

## Session C9: Small area estimation and weighting

Discussion

Ralf Münnich

Trier University, Economic and Social Statistics

Budapest, 21 October 2016

## Session C9: Small area estimation and weighting

### Local poverty indicators and cost of living

Caterina Giusti, University of Pisa

### Poverty estimation using small area estimation

Nikos Tzavidis, University of Southampton

### Consistent estimation at person-level and household-level

Anne Konrad, Trier University

### The growing demand for small area statistics

How to make demand and supply meet?

Asta Manninen, European Statistical Advisory Committee

## Local poverty indicators and cost of living

- ▶ Local indicators should consider PPP (World Bank, 2015)
  - ▶ Income or consumption data
  - ▶ Use of national or local poverty line
  - ▶ Consideration of price levels
- ▶ Shall we use a constant (national) equivalence scale? How robust is this?
- ▶ Why don't you use small area for local poverty lines? How did you evaluate the corresponding results?
- ▶ Is PPP the right concept for poverty estimation?

## Poverty estimation using small area estimation

- ▶ Overview of recent methods to estimate poverty indicators on micro-level!
- ▶ EBP plus alternatives using transformations, robust methods or modifications on parametric assumptions
- ▶ Example on Mexican data gives interesting results
- ▶ Your *unresolved challenges* yield
  - ▶ How should the user decide on what method to apply?
  - ▶ What impact might a *risky MSE estimation* have in practice?
  - ▶ I assume that an  $R^2$  of 40-50% is not often observed in this area. What then?
- ▶ How do we benefit from *other* data sources? How do we measure the output?
- ▶ Are there any computational issues to consider?

## Consistent estimation at person-level and household-level

- ▶ Eurostat recommends to use integrated weighting for EU-SILC to automatically install coherence between household-level and individual-level estimates
- ▶ What is the impact of the *requirement*
  - ▶ Does this mean that *everything must be coherent*?
  - ▶ Sequential procedures can hardly fulfil this or suffer from increasing weight variability
  - ▶ Can we still be coherent with *small area and small domain estimates* that make difference between household members?
- ▶ You showed convincingly an alternative to integrated weighting based on common variables with better properties
- ▶ It is worth reconsidering weighting procedures, especially when you get extra weights (e.g.) for missingness
- ▶ Though, in recent applications / simulations we could not provide collapsing integrated weights

## The growing demand for small area statistics. How to make demand and supply meet?

- ▶ Demand and value added of small area estimates
- ▶ Better use and better allocation of resources versus *doing more with less!*
- ▶ You raise:
  - ▶ Listen to the users ... how can universities and research institutes contribute?
  - ▶ Support education and sharing of knowledge and experience
  - ▶ Be strict on integrity and confidentiality issues
- ▶ Are these the right questions?
  - ▶ Do applicants know how to handle small area estimates?
  - ▶ Do they understand the change of paradigm (accuracy)?
- ▶ We need somebody in between *who translates* ideas in both directions and strong research collaboration

## The growing demand for small area statistics. How to make demand and supply meet?

- ▶ Demand and value added of small area estimates
- ▶ Better use and better allocation of resources versus *doing more with less!*
- ▶ You raise:
  - ▶ Listen to the users ... how can universities and research institutes contribute?
  - ▶ Support education and sharing of knowledge and experience
  - ▶ Be strict on integrity and confidentiality issues
- ▶ Are these the right questions?
  - ▶ Do applicants know how to handle small area estimates?
  - ▶ Do they understand the change of paradigm (accuracy)?
- ▶ We need somebody in between *who translates* ideas in both directions and strong research collaboration

## The growing demand for small area statistics. How to make demand and supply meet?

- ▶ Demand and value added of small area estimates
- ▶ Better use and better allocation of resources versus *doing more with less!*
- ▶ You raise:
  - ▶ Listen to the users ... how can universities and research institutes contribute?
  - ▶ Support education and sharing of knowledge and experience
  - ▶ Be strict on integrity and confidentiality issues
- ▶ Are these the right questions?
  - ▶ Do applicants know how to handle small area estimates?
  - ▶ Do they understand the change of paradigm (accuracy)?
- ▶ We need somebody in between *who translates* ideas in both directions and strong research collaboration



## Summary and outlook

### How do we properly measure the outcome?

- ▶ Design versus model
- ▶ Internal versus external evaluation
- ▶ What should be done in the context of reliable official statistics products?

### How do we communicate small area estimates

- ▶ (Extended) Statistical literacy (quality measures)
- ▶ Comparability between areas and domains

### How can we collaborate?

- ▶ It is not a one-way street (in either direction)!
- ▶ Data must be available!
- ▶ Horizon 2020 failed so far!!!

## Summary and outlook

### How do we properly measure the outcome?

- ▶ Design versus model
- ▶ Internal versus external evaluation
- ▶ What should be done in the context of reliable official statistics products?

### How do we communicate small area estimates

- ▶ (Extended) Statistical literacy (quality measures)
- ▶ Comparability between areas and domains

### How can we collaborate?

- ▶ It is not a one-way street (in either direction)!
- ▶ Data must be available!
- ▶ Horizon 2020 failed so far!!!

## Summary and outlook

### How do we properly measure the outcome?

- ▶ Design versus model
- ▶ Internal versus external evaluation
- ▶ What should be done in the context of reliable official statistics products?

### How do we communicate small area estimates

- ▶ (Extended) Statistical literacy (quality measures)
- ▶ Comparability between areas and domains

### How can we collaborate?

- ▶ It is not a one-way street (in either direction)!
- ▶ Data must be available!
- ▶ Horizon 2020 failed so far!!!