

Assessing the health state/disability score of the elderly in the slums: An analysis using the Frontier method

Extended abstract:

Recent studies have tried to identify parameters contributing to health performance among the older persons. For example, education is widely recognized as having a significant and positive impact on elderly health performance. Education is thought to support the cognitive reserve capacity; and studies confirming this idea suggest that people with a high educational level have a lower risk of developing dementia than people with a low educational level. Similarly, poorer linguistic ability in early life and lower mental ability scores in childhood appear to be strong predictors of poor cognitive function and dementia in later life. Factors other than IQ and education may also affect older persons' health performance. Thus, several studies have suggested that some old age-related diseases are correlated to variables such as occupation, professional or leisure activities, and lifestyle; all of these variables have therefore been considered to be associated with older persons' health score.

This study explores the relationship between health score among older persons and occupational activities, defined in a broad sense (i.e., including professional, leisure, physical, and other activities), accounting the influence of age and educational attainment, as well as factors related to social and economic status. We measure the health performance using the disability scores from the WHO. In our estimation strategy, we first consider the WHODAS II – 12 items score and thereafter simultaneously analyze several dimensions of health state description (cognitive, mobility, pain and discomfort, sleep and affect, etc.). We use individual data collected during the first panel survey of the aging component of Nairobi DSS. This survey focuses on older people living arrangements in Nairobi's slums. It comprises information on their health profiles, economic activities, the cares and supports provided and received, and a broad range of self-reported assessments of health and well-being.

Our estimation model consists of a statistical approach widely used in the economic literature, the parametric stochastic frontier approach (SFA). This approach, which was originally developed to measure firms' performance in an output-input setting, has been applied to measure individual performance in other fields of human behavior in which measurable outcomes are driven by observable factors (activities, age, education, etc.).

In practice, SFA corresponds to a composed error term model estimated using econometric tools. On the one hand, we assume that a normally and symmetrically distributed error term catches random noise and, on the other hand, that an asymmetrically (truncated) normally distributed error term represents individuals' distance to the frontier, also known as technical inefficiency in the literature. The proposed model allows us to simultaneously test the effect of other factors that

may potentially drive health performance, with a particular interest in the impact of occupational activities and older persons' living conditions. More concretely, several variables are included in the analysis, but a distinction is made between control variables and factors explaining individual distances to the frontier.