

Combining sample surveys and registers

Regional Training

Producing Register-based Population Statistics in Developing Countries

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Preconditions for combining data from sample surveys and registers

- Legal base
 - Norway: Respondent must be informed in interview/on questionnaire and confirm their approval
- Possibility to link data
 - Norway: CPR is used as a sampling frame. Same units and identifiers

Use of Administrative Registers in Production of Statistics

Different ways of using administrative data in statistics

- Register-based statistics
 - Statistics produced by using registers only
- Statistics combining sample surveys and register data
- Register data supplemented by data from sample surveys
 - Sample survey data used for
 - Calibration
 - Assess quality of register data items
- Register data used in sample surveys
 - Register data used for
 - Sampling frames
 - Improve information (editing, coding, imputation, estimation)
 - Additional information (variables collected from registers)
 - Non-response studies

Register data supplemented by data from sample surveys

Use of data from sample surveys

- Calibration
 - Macro level
 - Example: Register-based employment statistics in Norway
 - Number of employed persons: Register-based statistics = Labour Force Survey
- Assess quality of register sources
 - Micro or macro level
 - Sample survey data used in models for selecting the most reliable data source

Register data as additional information in statistics based on sample surveys

Use of data from registers

- Editing
 - Compare on micro level
- Coding
 - Example: Industry for employed persons based on information on name and address of place of work
- Imputation
 - Item non-response
- Estimation
 - Post stratification
 - Example: Employed/not employed and industry for employed persons
- Supplementing information from interviews
 - Save time and costs by not asking (sex, age etc from registers)
 - Better quality (example: Wages, income)

Data from sample surveys as additional information in register-based statistics

- Registers may not provide all necessary variables
- Additional variables for sample surveys
 - Example: Dutch census: Occupation and education
- Household budget survey in countries with no household register
 - Household composition from sample survey
 - Data on income etc from registers

Consistency in definitions and classifications

- Definitions and classifications not always the same in registers as in statistical surveys

Solution:

- Combine data from several registers
- Develop a model for prioritisation of information using data from sample surveys on micro or macro level
- Estimate classifications based on data from sample surveys
- Definitions in register-based statistics not always in full compliance with basic statistical definition
 - Employment status in Norway: Not possible to identify contributing family workers

Consistency on macro level

- Weighting
 - Example Dutch census: Repeated weighting
 - All tables based on different sources (e.g. surveys) mutually consistent
 - See <http://www.unece.org/stats/documents/2013.10.census1.html> (document 22).
- Imputation
 - Based on data from sample surveys
 - Mainly valid at macro level

Thank you for your attention!