ML Poverty: Using Machine Learning to estimate poverty rates in Switzerland at the canton level

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Abstract

Poverty rates in Switzerland are estimated using the SILC (Statistics on Income and Living Conditions) survey carried out by the Swiss Federal Statistical Office (FSO). SILC is a representative survey of households which aims at studying poverty, social exclusion and living conditions on the basis of indicators that are comparable at the European level. While there are about 17,000 respondents annually, this sample size does not allow for the robust estimation of poverty rates at the canton level. For this reason, the FSO has been using Machine Learning (ML) algorithms to predict poverty rates by combining SILC survey responses with administrative data. The challenges addressed in our approach include: handing data from a complex survey design (which includes weights), the estimation of uncertainty and the preservation of citizen privacy. Note: for data protection reasons, we will not be presenting our findings but will present metrics and discuss our approach.