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**Title: Small area estimation using spatial microsimulation: Methods, Validation and Results**

Abstract:

Small area estimation is a technique used by statisticians to derive point estimates of a known variable by borrowing strength from reliable data for small areas. Typical ways that statisticians may generate small area estimates is through applying regression models (simple or more complex random effects models) for large areas to derive coefficients that can then be applied to Census or administrative data for small areas.

Another method of small area estimation uses spatial microsimulation techniques to reweight unit record data. A number of reweighting techniques exist in the spatial microsimulation literature, including Iterative Proportional Fit; Combinatorial Optimisation; and generalised regression.

This presentation shows how a generalised regression method has been used to derive a reweighted survey file that can then be used to calculate small area estimates of poverty in Australia. The advantage of this approach is that because a reweighted survey file is available, poverty rates for different sub-groups of the population can easily be calculated – for example, for children; older people; different family types; etc.

The presentation will describe the method; provide some results; show what validation is used; and give some idea about future research being done with spatial microsimulation models.