Measuring change of poverty estimates on small area level

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Recent developments in small area estimation methods facilitate the production of poverty and inequality indicator estimates at local level. This information is highly demanded by scientist from a wide variety of research fields like social sciences and economics. And so it is increasingly requested by politicians for evidence based politics.

Even more important is measuring the evolution of an indicator over time. On national level, classical design-based estimators perform well. However, on local level the classical methods may perform poorly due to very low sample sizes. Furthermore, estimates of change often rely on rotational samples. This imposes difficulties for measuring the variance of the change due to a possibly extreme small number of overlapping observations in certain areas. Hence, almost no reliable information may be deduced there. In contrast to classical methods, small area methods may cope much better with small sample sizes and small overlapping sample sizes. Thus, small area methods may foster the production of reliable estimates on local level.

In this paper we present a small area approach for measuring the change over time of poverty and inequality indicators in the presence of rotational samples. This approach will be compared with classical design-based estimators. This comparison is done via a wide scale Monte-Carlo study relying on a realistic data set. The focus lies on assessing the performance of the classical and small area estimates of change under complex survey designs.

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