Introduction to the course, lecturers, participants and the European Census 2021

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ESTP “Administrative data and censuses”
Wiesbaden (30 May – 1 June 2017)
Introduction (1)

• Title of the course: Administrative data and censuses

• Register data: a systematic collection of unit-level data organized in such a way that updating is possible

• Administrative data sources: data holdings that contain information collected primarily for administrative (not research or statistical) purposes
Introduction (2)

- Objective of the course: Giving the participants an overview of possibilities, challenges and risks when moving from traditional to combined and register-based censuses
- Three days: 30 May – 1 June
- Presentations to give theoretical background and examples; time for questions and discussion; group exercises (every afternoon) and evaluation (last day)
Introduction (3)

Trainers

• Stephanie Hirner (Destatis): stephanie.hirner@destatis.de
• Kaija Ruotsalainen (Statistics Finland): kaija.ruotsalainen@stat.fi
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• Eric Schulte Nordholt (Statistics Netherlands): e.schultenordholt@cbs.nl

Introduction of lecturers and participants

Have fun!
Methodology approaches in the ECE region and the census situations in the countries of the participants

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ESTP course Administrative data and censuses in Wiesbaden (30 May – 1 June 2017)
Contents

• Data collection at Statistics Netherlands
• Data sources for the Dutch Census 2011
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• Facts about the 2011 Census project
• Publication of the Dutch Census 2011
• Current and future work
• Educational Attainment File
• Imputing the Educational Attainment File
• Harmonised protection of census data in the ESS
• Censuses in the UNECE region
Data collection at Statistics Netherlands

- Centralised in one data collection division (registers and surveys)
- Efficiency and professionalism
- Using the same infrastructure for social and economic statistics as much as possible
- Collection strategy (preferred order):
  - register data
  - sample surveys
- Only existing sources are used for the Census 2011
- No Census 2011 questionnaires!
Data sources for the Dutch Census 2011

Registers
- Population Register
- Jobs file (all employees)
- Self-employed file (all self-employed)
- Fiscal administration
- Social security administration
- Pensions and life insurance benefits
- Housing Register

Survey
- Labour Force Survey
Population Register (1)

- 1850 - 1994: paper card system
- 1995 - today: automated population registration system
- The Dutch municipalities are the owners of the population data
- All Statistics Netherlands’ population statistics (births, deaths, immigration, emigration, …) are based on the population registration system
Population Register (2)

- Each municipality keeps its own register
- In addition, all data are copied into a central register
- The central register is kept by the Ministry of the Interior
- Prescribed by the law on population registration system:
  - the contents of the population register
  - standardized data transfer between organizations
Facts about the 2011 Census project (1)

- Key project 2008-2014: 20,000 hours
- 15 people of Statistics Netherlands involved:
  - Project leader
  - Project secretary
  - Expert on population statistics
  - Expert on housing statistics
  - SDMX expert
  - Four sampling and weighting experts
  - Six researchers with knowledge on the SSD
Facts about the 2011 Census project (2)

- Steering committee with 5 members:
  - Chair
  - Quality assurance
  - Senior supplier methodology and IT
  - Senior supplier statistics
  - Senior user
- Evaluation of content and process
- Reports and documentation
- Follow-up: Dutch Census 2011 book
Publication of the Dutch Census 2011


• Census tables (of 32 European countries): https://ec.europa.eu/CensusHub2/
Current and future work

Preparing the Census 2021

New European implementing regulations (based on UNECE recommendations)

Preparatory projects at Statistics Netherlands:
  - Methodology (estimating occupation tables)
  - Software
  - Level of education attained (imputing the Educational Attainment File): supported by ESS.VIP ADMIN grant
  - Housing variables
  - Population grid squares (legal base, protection of census data)
Educational Attainment File

- Complex integration process of microdata from LFS and examination registers
- New version containing also information on private education institutions available since 2016
- About 60% of the records have information on highest level of education attained
- Weighting to known marginals of the population for statistics on level of education
- Better quality and more detailed education tables than before when only LFS information was used
Imputing the Educational Attainment File

- Find a good imputation model for the Educational Attainment File (logistic regression model)
- Produce a set of hypercubes of the Census 2011 again, now by using the imputed Educational Attainment File
- Develop a set of quality indicators (basis for decision how detailed the future census publication will be)
- Plan for highest level of education attained in the Dutch Census 2021 (also of interest for other countries)
Harmonised protection of census data in the ESS

• If all European countries protect their census data independently, the comparability of the results is hampered
• Six countries work together for 12 months to define best practices
• Key question: how to produce safe data (within legal frameworks) such that the country results are better comparable in the Census 2021 than in the Census 2011
Censuses in the UNECE region

UNECE REGION

- Traditional census (full field enumeration without using data from registers; includes the rolling census)
- Combined census (data from registers + field data collection)
- Register-based census (data from registers only)
Compliance with international recommendations

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• Conditions facilitating use of administrative sources
• Characteristics of the Dutch census
• Comparison with other years
• Comparison with other countries
• Essential features of a population and housing census
Conditions facilitating use of administrative sources (1)

- Legal base (Statistics Act)
- Public approval (‘Big Brother is watching you’)
- Cooperation among authorities (mainly government organisations)
- Comprehensive and reliable register system (administrative versus statistical quality)
- Unified identification system (preferably unique ID-numbers) → linking/matching (cf. Oxford dictionary of statistical terms edited by Dodge)
Conditions facilitating use of administrative sources (2)

- Linked (or matched) data are data from two different sets of microdata that have at least some common members, such that the common members have been identified and cross referenced.

- Linkage may be deterministic (based on exact matches of characteristics) or probabilistic (based on approximate as well as exact matches).
Characteristics of the Dutch census

• Relatively cheap
• Short production time
• More socially acceptable than the Census 1971
• All tables are numerically consistent
• Some missing information in the survey part
• Dependent on registers (availability, timeliness)
• Comparisons over time possible
• International comparisons possible
• Census data continuously available
Comparison with other years
Comparison with other countries

Traditional Census (complete enumeration):
Most countries in the world (including the UK and the US)

Traditional Census (partial enumeration) and Registers:
Some countries (e.g. Germany, Poland and Switzerland)

Rolling Census:
France

Fully or largely register-based (Virtual) Census:
Five Nordic countries (Iceland, Norway, Sweden, Finland and Denmark), the Netherlands, Belgium, Austria and Slovenia
Essential features of a population and housing census

a) Individual enumeration (information on each *registered* person is obtained): +
b) Simultaneity (a well defined and unique reference period): 0 (not all information on occupation and level of education refers to Census Day)
c) Universality (providing *registered* totals): +
d) Small area data (information on smallest geographic areas): 0 (information on occupation and level of education for small municipalities is problematic)
e) Defined periodicity (censuses taken every ten years): +