

A New Method to Estimate the Low Income Proportion: Monte Carlo Simulations

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Abstract : Estimation of a proportion has many applications in economics and social studies. A common application is the estimation of the low income proportion, which gives the proportion of people classified as poor into a population. In this paper, we present this poverty indicator and propose to use the logistic regression estimator for the problem of estimating the low income proportion. Various sampling designs are presented. Assuming a real data set obtained from the European Survey on Income and Living Conditions, Monte Carlo simulation studies are carried out to analyze the empirical performance of the logistic regression estimator under the various sampling designs considered in this paper. Results derived from Monte Carlo simulation studies indicate that the logistic regression estimator can be more accurate than the customary estimator under the various sampling designs considered in this paper. The stratified sampling design can also provide more accurate results.

Keywords : poverty line, risk of poverty, auxiliary variable, ratio method

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