

Analysing child and overall poverty in Europe countries through quantitative techniques

Reducing the poverty rate is one of society's greatest challenges. In this sense, this work analyses the poverty in twenty-four European countries through a combination of statistical and multiobjective techniques. Our focus is to analyse the potential impact on overall and child poverty of different features of social transfers. To this end, we first estimate two logistic regressions models with independent micro variables –sociodemographic characteristic– and macro variables –cash social benefits as percentage of GDP, cash child and family benefits as percentage of total cash benefits, percentage of mean tested cash benefits over total cash benefits and percentage of cash benefits spent on poor children. Secondly, a multiobjective optimization problem with two objective functions is defined for each country using the previous models. The aim is to obtain the combination of the macroeconomic variables that minimize the rate of overall and child poverty. Indeed, the solutions obtained must fulfil the condition that the difference between the child poverty rate and the overall poverty rate is lower than 1% and, increases in spending on child benefits must be accompanied by a reduction in mean tested benefits, or vice versa. Overall, our findings suggest that, in most of the countries, given the value of cash benefits over the GDP, there is a tendency to increase child benefits rather than mean tested benefits. At the same time, child benefits appear to be preferred as universal rather than conditional on income. Based on these results, we can suggest certain orientations in the design of benefits to fight global and child poverty in Europe, while reducing the differences between both rates.