International Inequalities Institute

The Measurement of Health Inequalities: Does Status Matter?

Working paper 6

October 2016

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JEL Codes: D63, H23, I18

Keywords: health inequality, categorical data, entropy measures, health surveys, upward status, downward status

Link to working paper: http://eprints.lse.ac.uk/67976/1/Costa-Fonta_Measurement%20of%20Health_Author_2016.pdf

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The challenge of measuring health inequality

Measuring health inequality presents a challenge quite different from the standard problem of measuring income or wealth inequality. The challenge principally lies in the measurement of health itself: health cannot be assumed to be directly and unambiguously observable and it may not make sense to treat it as a continuous variable. As a consequence, one has to use indirect methods that may involve elicitation of a person's self-assessed health status or explicit modelling using observables that are thought to be related to health. Such indirect methods can be problematic. So, the purpose of this paper is to examine the main practical approaches to inequality measurement in the health context and the extent to which different assumptions about health status affect inequality comparisons.

Why are indirect approaches to health measurement typically problematic?

The first reason is because of the assumptions that have to be adopted in modelling health: if health status is taken as a latent variable, with what observables is it correlated?1 There is evidently room for several alternative answers: some research suggests that SAH correlates with mortality, some with hospital records (Heien 2015, Idler and Benyamini 1997). The second – and perhaps more fundamental – reason that such approaches are problematic is that health cannot be taken as a monetary-equivalent measure and that, in many health models, it should be treated as an ordinal or categorical variable rather than a continuous variable. That being so, standard methods of inequality analysis and standard properties of inequality indexes do not apply (Van Doorslaer and Jones 2003). So, how is one to measure inequality?

The measurement of health inequalities usually involves either estimating the concentration of health outcomes using an income-based measure of status or applying conventional inequality-measurement tools to a health variable that is non-continuous or, in many cases, categorical. However, these approaches are problematic as they ignore less restrictive approaches to status.

What do we do in this paper?

The approach in this paper is based on measuring inequality conditional on an individual's position in the distribution of health outcomes: this enables us to deal consistently with categorical data. We examine several status concepts to examine self-assessed health inequality using the sample of world countries contained in the World Health Survey. We also perform correlation and regression analysis on the determinants of inequality estimates assuming an arbitrary cardinalisation. Even if one has very good, carefully collected data on self-assessed health, almost always one has to deal with the fact that the data will be categorical in nature and require special treatment in order to make reliable inequality comparisons.

This paper addresses the main theoretical and practical difficulties presented by the measurability problem of health-status inequality and, in doing so, examines the problems of working with self-assessed health (SAH) indicators, the use of alternative approaches to the measurement health inequality and the information content of different concepts of status. We compare our approach to the case of inequality analysis based on a standard but arbitrary cardinalisation of health using standard inequality indices. We have followed the Cowell and Flachaire (2014) status-inequality approach that defines a family of inequality indices indexed by a sensitivity parameter . The status concept could be downward or upward-looking, and we employ an arbitrary cardinalisation to measure results from generalised entropy indices.

Findings and implications

Our findings indicate major heterogeneity in health inequality estimates depending on the status approach, distributional-sensitivity parameter and measure adopted. We find evidence that pure health inequalities vary with median health status alongside measures of government quality.

The results from this paper go towards the identification of a more appropriately based definition of health status and of health-inequality measures. We provide researchers with a simple means of testing alternative ways of measuring inequalities of non-cardinal outcomes that may have significant policy implications. This is particularly important when one takes account of the fact that measures of health inequality are used to rank health systems, and increasingly measures of well-being are used by the World Health Organisation and other government bodies to evaluate institutions and public policies.

The paper has important policy implications. First, our findings suggest that government attempts to reduce health inequalities need to pay specific attention to the nature of the data, and they need to specify the sensitivity to inequality in different parts of the distribution. Second, we find evidence of heterogeneous determinants of different inequality measures. Our results suggest robust evidence that health inequalities are sensitive to some measures

of institutional performance (e.g., government effectiveness). However, these results need to be taken with caution given the small number of observations.

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