Estimating Census Health Geographies: Using Synthetic Estimation with Secondary Survey and Census Data

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Today’s presentation

- Background
- Project aims
- Methodology
- Results
- Policy implications
- Past and current applications
- Further information
Background

Small area health information highlights localised need for health services and community based care provision.

Such information...

“can be a powerful vehicle for improving the health of a community by both highlighting the existence of problems and opportunities for improvement. It can also guide local action in support of policy change” (Luck et al, 2006, 979).

Direct small area estimates of health related behaviours and outcomes seldom available from social surveys due to insufficient sample sizes.

Here we focus on MLSASE as a method for bridging this information gap
ML-SASE

“modelling nationally, predicting locally”
Background

The validation of synthetic estimates has always been problematic due to the fact that there is hardly ever any robust localised data to compare the synthetic estimates against – indeed if such data existed there would be no need for synthetic estimates!

However, by generating small area estimates of the census questions on health has provided us with the opportunity not only to further assess synthetic estimation as a methodology for generating small area data on health related behaviours and outcomes, but also to develop and extend the multilevel small area synthetic estimation methodology.

2011 Census health questions...

- Self assessed health
- Carer responsibilities
- Limiting long term illness
Surveys used to source health questions

- The Annual Population Survey
- The Integrated Household Survey
- The Crime Survey for England and Wales
- The Health Survey for England
- The Scottish Health Survey
- The Welsh Health Survey

All well established, regular, large, well designed health or social surveys
Other data sources used in the modelling process

- The Indices of Multiple Deprivation
- DWP data on claimant counts
- At the individual level age and sex from the census
Results

Severely limiting long term illness

Limiting long term illness but not severely

Multinomial model

No LLTI
Results

Unpaid care

Same conclusion as ONS (who used a different synthetic estimation methodology)...

Further work needed to determine why it is more difficult to estimate this indicator

Important predictors are unavailable routinely
Results contd.

Other methodological extensions:

- Incorporating geodemographic classifications into the estimation process (ongoing)
- Tested the importance of geo-coded (i.e. spatially referenced) social survey datasets.
- Identified continued discrepancies over question wording
Policy implications

- We recommend that geocoded social survey datasets should be seen as the ‘gold standard’ for all surveys deposited with the UK Data Service.
- Estimates provide expected values (of population-level need) – c.f. service-related use data
- MLSASE can provide inter-censal data or (hypothetically?) replace census questions.
- Need to harmonise census and survey questions
Other policy areas (1)

Obesity estimates

Current smokers estimates
Other policy areas (2)

Chronic Kidney Disease

Core Volunteering

Note: Classes are split by standard deviation
We are working with NICE and Public Health England to generate multilevel synthetic estimates of youth smoking.

**Impact**

We delivered a two day training course at GGD Amsterdam for the public health service of the Netherlands.

Work continues to develop small area synthetic estimates of health related behaviours across the Netherlands.
Training day on synthetic estimation

The day will cover...

- The methodology behind synthetic estimation
- Synthetic estimation data requirements
- An overview of the results of our recent research project on advancing the synthetic estimation methodology

This will be a FREE entry level introduction with no assumed prior knowledge of synthetic estimation or multilevel modelling. It is funded by a joint ESRC Secondary Data Analysis Initiative research project between the Universities of Southampton and Portsmouth.

If you need localised information and want to know about one potential way to generate neighbourhood level estimates, come to our free one day introduction to synthetic estimation.

For more information and to book your free place go to www.synthetic-estimation.moonfruit.com
Multilevel synthetic estimation

Research project on multilevel synthetic estimation

An ESRC secondary data analysis initiative funded project...
"Estimating Census Health Geographies: Using Synthetic Estimation with Secondary Survey and Census Data"

welcome

The project is due to run from January 2013 to December 2014 and aims to provide an alternative methodology to the traditional census to generate small area data for the health variables included in the UK 2011 Census.

latest news

Book your place on our free introductory day to multilevel synthetic estimation on the 4th December in Southampton.

New short report now published in Social Science and Medicine.

New conference posters now available.

Follow us on Twitter @ML_SASE.

about us

This is a joint research project between the University of Southampton and the University of Portsmouth.

For more information on the staff involved click on the about us tab.
Multilevel synthetic estimation

Research project on multilevel synthetic estimation

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Thank you!