

Register-based approaches for PHCs: rationale and definitions of the key concepts

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Source: **UNSD Handbook on Registers-based Population and Housing Censuses**
https://unstats.un.org/UNSDWebsite/statcom/session_53/documents/BG-3e-Handbook-E.pdf



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Outline

- ❑ Rationale
- ❑ Definitions of main concepts
 - Registers
 - Administrative registers
 - Base and supplementary registers
 - Statistical registers
- ❑ Use of administrative registers in PHCs
- ❑ Conclusions



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Rationale

- The rationale for using administrative sources for PHCs ... potential opportunities for:
 - reducing costs
 - reducing respondent burden
 - ✓ recent incentives, e.g., increased interest during the COVID-19 pandemic to reduce direct contact with the general public with the use of administrative data and online data collection methods
 - improving the quality of data
 - improving efficiency
 - producing more frequent information – in many cases on a yearly basis
 - ✓ may be particularly relevant for the purposes of annual monitoring of SDGs indicators
 - national commitments to modernize statistical systems, e.g., NSO's long-term vision for a developing a more general register-based statistical system
 - ✓ national legal and political factors (e.g., digital government or e-Government initiatives)
 - ✓ stakeholders and users' expectations



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Definitions of main concepts

Register

- is “a systematic collection of unit-level data organized in such a way that updating is possible”
 - where ‘updating’ is the process of adding or changing identifiable information with the purpose of establishing, bringing up to date, correcting or extending the register – i.e. keeping track of any changes in the data describing the units and their attributes

- contain information on a complete group of units, referred to as the target population, such as persons, dwellings, buildings or business organisations
 - such units are defined by a precise set of rules in order to fulfil the function of the register and the attributes (variables) are updated in line with changes affecting the units
 - for example, a set of rules can be used for identifying the resident population in a country, the duration of residence, those with residence permit or work permit, etc.

- each unit in the register should be uniquely identified by using a system of identification codes (keys)
 - however, even if such identification codes are not available, it is possible to uniquely identify each unit if sufficient information on the units is available (for example, for persons such information would relate to name, sex, address and date of birth)



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Definitions of main concepts

- ❑ Essential features of a register:
 - Data held should be at the **'unit record level'**
 - Each unit in the register should be **'uniquely identified'**
 - Data are organized in a way that allows **'updating'**



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Definitions of main concepts

Administrative registers

- ❑ are registers primarily used in an administrative information system by register-holders (*either public agencies such as government or local authority bodies or private institutions/companies*) for their own specific purposes (*such as the monitoring of taxes, the allocation of pensions, the provision of services, the production of goods, or the administering of bank accounts*)
- ❑ contain information on units (such as persons and dwellings) and variables that are defined by administrative rules and demands in a country



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Definitions of main concepts

- Administrative registers used for producing PHC data are usually classified into two groups:
 - **Base registers**
 - **Specialized (or supplementary) registers**



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Definitions of main concepts

Base registers

- ❑ are those that hold basic information relating to the stock of the entire set of 'population' units that are being counted in the census – typically persons, dwellings and buildings
 - each unit is usually identified by a unique number such as a PIN, a real property number or a dwelling number

Specialised registers

- ❑ hold the record for each unit, often identified by the same unique number as in the base register, with information necessary for the specific administrative function of the data holders, and from which one or more of the characteristic variables that may be required for the census (*such as educational attainment, occupation, disability or income*) can be derived



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Types of administrative data sources used in PHCs

Base registers

- Population register (PIN)
- Address/dwelling/building register (Address ID)
- Establishment/business register (Enterprise ID, farm ID)

Statistical UNITS
are different
“Person, Address
and
Establishment”

Specialized registers

- Social security/pension
- Tax
- Employment, unemployment/jobseekers
- Education and student
- Health
- Border control
- Foreigners, residence permits
-

Statistical UNIT is identical
throughout data sources: “Person”



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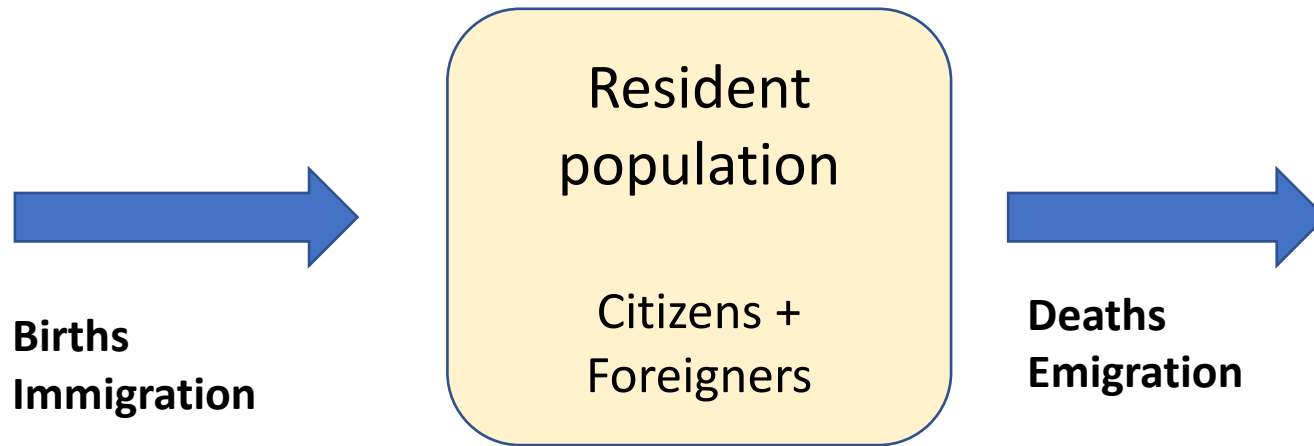
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Base registers for censuses

Population register



Regular updates on

- ✓ Births/Deaths
- ✓ Immigration/Emigration
- ✓ Marriage/Divorce
- ✓ Changes in place of residence
- ✓ Acquisition/loss of citizenship

Main purposes of establishing a population register:

- Establishing personal identification
- The administration of voting, pensions, health, educational and other services
- Establishing ownership of a residence or the right to work
- Provides a frame (or list) of the resident population in a given country, along with information on some basic demographic characteristics (date of birth, sex, etc.)



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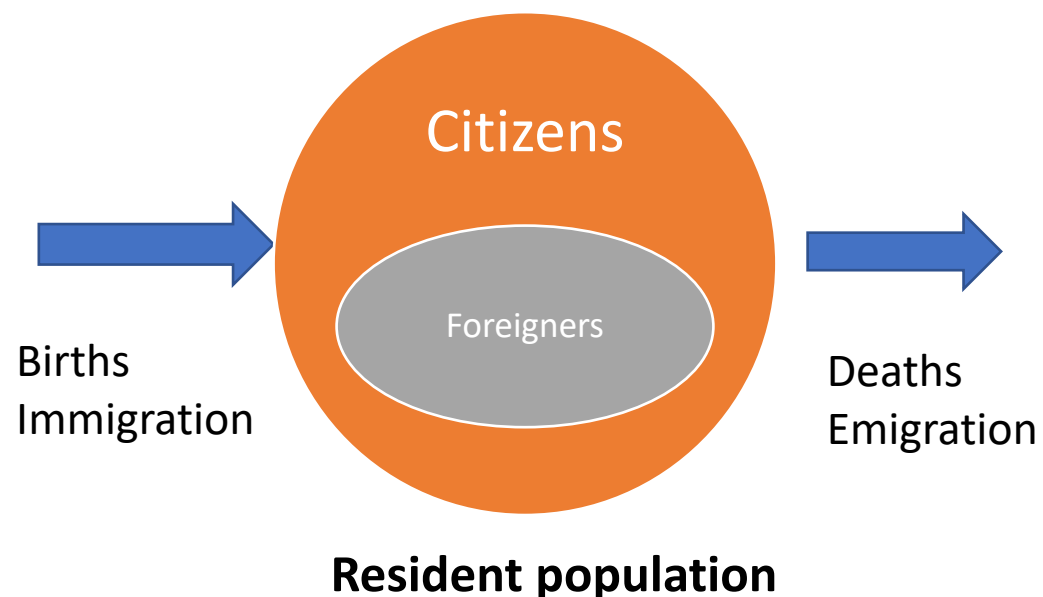
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Base registers for censuses

Population register



Each personal record may include:

- Name, sex, date of birth
- Place (country) of birth
- Marital status
- PIN
- Country of citizenship
- Residence address
- Date of arrival at or departure from that address/country

Note: In some countries, the population register may include only citizens and there could be separate registers for foreigners. In those countries two different government agencies may be responsible for **maintaining and updating registers for citizens and foreigners**



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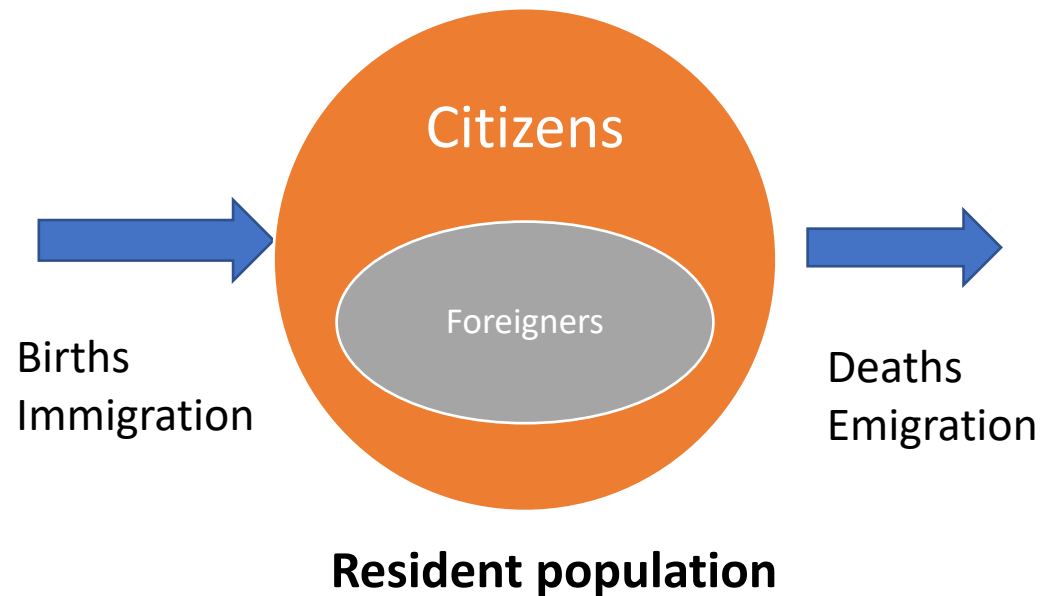
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Base registers for censuses

Population register



Potential uses ... generate statistics on:

- Population by age, sex, marital status
- Distribution of population by small geographic areas
- International and internal migration
- Births and deaths

Frequency: annual (or sometimes quarterly) statistics



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Base registers for censuses

Building and dwelling registers

- ❑ Contain information on:
 - The location of buildings, usually as a **formal address** (maybe also as geocoordinates)
 - The type and purpose of each building:
 - ✓ used wholly or partially for **residential purposes** and whether they are **occupied or vacant**
 - ✓ used for **non-residential purposes**
 - Characteristics of buildings (construction year, size, water/gas/electricity installations, etc.)
 - Characteristics of dwellings (size, floor level, ownership/tenure, etc.)

- ❑ Regularly updated for:
 - new buildings
 - expanded or demolished buildings



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Base registers for censuses

Address registers

- ❑ Contain addresses, covering all units, including:
 - residential buildings/dwellings – used by households and by institutional populations
 - non-residential buildings
 - ✓ information on purpose of building (such as school, health center, hospital, government offices, establishments)

- ❑ The availability of address registers is critical to a registers-based census as it is necessary to have a list of places where people might live, in order to be able to assign a location and link the place to the population register

- ❑ No internationally agreed definition of an address register

- ❑ Country practices show differences in the type of relationship between registers of addresses and registers of buildings/dwellings
 - in some countries, the address maybe be an attribute in the building/dwelling registers
 - while in other countries, the building/dwelling could be an attribute of addresses in the address registers



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Base registers for censuses

Business/establishment registers

- ❑ Contain information on enterprises/establishments, including information on their characteristics ... could be used in the census, especially for producing information on economic characteristics:
 - Place of work
 - Industry of occupation
 - Institutional sector
 - Size of workforce in terms of numbers of persons employed and employees



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Definitions of main concepts

Statistical registers

- ❑ are usually created (typically by statisticians) by processing data from administrative registers for statistical purposes in accordance with statistical concepts and definitions
 - a statistical register could be based on one or more administrative registers

Statistical population register

- ❑ is a systematized and indexed collection of individual records for every resident of the country (including nationals and foreign citizens)
- ❑ forms the backbone of the compilation of official statistics and represents a master population frame for designing statistical surveys



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Use of administrative registers for PHCs

There are two census data collection methods involving the use of administrative registers:

- ❑ **the register-based census**, in which all information is collected from several independent administrative registers and then linked to create a single statistical database; and
- ❑ **the combined approach**, in which elements of both the traditional and register-based approaches are combined to an extent that suits national circumstances
 - information on individuals, households and dwellings is collected by combining data from registers with data collected from one or more surveys
 - field-based data collection may be based on:
 - (a) full field enumeration
 - (b) an ad hoc sample survey; or
 - (c) existing sample survey
 - data from registers are employed not only as a sampling frame or to support field operations, but directly as the data source for some census information



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Conclusions

- ❑ Country practices indicate that changing census methodology from a traditional census to a wholly register-based census usually takes several decades
- ❑ There is no ideal method or duration for this transition and therefore each country should plan this process based on the initial assessment of the availability of administrative registers
 - as well as assessment of preconditions that have to be met before changing census methodology
- ❑ It should be noted that direct transition from the traditional census to wholly register-based census is not realistic, and that this transition should be planned gradually, introducing more variables each time, providing that the registers have been proven to be of good quality
- ❑ Continuously address/resolve challenges relating to quality
 - differences in concepts, definitions classifications used; the target population; procedures for data collection, processing and quality assurance; methods, structures and systems used
 - inconsistencies between registers, e.g., in terms of timeliness and reference periods
- ❑ Develop institutional capacity for establishing and maintaining statistical registers



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