

Integrating Inter- and Intra-Personal Inequality in Additive Poverty Indices

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Inequality is detrimental to growth, poverty reduction and human development in general. It also nourishes hazardous social tensions as once again demonstrated by a couple of violent protests like that of Chilean students in 2011 or the mass protests in Israel. This being said, it is only consequential that Amartya Sen (1976) requires any reasonable poverty index to be sensitive to inequality. In fact, if poverty is defined as the “lower end” of well-being, then every poverty index is a function of attribute distribution, a fact that shifts inequality into the centre of every poverty analysis.

In a multidimensional framework, poverty attributes are no longer restricted to a perfect substitute relationship. In response, inequality is no longer confined to the spread of distributions within a poverty dimension. Now it also comprises the joint distribution of attributes across a population. The former has become known as intra-personal, the latter as inter-personal inequality. Whereas intra-personal inequality has been satisfactorily captured by majorization properties, this paper claims that this is not the case for interpersonal inequality.

Inter-personal inequality is commonly equated with association-sensitivity, i.e. the relationship among poverty attributes. This paper, however, claims that though interpersonal inequality is closely related to the principle of association-sensitivity, it exceeds the same. It further claims that the narrow definition has rather serious implications. The first is that the property of association-sensitivity as defined to date violates the economic principle of pareto-efficiency whenever a complementary relationship exists among attributes. The second is that the equation produced a situation where the existence of simultaneous deprivations serves as the main justification for poverty measures to go beyond simple averages and yet is often neglected in the actual calculations.

Both issues are addressed with the introduction of two new properties. The first ensures the pareto-efficiency of association-sensitive switches of poverty attributes. The second is based on a broader definition of inter-personal inequality as the association-sensitive spread of simultaneous deprivations across a population and conditions the extent to which an inequality increasing switch increases poverty on the relationship among attributes. The new axioms are utilised to derive a new, uniquely characterised class of poverty measures that is actually the first class that though additive is nevertheless sensitive to both intra- and inter-personal inequality. An empirical application to a sample of 28 countries reveals the relevance of the new methodological approach. In particular, it is demonstrated how the different types of inequality distinctively affect poverty rates and country rankings.

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