Principles and Recommendations: Essential Features and Census Methodologies

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Definitions

- A **population census** is the total process of planning, collecting, compiling, evaluating, disseminating and analysing demographic, economic and social data at the smallest geographical level pertaining, at a specified time, to all persons in a country or in a well-delimited part of a country.

- A **housing census** is the total process of planning, collecting, compiling, evaluating, disseminating and analysing statistical data relating to the number and condition of housing units and facilities as available to the households pertaining, at a specified time, to all living quarters and occupants thereof in a country or in a well-delimited part of a country.

Essential features

- **Individual enumeration**

The term "census" implies that each individual and each set of living quarters is enumerated separately and that the characteristics thereof are separately recorded. Only by this procedure can the data on the various characteristics be cross-classified. The requirement of individual enumeration can be met by the collection of information in the field, by the use of information contained in an appropriate administrative register or set of registers, or by a combination of these methods.

Essential features

- **Universality within a defined territory**

The census should cover a precisely defined territory (for example, the entire country or a well-delimited part of it). The population census should include every person present and/or residing within its scope, depending upon the type of population count required. The housing census should include every set of living quarters irrespective of type. This does not preclude the use of sampling techniques for obtaining data on specified characteristics, provided that the sample design is consistent with the size of the areas for which the data are to be tabulated and the degree of detail in the cross-tabulations to be made.

Essential features

- **Simultaneity**

Each person and each set of living quarters should be enumerated as of the same well-defined point in time and the data collected should refer to a well-defined reference period. The time-reference period need not, however, be identical for all of the data collected. For most of the data, it will be the day of the census; in some instances, it may be a period prior to the census.

Essential features

- **Defined periodicity**

Censuses should be taken at regular intervals so that comparable information is made available in a fixed sequence. A series of censuses makes it possible to appraise the past, accurately describe the present and estimate the future. It is recommended that a national census be taken at least every 10 years. Some countries may find it necessary to carry out censuses more frequently because of the rapidity of major changes in their population and/or its housing circumstances.

Essential features

- **Capacity to produce small area statistics**

The census should produce data on the number and characteristics of the population and housing units down to the lowest appropriate geographical level, compatible with national circumstance, and for small population groups all the while protecting confidentiality of each individual.

Census methodology - typology

- Traditional census
  - Traditional census with annual rolling surveys
- Rolling census
- Combined methodology census
- Register - based

Traditional census

- Information on census topics concerning individuals and households is collected by census questionnaire directly from respondents, using enumerators, or other modes of data collection (e g. telephone interview, mail out/mail in, Internet, etc.), or by applying a combination of different modes of data collection
- Essential characteristic – each household in a country is contacted and asked to provide the required information
- Short form – long form on a sample of the population

Traditional census

- Necessary conditions
  - Legislation
  - Permanent census organization
  - Funding
  - Support of the general public
  - Trust in the statistical agency
- Advantages
  - Comprehensiveness of the coverage
  - Simultaneity
  - Flexibility in selecting the topics
  - Provides ideal sample frame
- Disadvantages
  - Cost
  - Administrative complexity
  - Long processing time
  - Data are relatively fast out of date
  - Burden on the respondents

Traditional census with annual rolling survey

- This methodology is a combination of the traditional census with a very short form – about ten questions in total on both demographic and housing characteristics, taken every ten years – and a large survey that is administered each year on a rolling sample of the population that replaces the long census form
- Allows for a full population count and yearly estimates on a large range of demographic, social and housing characteristics
- Example: USA

Rolling census

- Information on individuals and households is collected through a continuous cumulative survey covering the whole country over a period of time (generally years), rather than a particular day or short period of enumeration
- The two main parameters of a rolling census are the length of the period of enumeration (which is linked to the frequency of updates required) and the sampling rate (which depends on the geographic levels required for dissemination purposes)
- Example: France

Rolling census

- Necessary conditions
  - Master address file, regularly maintained
  - Ability to explain obtained statistics to the users
- Advantages
  - Higher frequency of statistics
  - Reduction of the burden to the respondents
  - Cost is spread over many years
- Disadvantages
  - No snapshot
  - Duplication of respondents
  - Omission of respondents
  - Universality

Combined methodology - 1

- Information on individuals and households are collected by combining data collected from one or more surveys or full field enumeration with administrative and/or statistical registers
- Data from registers are employed not only as a frame or to support field operations, but directly as a data source for some census information
- In some cases, register data are used to prefill the questionnaires to be verified or corrected during data collection
- Ad-hoc sample surveys are used to provide information on census topics not available from administrative sources or to adjust data which are of poor quality in registers
- Examples: Italy, Ireland, Hungary

Combined methodology - 1

- Necessary conditions
  - Existence of an accurate and up-to-date population register
  - Ability to link the information from registers and survey/full enumeration at individual level
  - Links between the housing units and individuals
- Advantages
  - Reducing the burden on respondents
  - Less expensive than traditional
  - Reducing the non-response
- Disadvantages
  - Requires advanced and sophisticated processing
  - Definitions of the topics
  - No single census event to attract public attention

Combined methodology - 2

- Information on individuals and households are collected from existing administrative sources, namely, different kinds of registers, of which the following are of primary importance: individuals, households and dwellings
- These are linked at the individual level with information from existing sample surveys
- No field data collection will take place
- Existing sample surveys include intercensal sample surveys on different topics, such as the labour force survey, living standards survey …
- Example: The Netherlands

Combined methodology - 2

- Necessary conditions
  - Existence of series of different registers
  - Existence of regular surveys
  - Capacity to link those source at the level of individual record
- Advantages
  - Much less expensive
  - More up-to-date statistics
- Disadvantages
  - Requires sophisticated methodology and staff
  - Adapting statistical definitions to registers'

Register based

- Information on individuals and households is collected from existing administrative sources, namely, different types of registers, of which the following are of primary importance: individuals, households and dwellings
- These are linked at the individual level with information taken from other administrative/statistical sources such as business, tax, education, employment and other relevant registers
- Examples: Denmark, Finland, Norway, Sweden

Register based

- Necessary conditions
  - National legislation re. population register and its use
  - Existence of the population and other relevant registers
  - Up-to-date registers and universal coverage
  - Harmonized concepts and definitions across different registers
  - Universal personal identification number
- Advantages
  - Reduced costs of producing census statistics
  - Much more frequent production
  - No burden on respondents
- Disadvantages
  - Rigidness of the registers
  - Population base – only registered population

Census methodology – use of registers

Type of data collection	Use of registers as census data sources		
	No registers (Fully field enumeration-based and/or sample surveys)	Base registers (Individuals/Households/ Dwellings)	Integrated administrative sources
Full field enumeration	Full field enumeration only (Traditional census)	Base registers and full field enumeration	Integrated administrative sources and full field enumeration
Rolling surveys (continuous surveys)	Full field enumeration and rolling surveys	n.a.	n.a.
	Rolling census		
Ad-hoc sample surveys	n.a.	Base registers and ad-hoc sample surveys	Integrated administrative sources and ad-hoc sample surveys
Existing sample surveys	n.a.	Base registers and existing sample surveys	Integrated administrative sources and existing sample surveys
No field enumeration (Fully register-based)	n.a.	n.a.	Fully register-based