Small area estimation by combining spatially misaligned data

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Abstract

The paper addresses the problem of small area estimation by using data defined on different partitions of the relevant territory. Namely, we will show how appropriate (area level) models, within the hierarchical Bayesian setting, can allow to use data on covariates available on non nested areal partitions to provide small area estimates.

As a motivating example we consider the estimation of the number of unemployed for Local Labour Markets (LLMs) in Italy by using two misaligned source data, *i.e.* design based estimates for LLMs from the Italian Labour Force Survey and auxiliary information about the number of enrolled in Labour Exchange Offices available for an administrative partition incompatible with LLMs subdivision.

Keywords: spatial misalignment; hierarchical Bayesian methods; atom-based models.

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