Rahul Lahoti (Azim Premji University) and Stephan Klasen (University of Goettingen)

How Serious is the Neglect of Intra-Household Inequality in Multi-Dimensional Poverty and Inequality Analyses? Theoretical Insights and Evidence from India

The ultimate objective of measuring poverty and inequality is to determine the well being of individuals. But most empirical analyses of poverty take a household perspective and determine whether entire households are poor. Taking such a household perspective assumes that resources are distributed equally, or according to need, within the household. But the assumptions of equal or needs-based distribution are inconsistent with the theoretical literature on intra-household bargaining.

Individual-level data are typically available in standard survey instruments. Yet in existing popular multi-dimensional poverty measures for developing countries such as the Multidimensional Poverty Index (MPI) used by UNDP and OPHI, deprivations are also determined at the household level; and all individuals within the household are assigned the deprivation and poverty status of the household without any differentiation within the household.

The bias this generates in household-based multidimensional poverty assessments depends on how the individual-level data is combined to create a household-level indicator. The deprivation thresholds can be defined in a restrictive way where the achievement of the worst-off member of the household has to be above the deprivation threshold for the entire household to be non-deprived. In these cases the deprivation rates among individuals would be higher in the household-based analysis (as long as not all households are indeed equally deprived in that dimension) than in an individual-level analysis.

But deprivation thresholds could also be defined in an expansive way, where only the achievement of the best-off individual has to be above the threshold for the entire household to be non-deprived. In such cases, the deprivation rates among individuals would be lower in the household-based analysis (if not all are as well off as the best-off) as compared to an individual-based analysis. UNDP and OPHI's MPI use a mix of indicator threshold definitions – restrictive and expansive – so that the net bias of their neglect of intra-household inequality is not clear a priori. The way these thresholds are defined also determines whether inequality in multidimensional deprivation is understated or overstated in a household-based analysis, compared to an individual-level analysis.

There have been some survey-based individual multidimensional measures proposed exclusively for different demographic groups within the population in developing countries (Alkire et al., 2013; Roche, 2013; Espinoza-Delgado and Klasen, 2018; Vijaya, Lahoti & Swaminathan, 2014), but most focus only on a subset of the population like women or children. While these studies are instructive, they are only focused on particular groups and thus cannot assess poverty at the individual level for the entire population or assess to what extent household-based analyses under- or overstate individual poverty and inequality. Also, they are mostly based on particularly detailed, unique, and often custom-made surveys using small samples, making replication at higher scales and across contexts difficult (and costly). And none of these papers consider the biases associated with restrictive and expansive definitions of household-level poverty, either theoretically or empirically.

To our knowledge, ours is the first paper to present a multi-dimensional poverty measure at the individual level that accounts for intra-household inequality across the entire population using a standard multi-topic survey. We aim to ascertain if individual poverty and inequality among them is under- or overstated when using a household-based analysis as compared to an analysis based on individual level data. We also show theoretically how the use of restrictive and expansive thresholds biases poverty and inequality using household-level assessments.

Using data from India, we use our measure to estimate individual poverty and inequality as well as the size of the bias of household-based analyses. In our application, we find that women and older individuals in India are far more deprived and poor than men and younger individuals. This simple fact is obscured, and gender and generational differences are largely absent, when measuring poverty and inequality using the standard household-based approach. In particular, the poverty rate of females is higher by 14 percentage points than men in our individual MPI measure but only 2 percentage points higher when using the household-based measure. The poverty rate among individuals aged fifty and over is higher by 46 percentage points than among children aged between 7 and 18 years of age in the individual measure, compared to only 2 percentage points when using the household-based measure. 22 percent of males and 27 percent of females are misclassified as poor or non-poor using the household-based measure, and the household-based measure underemphasizes the contribution of the education dimension to multidimensional poverty. Using a decomposable inequality measure, we find the contribution of intrahousehold inequality to the total inequality in the individual deprivation score to be around 30 percent, and total (relative) inequality is also some 10 percent higher using the individual-based measure, while using an absolute inequality measure, it is even 30 percent higher. We also find that in over 60 percent of households the average deprivation level of women in the household is greater than the average deprivation level of men. When we repeat a similar analysis for five other countries (Ecuador, Indonesia, Iraq,

Mexico, and Tanzania) for the World Bank's Poverty and Shared Prosperity Report (results not reported in this paper), we find that multidimensional poverty is more prevalent among women than among men in all the five countries, suggesting our findings for India also apply to other contexts.

At the same time, we note that our approach to individualize poverty measurement can only be seen as a first attempt in this direction and is hampered by insufficient data on individual well-being in standard household surveys; improved data would likely lead to even larger differentials in poverty by age and gender, at least in a country such as India.