and nutrition among other topics. Both MICS and DHS provide sufficient information to measure multidimensional child poverty. The final samples are based on households that have complete information available for the construction of both MPI and MODA.

Table 2 – Data sources

Country	Survey type	Year	Household sample size	Final child (0-17) sample size
Cambodia	DHS	2010	15,667	12,302
Ghana	MICS	2011	11,925	26,908
Mali	MICS	2009/2010	13,995	70,517
Mongolia	MICS	2010	10,500	11,752

3.2. Methods: dimensions and indicators

Table 3 (page 15) summarises the indicators and dimensions used to construct MD child poverty measures on the basis of MODA and the MPI in the four country case studies. The MODA indicators and dimensions are based on the cross-country comparative MODA project (CC-MODA) (see de Neubourg et al., 2012), while the MPI indicators and dimensions are based on the OPHI/UNDP global MPI (see, for example, Alkire and Santos, 2010). Since both CC-MODA and the MPI use the same surveys, many of the same survey items are used in both methods, even if they are combined into indicators and dimensions differently. Table 2 (above) shows that household-level dimensions (i.e. water, sanitation, housing and assets) tend to be more similar than the individual-specific dimensions (i.e. education, nutrition and health).

The thresholds used in the analyses to identify a child as MD poor are two or more MODA deprivations or living in a household with an MPI 0.33 or higher.

The last part of the paper presents the results of simple static simulation: we simulate the random re-assignment of the deprivation status for a defined sub-set of observations in different indicators,

and analyze how this affects the overall results in both MPI and MODA: as an example, if we want to simulate a ten per cent decrease in deprivation in the sanitation indicator, we reassign a randomly chosen ten per cent of the deprived population to the non-deprived status. To this end, we apply the simulation to the same indicator for both measures, therefore restricting the range of possible choices.

Table 3 – Definition of dimensions

	Age group (MODA)	Cross-Country MODA	Global MPI
Education	5-17	Child of compulsory school age not attending school or child beyond primary school age has no or incomplete primary education	No household member has completed five years of schooling At least one school-age child (up to grade 8) is not attending school
Information	5-17	Household does not have any of the following: TV, radio, phone, mobile phone, or computer	(see assets)
Nutrition	0-5	Inadequate infant and young child feeding practices, or child wasted (-2SD)	A woman is malnourished (BMI) ^a or at least one child in the household is underweight (-2SD)
Health	0-5	Child >12 months has not received three DPT vaccines or an unskilled birth attendant assisted with a child's birth in the household	A child in the household had died ^b
Water	0-17	Unimproved water source or more than 30 minutes to get water	Unimproved water source or more than 30 minutes to get water
Sanitation	0-17	Household has an unimproved toilet facility	Household has an unimproved or shared toilet facility
Housing	0-17	Natural floor material (earth / sand) or natural roof material (thatch / palm leaf/ raffia) Overcrowding (more than 4 people per room)	Household has a dirt, sand or dung floor Household uses biomass for cooking fuel
Assets		N/A	No access to electricity Household does not own more than one of: radio, TV, telephone, bike, motorbike or refrigerator and does not own a car or truck
Violence	0-17	Any child between 2-14 years in the household experiences any type of physical violence by parents/caregivers (not included in Mali and Cambodia)	N/A

4. RESULTS

4.1. Differences and overlaps in deprivation

Table 4 (page 17) shows the percentage of children deprived in the indicators included in MODA and in MPI. Out of the seven to eight dimensions included in MODA, four are age-specific, hence the lower number of observations for these indicators. Nutrition and health is measured for children under five while education and information apply only to children aged five and above. In the four countries included in the study, water and sanitation are among the most common MODA deprivations. In addition, housing deprivation is high in Cambodia, while Mali presents high rates of deprivation in housing, nutrition and health. Violence (only included in Ghana and Mongolia), is the most common deprivation in Ghana. The least common MODA deprivation across all four countries is information access.

MPI deprivations are all defined at the level of the household, giving all children in the same household the same classification, and thus the number of observations does not change between age groups. The most frequent MPI deprivations are related to living conditions, including water, sanitation, cooking fuel, electricity and flooring. The least common MPI deprivations vary across countries. While child mortality is the least common deprivation in Cambodia, nutrition and school attendance deprivations are low in Ghana, asset deprivation is low in Mali, and nutrition and school attendance deprivations are low in Mongolia.

Table 4 also shows that although similar indicators are included in MODA and MPI, the way the deprivations are defined significantly changes the percentage of deprived children. One example is sanitation deprivation that is consistently higher according to the MPI definition, compared with MODA across all four countries: the MPI indicator defines a household with a shared sanitation facility as deprived, while MODA defines only unimproved sanitation as deprivation.

Both measures correctly identify the highest rates of deprivation in household dimensions, in particular water and sanitation, thus suggesting that lack of infrastructure is the main driver of deprivation impacting children's life. However, since deprivations concerning household material endowment are weighted less in the MPI (each of the indicators is worth 1/18), they are likely to affect the overall rate of deprivation differently than the MODA dimensions, and therefore to identify different children as deprived.

In this study, MODA classifies a child as poor if the child has two or more deprivations, while the MPI defines a child as poor if the child lives in a household with an MPI score above 0.33: the two thresholds are more similar than they appear, as two dimensions amount to exactly 0.33 of the total when the total number of dimensions is six, and to 0.4 when the total is five (therefore setting a higher poverty line than the MPI); both measures count dimensions giving them equal weight, therefore this result is not surprising.

Table 5 (page 18) shows the percentage of multidimensionally poor children using these cut-offs. The percentage of poor according to the MODA definition is significantly higher compared to the percentage of poor according to the MPI in all countries except in Mali where the MPI classifies

more children as poor compared to MODA (74 versus 67 per cent). Table 5 also describes to what extent MODA and MPI identify the same children as poor and shows that the overlap between the two measures varies considerably between countries. In Cambodia, Ghana and Mongolia the overlap of the two measures ranges from 43 per cent (in Mongolia), to a very low 7.5 per cent (in Mongolia), while 23-33 per cent of children are classified as poor according to MODA, but live in a non-poor household according to the MPI. The reverse mismatch – children living in MPI-poor households but not classified as deprived by MODA, is generally low, between 5 and 6 per cent. In Mali, however, the mismatch is greater among children who are living in MPI-poor households but are not classified as poor according to MODA (15 per cent). Overall poverty rates are higher in Mali relative to the other three countries: 74 and 67 per cent of children, according to MPI and MODA, respectively. Mali is also the country where the overlap between the MPI poor and MODA poor is the largest, with 59.5 per cent classified as poor by both MPI and MODA.

Table 4 – Percentage of children (0-17 years) deprived in each dimension

	Cambodia			Ghana			Mali			Mongolia		
	%	sd	N	%	sd	N	%	Sd	N	%	sd	N
MODA deprivations												
Nutrition	26.6	44.2	3,317	26.5	44.1	7,411	54.4	49.8	23,572	38.0	48.6	3,407
Health	32.2	46.7	3,339	25.6	43.6	7,392	68.7	46.4	23,625	3.7	18.8	3,384
Education	16.9	37.4	8,963	23.4	42.3	19,442	40.4	49.1	46,483	4.8	21.3	8,304
Information	8.2	27.4	8,963	10.0	29.9	19,442	8.27	27.5	46,673	2.3	15.1	8,307
Water	59.8	49.0	12,302	32.7	46.9	26,908	26.6	44.2	70,517	40.0	49.0	11,752
Sanitation	59.8	49.0	12,302	43.2	49.5	26,908	66.2	47.3	70,517	17.8	38.2	11,752
Housing	53.6	49.9	12,302	24.2	42.8	26,908	51.2	50.0	70,507	12.2	32.7	11,752
Violence	–	–	–	73.0	44.4	26,083	–	–	–	24.8	43.2	10,557
MPI deprivations												
Nutrition	43.1	49.5	12,302	11.5	31.9	26,908	35.0	47.7	70,517	2.4	15.3	11,752
Child mortality	4.45	20.6	12,302	25.4	43.5	26,908	–	–	–	13.4	34.1	11,752
School attendance	10.5	30.6	12,302	11.8	32.2	26,908	67.2	47.0	70,517	2.9	16.7	11,752
Education level	27.8	44.8	12,302	15.3	36.0	26,908	39.8	49.0	70,517	9.5	29.3	11,752
Assets	8.9	28.5	12,302	21.5	41.1	26,908	14.3	35.0	70,517	5.8	23.4	11,752
Water	47.2	49.9	12,302	29.9	45.8	26,908	35.4	47.8	70,517	40.2	49.0	11,752
Sanitation	66.1	47.3	12,302	87.2	33.4	26,908	74.2	43.7	70,517	48.0	50.0	11,752
Floor	6.21	24.1	12,302	12.1	32.6	26,908	67.7	46.7	70,517	26.4	44.1	11,752
Electricity	67.3	46.9	12,302	42.7	49.5	26,908	78.2	41.3	70,517	22.4	41.7	11,741
Cooking fuel	89.4	30.8	12,302	86.0	34.7	26,908	99.0	9.9	70,517	71.1	45.3	11,752

Table 5 – Multidimensional poverty among children 0-17 years according to MODA and MPI and overlaps of the two measures

	Cambodia (N= 12,302) %	Ghana (N=26,908) %	Mali (N=70,517) %	Mongolia (N=11,752) %
Poverty estimates				
MPI poor ^a	49.0	35.3	74.4	12.4
MODA poor ^b	66.7	62.7	67.0	30.9
p-value (MPI=MODA)	0.00	0.00	0.00	0.00
Overlaps				
MODA poor, not MPI poor	24.1	32.5	7.5	23.4
MPI poor, not MODA poor	6.4	5.2	14.9	4.9
MPI poor and MODA poor	42.6	30.2	59.5	7.5

^a An MPI-poor child is defined as a child living in a household with an MPI above 0.333

^b A MODA-poor child is defined as a child with two or more deprivations

To understand the source of the mismatch in the identification of MD poor children, we analyse where the overlap falls between MODA and MPI deprivations Table 6 (page 19) compares deprivation rates in each dimension among children who are deprived according to MODA, but not to MPI, with the deprivation rates of children who are deprived in both measures. The table shows the same comparison for MPI deprivations. MODA-poor children who do not live in MPI poor households are generally better off compared to children who fall in the overlap of the two measures. They have a lower average number of (MODA) deprivations and a lower percentage of children deprived in most dimensions. For example, among children who are MODA poor, but not MPI poor in Cambodia, the average number of deprivations is 2.5, while it is 3 for children who are both MODA and MPI-deprived. The same is true for MPI indicators: in general, children who are identified as deprived according to both measures have higher rates of deprivation in all MPI indicators, compared to those who are MPI-poor only.

Deprivations with little difference between the groups or that are higher among the MODA poor only, mostly include those deprivations that are not covered by the MPI or that are defined in a different way in MPI compared to MODA. These include nutrition, housing and violence. For example, for nutrition, the difference between the group of children who are MODA poor only and all MODA poor children is small, ranging from 0.1pp (Ghana) to 5.6pp (Mali). Similarly, among the highest rates of deprivation for children who are MPI-poor only are the dimensions not included in MODA: cooking fuel, electricity, and education level of the adults in the household.

The results show that both MODA and MPI identify the poorest of children, and that mismatches seem to be due mostly to different definitions of deprivation and the inclusion, or exclusion, of different indicators. Countries in which the extent of deprivation is due mostly to different indicators (for example, cooking fuel in the case of Mali, or the violence dimension in the case of Ghana), or in which the average size of the family is higher, are more likely to present a greater mismatch between the two measures.

Table 6 – Percentage of children deprived in each MODA and MPI deprivation by MODA/MPI poverty overlap status

	MODA poor, ^a not MPI poor ^b				MPI poor, not MODA poor ^c				MODA poor and MPI poor			
	Cambodia	Ghana	Mali	Mongolia	Cambodia	Ghana	Mali	Mongolia	Cambodia	Ghana	Mali	Mongolia
MODA deprivations												
Nutrition	35.6	35.5	67.1	62.1	–	–	–	–	30.5	35.4	61.5	60.7
Health	28.4	27.0	68.6	6.4	–	–	–	–	50.7	36.7	83.0	6.9
Education	17.8	27.9	34.4	11.0	–	–	–	–	28.8	35.2	57.2	14.2
Information	3.5	9.1	7.5	3.2	–	–	–	–	18.2	15.9	13.3	8.3
Water	76.0	36.4	28.9	78.0	–	–	–	–	81.7	49.0	37.2	80.3
Sanitation	71.0	54.0	72.4	38.6	–	–	–	–	89.0	63.1	86.3	47.3
Housing	73.7	37.1	58.4	27.8	–	–	–	–	67.9	36.2	70.8	23.5
Violence	–	87.7	–	50.6	–	–	–	–	–	83.0	–	47.1
N. deprivations	2.5	2.6	2.5	2.3	–	–	–	–	3.0	2.9	2.9	2.4
MPI deprivations												
Nutrition	–	–	–	–	75	30.3	56	13	66.6	26.5	44.8	11.9
Child mortality	–	–	–	–	7.2	57.1	–	58.8	8.1	51.7	–	52.5
School attendance	–	–	–	–	12.1	19.3	71.1	13.6	21.1	33.6	83.2	20.4
Education level	–	–	–	–	40.8	29.3	37.3	31.6	55.6	41.6	55.9	20.6
Assets	–	–	–	–	2.2	30.2	7.7	13.3	18.6	39.2	20.3	35.3
Water	–	–	–	–	32.8	8.8	14.6	46.3	64	61.5	50	87.2
Sanitation	–	–	–	–	63.4	94	54.1	71.9	92.7	95.3	90.6	92.7
Floor	–	–	–	–	7.4	7.5	51.6	61.2	8.3	28.7	88.9	68.4
Electricity	–	–	–	–	78.7	63.9	72.2	46	91.8	78	95.1	82.1
Cooking fuel	–	–	–	–	96.3	97.8	99.7	93.9	99.3	99.7	99.9	98.4

^a A MODA-poor child is defined as a child with two or more deprivations

^b An MPI-poor child is defined as a child living in a household with an MPI above 0.333

^c MODA deprivations are not available for children who are poor according to only MPI, and MPI deprivations are not available for children who are only MODA poor

One key element of any indicator of child poverty is that it should be able to identify inequalities between different groups of children, and correctly report them. In particular, a good indicator should be able to point at differences within the household. Here we compare how MODA and MPI report gender differences in deprivation.

Table 7 (page 20) shows the percentage of children classified as poor, separated by gender of the child. Both measure some significant degree of gender differences: the MPI shows that boys are more likely to live in multidimensionally poor households in Ghana and Mali. The same difference between the genders is found in MODA-poor children, in all countries. For example, in Cambodia, 65 per cent of girls are classified as poor according to MODA while the corresponding figure for boys is 68 per cent. The difference in deprivation according to MODA is always significant at the 95 per cent confidence level.

Table 7 – Multidimensional poverty among children 0-17 years old according to MODA and MPI by gender

	Cambodia			Ghana			Mali			Mongolia		
	Male (N=6,188) %	Female (N=6,114) %	p-value	Male (N=14,072) %	Female (N=12,836) %	p-value	Male (N=35,654) %	Female (N=34,850) %	p-value	Male (N=6,018) %	Female (N=5,734) %	p-value
MPI poor ^a	50.1	47.8	0.24	36.8	33.8	0.00	75.3	73.5	0.00	12.9	11.9	0.11
MODA poor ^b	68.2	65.1	0.00	63.4	61.9	0.00	67.3	66.7	0.04	32.9	28.8	0.00

^a An MPI-poor child is defined as a child living in a household with an MPI above 0.333

^b A MODA-poor child is defined as a child with two or more deprivation

Tables 8a (page 21) and 8b (page 22) break down the gender difference in MODA and MPI, reporting the difference in each dimension by country and age group (the latter only for MODA). In general, boys appear to be more deprived than girls in most MODA dimensions and in each country; notably, there are no relevant gender differences in Nutrition and Health for children under five, while boys are more likely to be deprived in Education. This is consistent with what we see in other countries, where gender differences tend to appear later in life, and boys result more deprived in education because they are more likely to drop out of school.⁹

Gender differences in MPI deprivations are found mostly in Ghana and Mali, the countries for which we also observe a difference in overall levels of deprivation. Again, boys are more likely to experience household-related deprivation, which seems to indicate some sort of selection of boys into poorer households. This hypothesis, however, is not confirmed by further analysis.

In general, it seems that MODA is more sensitive to gender differential in deprivation; however, the source of this difference is not clear. Additionally the differences in absolute terms are of small entity. Given the complexity of gender relationships, it is possible that neither measure is adequate to fully capture the extent of gender differential in deprivation.

⁹ See, for example, the national MODA studies of Tanzania (https://www.unicef.org/tanzania/resources_18551.html) and Malawi (https://www.unicef.org/malawi/resources_18568.html)

Table 8a – Gender differences by MODA dimension and age group

Children 0-5					Children 5-17				
Country		Female	Male	P-value	Country		Female	Male	P-value
Cambodia	Health	33.0	35.6	0.47	Cambodia	Education	16.2	19.5	0.00
	Nutrition	27.5	25.8	0.23		Information	17.3	16.9	0.88
	Water	59.5	63.7	0.03		Water	61.2	62	0.03
	Sanitation	63.5	66.3	0.15		Sanitation	62	62	0.15
	Housing	42.8	44.6	0.00		Housing	56.3	57.7	0.00
Ghana	Health	24.7	26.5	0.10	Ghana	Education	22.0	24.7	0.00
	Nutrition	26.5	26.5	0.17		Information	10.2	9.7	0.12
	Water	31.3	35.1	0.01		Water	31.9	33	0.01
	Sanitation	42.6	44.8	0.00		Sanitation	42.1	43.8	0.00
	Housing	22.8	23.6	0.05		Housing	24.2	25	0.05
	Violence	76	78.5	0.01		Violence	71.3	71.5	0.01
Mali	Health	68.3	0.13	0.00	Mali	Education	43.4	37.4	0.00
	Nutrition	53.8	0.08	0.00		Information	8.1	8.4	0.01
	Water	27.6	27.5	0.03		Water	25.6	26.5	0.03
	Sanitation	67.8	68.4	0.00		Sanitation	63.7	66.8	0.00
	Housing	52	51.9	0.00		Housing	49.8	51.9	0.00
Mongolia	Health	3.7	3.7	0.57	Mongolia	Education	3.4	6.1	0.00
	Nutrition	36.6	39.4	0.10		Information	2.0	2.6	0.03
	Water	42.4	43.5	0.00		Water	36.9	40.5	0.00
	Sanitation	19	20.8	0.02		Sanitation	15.9	17.8	0.02
	Housing	10	11.7	0.86		Housing	12.8	12.7	0.86
	Violence	29.3	33.6	0.00		Violence	20.6	23.8	0.00

Table 8b – Gender differences by MPI deprivation

Dimension	Cambodia			Ghana			Mali			Mongolia		
	Female	Male	P-value	Female	Male	P-value	Female	Male	P-value	Female	Male	P-value
Nutrition	43.5	42.8	0.020	10.6	12.3	0.009	34.1	35.9	0.000	2.3	2.5	0.593
Child mortality	4.6	4.3	0.453	25	25.7	0.011	.	.	.	13.4	13.4	0.901
School attendance	9.9	11.1	0.117	11.4	12.1	0.000	66.6	67.7	0.002	2.6	3.1	0.145
Education level	26.9	28.7	0.142	14.5	16	0.000	40	39.7	0.922	9.4	9.5	0.348
Assets	9.2	8.6	0.557	21.4	21.6	0.683	14.3	14.4	0.114	5.3	6.3	0.016
Water	46.6	47.9	0.268	29	30.8	0.003	35	35.7	0.002	38.7	41.6	0.000
Sanitation	64.8	67.4	0.023	86.3	88.1	0.000	73.5	74.9	0.000	47.8	48.1	0.750
Floor	6.2	6.2	0.625	11.3	12.9	0.001	66.5	69	0.000	26	26.7	0.581
Electricity	66.7	67.9	0.055	41.2	44.2	0.000	77.1	79.3	0.000	20.9	23.8	0.001
Cooking fuel	88.8	90	0.088	85.4	86.5	0.000	98.9	99.1	0.204	70.8	71.4	0.593

4.2. Sensitivity of the measures to the aggregation method

In order to identify to what extent the discrepancies in overlap can be explained by the differences in aggregation approach between the two measures we created a new MODA using the same methodology as in the construction of the MPI by weighting the indicators. MODA dimensions were aggregated by replicating the conceptual weighting scheme of the MPI, defining three dimensions weighted by one-third each. The three household dimensions (sanitation, water, and housing) were aggregated in a 'living standard' dimension, while the others (nutrition and health for under five; education and information for older children) were weighted one-third each. The decision on this scheme of aggregation was made to emulate the MPI weighting as far as possible, but also from the recognition that there are substantial differences between what is defined as a dimension or as an indicator in the two measures. As mentioned earlier, many of the MPI indicators are more similar to MODA dimensions, and include a process of aggregation of sub-indicators using the union approach (e.g.: the water indicator in the MPI and the water dimension in MODA).

When MODA is aggregated using a similar approach to the MPI, the overall percentage of children classified as poor decreases and the poverty estimates according to MODA become closer to the MPI poverty estimates in all cases, except in Mali where the gap between MODA and MPI increases since MODA already delivered a lower child poverty rate than MPI (see Table 9).

The overall percentage of children who are not identified as poor by both MODA and the MPI is similar using the MODA approach with MPI weights, compared to the original MODA. However, the percentage of MODA-poor children not living in MPI-poor households decreases and the percentage of children who live in MPI-poor households but are not MODA poor increases. For example, for Cambodia, 24 per cent of children are MODA-poor but not living in MPI-poor households. This decreases to 15 per cent when we apply the MPI weighting scheme to MODA. However, the previously low percentage of children living in MPI-poor households but not classified as poor according to MODA (6.4 per cent) increases to 17.6 per cent when the MPI weights are used in the example of Cambodia.

Table 9 – Multidimensional poverty among children 0-17 years old according to re-aggregated MODA and overlaps with MPI

	Cambodia (n = 12,302) %	Ghana (n = 26,908) %	Mali (n = 70,517) %	Mongolia (n = 11,752) %
Poverty estimates				
MPI poor ^a	49.0	35.3	74.4	12.4
Original MODA ^b	66.7	62.7	67.0	30.9
MODA (re-aggregated) ^c poor	46.5	58.7	61.3	21.3
Overlaps				
MODA ^c poor, not MPI poor	15.1	30.8	8.9	16.3
MPI poor, not MODA ^c poor	17.6	7.5	22.1	7.4
MPI poor and MODA ^c poor	31.4	27.9	52.4	5.0

^a An MPI-poor child is defined as a child living in a household with an MPI above 0.333

^b A MODA-poor child is defined as a child with two or more deprivations

^c The re-aggregated MODA is constructed by weighting dimensions (similar to the MPI) and using a cut-off of 0.333 to define a child as poor

Two different forces drive these results: first, the MPI weighting scheme gives proportionally less importance to deprivation related to material conditions of the household, while MODA in its original form gives them equal weight. Thus, applying the MPI weighting scheme to MODA aligns the two measures more. However, the application of the same weighting scheme magnifies the differences due to different indicators, therefore increasing the degree of mismatch between the two measures.

Applying the union approach to the MPI is less straightforward, because of the different notion of indicators and dimensions of the two measures, and it is therefore left out of the present analysis.

Finally, we simulate a change in deprivation to test the sensitivity of the two measures.

In the simulations we tested the effect on the overall MODA/MPI when we changed the values of particular indicators. Four indicators, included in both the MODA and MPI, were chosen for the simulations: school attendance, education (attendance plus attainment), water and sanitation.

In the school attendance simulation we assumed that all children of school age were currently attending school. Table 10 (page 24) shows that the simulation reducing the attendance deprivation has little effect on the overall MODA measure, while the effect on the MPI is somewhat larger. The largest effect of attendance is found in Mali, which is also the country with the highest attendance deprivation in the original data.

We then simulated a complete eradication of deprivation in the education dimension, which includes both attendance of primary age children, and completion of primary education for children older than primary school age. The simulation therefore classified all children as non-deprived in education, mimicking a situation in which all children of primary school age are enrolled in school, and all older children have completed primary education. The education simulation shows, similarly to the attendance simulation, a larger effect on the MPI and the largest effects are again found in Mali where education deprivation is the highest of all the countries included in the study.

For example, removing all education deprivation for Mali reduces the MPI by 35 per cent compared to only 11 per cent for MODA.

In the water simulation, water deprivation was eliminated in a random number of individuals among those deprived, equivalent to 10 per cent of the total sample, stratified by urban and rural areas. This was done equally for both MODA and MPI indicators. Sanitation deprivation in MODA is defined as having an unimproved toilet facility, while in the MPI sanitation deprivation also includes having a shared toilet facility. In the sanitation simulation, only having an unimproved toilet facility was considered (not including shared facility) since it exists in both poverty measures. Similar to the sanitation deprivation, the water deprivation was eliminated in a random number of individuals among those deprived, equivalent to 10 per cent of the total sample. The effects of the water and sanitation simulations are similar for MODA and MPI ranging from a reduction in MODA/MPI from 0.2 to 4.3 percentage points. Although the percentage point decrease is similar across countries, the percentage change is larger in Mongolia because of lower initial MODA/MPI poverty estimates.

Table 10 – MPI/MODA multidimensional poverty estimates and effects on overall estimates of simulated improvements in schooling, water and sanitation

	Ghana		Cambodia		Mali		Mongolia	
	MODA	MPI	MODA	MPI	MODA	MPI	MODA	MPI
Original estimates (%)	62.7	35.3	66.7	49.0	67.0	74.4	30.9	12.4
Simulated estimates (%):								
No attendance deprivation	62.1	31.9	66.6	46.2	63.4	59.5	30.7	11.2
No education deprivation	58.7	30.5	64.7	41.3	59.9	48.5	29.7	11.1
Water deprivation -10pp ^a	60.4	34.4	63.7	48.5	65.2	74.2	26.6	11.7
Sanitation deprivation -10pp	60.6	34.7	63.7	47.5	64.2	74.2	28.4	9.8
Change (%):								
No attendance deprivation	-1.0	-9.6	-0.1	-5.7	-5.4	-20.0	-0.6	-9.7
No education deprivation	-6.4	-13.6	-3.0	-15.7	-10.6	-34.8	-3.9	-10.5
Water deprivation -10pp	-3.7	-2.5	-4.5	-1.0	-2.7	-0.3	-13.9	-5.6
Sanitation deprivation -10pp	-3.3	-1.7	-4.5	-3.1	-4.2	-0.3	-8.1	-21.0
Change (pp):								
No attendance deprivation	-0.6	-3.4	-0.1	-2.8	-3.6	-14.9	-0.2	-1.2
No education deprivation	-4.0	-4.8	-2.0	-7.7	-7.1	-25.9	-1.2	-1.3
Water deprivation -10pp	-2.3	-0.9	-3.0	-0.5	-1.8	-0.2	-4.3	-0.7
Sanitation deprivation -10pp	-2.1	-0.6	-3.0	-1.5	-2.8	-0.2	-2.5	-2.6

^a percentage points

5. DISCUSSION

The analysis presented here indicates that the two proposed approaches for measuring child MD poverty can lead to different estimates of the overall poverty rate, with MODA typically leading to significantly higher rates of child MD poverty. Nor do the two measures select the same children as MD poor: there is a persistent degree of mismatch across all four countries. The greatest overlap between the two measures identifying the same children as poor is 60 per cent in Mali and the least overlap is just 8 per cent in Mongolia. These correspond to the countries with the highest and lowest overall rates of child MD poverty, respectively. This suggests, at least tentatively, that the lower the overall poverty rate, the lower the overlap in children identified as poor by both measures. This also suggests that the MPI identifies children who suffer from a more severe degree of deprivation.

The pattern of mismatches confirms the previous hypothesis. Typically, children who are classified as poor by both measures, experience a higher degree of deprivation in both MODA dimensions and MPI indicators. In other words, among the set of children identified as poor according to MODA, those with more deprivations are also more likely to be classified as poor by the MPI, and vice-versa. This is good news insofar as it suggests that the MPI can capture the most deprived children as poor. However, evidence indicates that there is a sizeable group of children who would nevertheless be missed by the MPI.

The mismatch between the two measures is driven by two key factors: the choice of different indicators, and a different weighting and aggregation scheme. Reweighting MODA using the MPI scheme leads to lower estimates of child poverty and brings the two estimates closer together but there continue to be sizeable mismatches in terms of the children identified as poor by the two measures. In fact, these mismatches actually become larger when MODA is reweighted using the MPI approach, a consequence of the different choice of indicators. The mismatch is likely to be higher in contexts where some key indicators drive most of the overall deprivation rates.

MODA seems to be more sensitive to gender differential in deprivation, however the MPI managed to detect some gender differences with boys more often found in poor households compared to girls. These findings were confirmed by MODA's poverty classification, as well, with boys more deprived in several dimensions.

Since child MD poverty will be tracked over a 15-year period under the SDGs, it is interesting to ask how the two indicators would evolve for a given underlying change in child well-being. Our simulations show that improvements in individual child indicators such as education would lead to greater changes in the MPI, while improvements in household-level indicators, such as water and sanitation, would lead to greater changes in MODA. This is due in part to the nature of the weighting scheme and the level of measurement across the two measures. Since the MPI is measured at the household level, deprivation for even one child can raise the score of everyone in the household, and by the same token, an improvement for that child can reduce the score of everyone in the household, leading to potentially greater changes in child poverty. Since MODA uses the child, rather than the household, as the unit of analysis, an improvement for a particular child only affects

that child and not anyone else in the household. At the same time, MODA gives equal weight to household dimensions, on the assumption that the environment in which she grows up is a fundamental part of child well-being, and part of her fundamental rights as much as other dimensions. In doing so, a change in the household component of the measure can affect the overall estimates of deprivation in a substantial way.

No poverty measure is perfect, and researchers and policy analysts often face a trade-off between a measure with high construct validity versus a simpler, less valid measure that is easier to operationalize and monitor. Starting from scratch and building a child MD poverty measure with a high degree of construct validity is cumbersome, while obtaining an estimate of the number of children living in MPI poor households is readily available; the MPI also has the advantage of being suitable to measure MD poverty for the whole population. On the other hand, it lacks a specific focus on children and, as it captures a more severe degree of deprivation, is likely to be of less use for middle-income countries.

This paper has shown that the two approaches, while sharing many similarities, do not lead to the same results. The paper also shows where and why there are differences between the two measures, in their comparable, global declination: this should help countries and decision-makers to weigh up the benefits and disadvantages of each approach. The paper however does not touch on the subject of national adaptation of either of the two measures, which entails additional problematics. In deciding on their individual approach to measuring and tracking the SDG Target 1.2, countries will need to reflect on both the underlying purpose of the target, and to bear in mind the inevitable trade-offs between these two approaches to measuring child MD poverty

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