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Joint ECE-EUROSTAT work session
on Population and Housing Censuses[1]
(Dublin, Ireland, 9-11 November 1998)

Study topic 1

THE POPULATION CENSUS 2000 BASED ON ADMINISTRATIVE SOURCES QUALITY ASPECTS

Supporting paper submitted by Statistics Norway[2]

Summary

1. The *population* census in Norway for the year 2000 will be based entirely on administrative sources (the *housing* census will be a traditional survey). Administrative sources (registers) have been used by Statistics Norway (SN) in collecting census data since 1970. In the 1990 census information on the topics demography, income and education, as well as geographical characteristics, were collected from registers. Labour market data was the only part of the population census where a survey was used (in combination with register data).

2. For the 2000 population census, SN has decided to use administrative data for all variables, including labour market characteristics. The data situation has been improved in several ways since the 1990 census:
- The quality of the main registers has been improved
- More administrative sources are available

1 The papers which are prepared for this work session will be treated in the same manner, as papers that are prepared for seminars.

2 Prepared by Coen Hendriks and Paul Inge Severeide, Division for Population and Housing Census.

- The use of an integrated data system of individuals (persons) improves the quality of core variables
- SN has more information on data quality

3. The main issue of this paper is quality aspects of register based census data. Quality aspects are being described along four lines:
- Improving the quality
- Obtaining consistency between data from different sources
- Developing measures of quality
- Describing the data quality

4. SN is producing annual, register based statistics for most for the topics covered by the population census. The quality aspects are handled by the ordinary production systems. In addition, as a part of the census project, extra resources are used to improve the quality of data from selected registers. This will also make it possible to include new variables based on registers in the statistics.

5. Obtaining consistency between data from different sources is an important part of the population census. This is indeed the situation when the census data are collected from administrative sources and not from a questionnaire. Handling inconsistency problems is also necessary in order to construct derived characteristics like ‘Activity status’.

6. Inconsistency between registers may have different causes:
- Differences in definitions of registers variables
- Different populations
- Differences in reporting routines
- Differences in reference periods
- Errors (including missing data)

7. The paper will give some examples of how to handle inconsistency problems within the census framework.

8. Measuring the quality of the data is important for two reasons:
- Monitoring the quality as a part of the production process.
- Describing the quality of the statistics published

9. Of course most of the register-based statistics that are being published, are followed by a quality description. The aim in the census project is to develop standardised ways of describing the quality for all variables contained in the census.

10. Most quality measures are designed for surveys. An important part of the census project will be to develop new methods for measuring quality especially suited for register based statistics. The intention is to use these methods for other register based statistics as well, not only for the census statistics.

11. In order to measure the quality, data from other sources than registers are required. Population censuses are traditionally followed up by a quality

control survey. The point is to collect data on selected variables in order to describe the quality of the corresponding census data. Data may be collected in different ways:

1. Independent survey
2. Additional questions to existing surveys
3. Data from existing surveys

12. Traditionally the quality control survey has been carried out as an independent survey. In the 2000 census the intentions are to use alternatives 2 and 3. The fact that the census is based on register data rather than a questionnaire, makes it possible to use data from existing surveys more efficiently. We will use the Labour Force Survey (LFS) as an example.

13. The core variables in the field of the labour market, are related to the current activity status. This means that we collect data on the labour market situation for each person in one reference week. The same kind of data is collected in the LFS. The LFS then may be used as a source for quality control for the labour market variables of the census. The number of persons interviewed in the LFS in a certain week is not more than 2000. However, using registers, “census data” may be established not only for the census week (first week of November 2000), but for all weeks in f.i. the last quarter of 2000. This gives us the possibility to use data from 24 000 interviews in the LFS.

14. For variables describing ‘Usual activity’ (referring to the situation in the year 2000), the LFS can not be used as a data source directly. The alternative in this case is to use additional questions to the LFS.