Title: Scale issues in the analysis of spatial variations in the distribution of household income

Corresponding Author: Nick Buck (nhb@essex.ac.uk), Institute for Social and Economic Research, University of Essex

Abstract:
There is considerable research and policy interest in spatial dimensions to the distribution of income, deprivation and welfare. This relates both to issues of population composition and of potential contextual effects. The former concerns segregation by income or deprivation at different spatial scales which may be seen as problematic in its own right or indeed as an opportunity to guide the spatial targeting of policy interventions. The latter is based on the hypothesis that there are individual or group effects arising from uneven spatial distribution: that, for example, having poorer neighbours may have negative effects on individuals' life chances.

Full population data sets, including both censuses and administrative data sets provide the potential for information at small spatial scales, and deprivation indicators are often constructed from such data. However, compared with household surveys which focus on income and welfare issues they often contain rather weak information on individual outcomes and behaviours and in many cases rather poor information on individual and household measures of income and well-being. In many countries also there is limited access to unit record data from population data sets. There is thus a case for matching surveys with spatial data from population data sets in order to explore the spatial dimension to the distribution of income.

There is growing body of literature based on the analysis of such matched data sets. One of the key issues emerging from this literature is the spatial scale of matching. There are various reasons for choosing particular scales: appropriate units of policy intervention, areas which are perceived to be socially or economically meaningful, or areas which prove empirically to be most effective in capturing area effects. In practice however the choice of spatial scale for matching tends to be pragmatic, based on the consistent scale indicators which are available in the data sets being matched. This paper is based on using a flexible approach which allows testing of the appropriate scale for matching. It is based on 'bespoke areas' which rely on having exact survey respondent locations and aggregating very small areas from e.g. census geographies based on proximity to respondent location to create areas at a range of scales (these scales can be defined either in terms of aggregating to reach threshold population sizes or based on spatial distances).

We analyse data from the British Household Panel Survey and 'Understanding Society', the new UK Household Longitudinal Study, which started in 2009, and will incorporate the BHPS sample. One advantage of this study is its very large sample size. These will be matched to Census data, and deprivation indices computed for a range of spatial scales. For comparison a number of administrative geographies will also be used. We will explore the spatial element of income distribution by analysing the between-group component within an income inequality decomposition analysis, using either individual areas or groupings of areas based on similar levels of
deprivation. In addition to comparing this between-group component for a range of spatial scales, we will also compare then with the components arising from inequality decomposition based on demographic and economic household characteristics to assess the relative scale of effects.