**Determinants of health inequality: Evidence from Nonparametric Panel Data Models, 1970-2010**

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The analysis of health inequalities is a critical topic as a distinct dimension of the performance of health systems (WHO). This study reviews the linearity assumption underlying the majority research on the determinants of health inequality and conducts a nonparametric investigation the effects of income and education inequalities, and development on health inequality over the period 1980-2010, using a panel dataset covering 131 countries distinguished by their level of development and geographical area. One of the main advantages of this model is that no functional distribution is imposed for estimating the relationship between factors and health allowing for the presence of non-linearity.

The income Gini index is obtained from the   Standardized World Income Inequality Database (SWIID version 4.0). The SWIID incorporates comparable Gini indices of net income inequality of a greater coverage across countries and over time.

The educational inequality is estimated by using the Gini index of education as a measure of the distribution of years of schooling. We take into consideration, for the ﬁrst time, the changes over time in the duration of educational stages, in each country and for each age group (W. Benaabdelaalii et al., 2012).

Health inequality is calculated using different measures of inequality such as the Gini coefficient, the Generalized Entropy Index { GE (-1) , GE (0) , GE (1) , GE (2) } and the Atkinson Index { A (0.5) , A (1) , A (2) } as a measure of the distribution of length of life. Our calculations are based on recent estimates of life tables provided by the United Nations Department of Economic and Social Affairs UNDESA (2013). This distribution is presented over age intervals (0–1, 1–5, 5–10, … , 85+), with the mortality rates and average age at death specified for each interval. Compared with UNDP data on inequalities in health (health inequality data???, our dataset has present the advantage of being, for the first time, longitudinal - which allows long-term analysis of the dynamic of health inequality – and cover several health inequality measures. Our approach is to consider inequality in the entire distribution of the expected length of life obtained from abridged life tables (*World Population Prospects*, 2012) without exclusion of any part of the distribution. Excluding newborns or children under 5 would mean capturing only partial inequality in the distribution.

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