

QUALITY ASSESSMENT for 2021 PHC

Online Training Course on 'Conducting a Census Based on Administrative Records'



TURKISH STATISTICAL INSTITUTE
Demographic Statistics Department

Mehmet Doğu KARAKAYA,
Expert

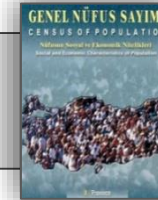
Alper ACAR,
Expert

Mehmet Şaban UCARI,
Expert

Content

DAY 1

✓ HISTORY OF POPULATION CENSUSES (1927-2000) &
DATA SOURCES FOR POPULATION STATISTICS



✓ ADDRESS BASED POPULATION REGISTRATION SYSTEM (2007-2021-...)
CURRENT POPULATION FIGURES



✓ 2011 POPULATION and HOUSING CENSUS



DAY 2

✓ LEGAL BASE



✓ 2021 POPULATION and HOUSING CENSUS
"POPULATION CHARACTERISTICS DATABASE (PCDB)" (for census and beyond)



✓ SURVEY ON BUILDING & DWELLING CHARACTERISTICS



☀ QUALITY ASSURANCE



1. Administrative Registers

Administrative data sources are data sets that contain information collected primarily for administrative purposes.

They include administrative registers such as a country's population, business, address, education, health, employment, and tax registers.



1. Administrative Registers

Administrative registers or other administrative sources are used to create statistical registers, which are specifically used for statistical purposes, including a census.

The quality of census estimates produced using administrative sources is particularly difficult to assess or measure due to the complexity and multi-dimensionality of the data used.

Many factors affecting quality are not quantitatively measurable. Moreover, high-quality statistics will necessarily vary from one user to another. It is important to assess administrative data quality across the key dimensions which will be of interest to NSO and data users.



2. Assessing Quality & Measuring Quality

Assessing quality, meaning a qualitative evaluation, and **measuring quality** meaning attaching a quantitative metric to this evaluation of quality. It is not possible to produce indicators for quantitative measurement.

The census that uses administrative sources usually relies on data that were produced outside of the statistical system, in a different organization over which the NSO usually has no control. For this reason, the impact of using these outside sources must be considered carefully.

Assessment

Measurement



UNECE Guidelines for Assessing the Quality of Administrative Sources for Use in Censuses

Stage-1 Source

A metadata-based Quality Assessment of new or re-supplied administrative sources to be used in the census.

Stage-2 Data

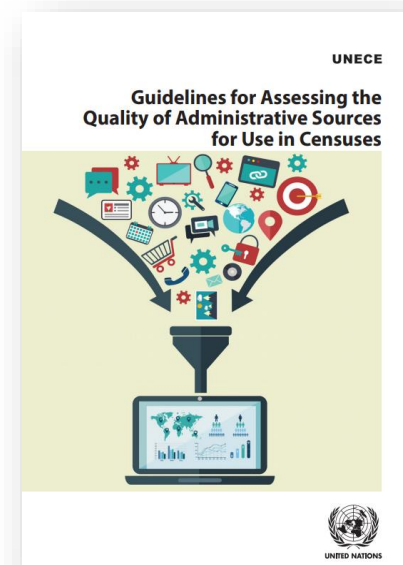
Quality Assessment of the raw administrative data supplied to NSOs by administrative authorities.

Stage-3 Process

The processes carried out on administrative data sources, in censuses, to transform the data for census use and/or to improve quality.

Stage-4 Outputs

The overall Quality Assessment of the census outputs produced using administrative data.



[ECESTAT20214_WEB.pdf \(unece.org\)](https://unece.org/ECESTAT20214_WEB.pdf)



Table 1: Quality dimensions at Source Stage

SOURCE STAGE	QUALITY DIMENSION	DEFINITION
	Relevance and Accuracy	The degree to which the administrative data source meets the needs of the census. This covers the overlap between the census target population, concepts, and definitions (relevance) and the degree to which the data correctly describe the phenomena they were designed to measure (accuracy).
	Timeliness	The lapse between the end of the reference period to which the information pertains and the date on which the information becomes available to the NSO.
	Coherence and Comparability	The degree to which the administrative source can be successfully combined with other sources used in the census, including linkability.
	Accessibility and Interpretability	The ease in which the NSO can obtain the administrative data, covering the impact of any restrictions, privacy and security, public acceptability of the use, the ease of data transfer and receipt, and the availability of metadata.
	The Institutional Environment	Organizational factors affecting the data supplier's capacity to supply data to the quality expected. Covering the strength of the relationship, previous experience, existence of formal agreements, risks associated with the status of the supplier and the supplier's quality standards.

Table 2: Quality dimensions at Data Stage

DATA STAGE	QUALITY DIMENSION	DEFINITION
	Validation and Harmonization	The data files provided to the NSO are in a readable format. Further data validation and harmonization arrangements are in place upon data transfer to the NSO. This is done to confirm that the expected variables/units/reference period/formats have been supplied and to ensure data processing by the NSO is consistent across census use cases.
	Accuracy and Reliability	The accuracy, completeness (for variables and population coverage) and coherence of the data supplied matches the requirements of the specific census use case for which it will be used. Comparisons with alternative sources reveal acceptable levels measurement or representative errors.
	Timeliness and Punctuality	The timeliness and punctuality of the data supplied matches the requirements of the specific census use-case for which it will be used.
	Linkability	Adequate linkage variables are available (i.e., either common unique identifiers or a combination of variables which enable identification) and these are of sufficient quality to enable data linkage.



Table 3: Quality dimensions at Process Stage

PROCESS STAGE	QUALITY DIMENSION	DEFINITION
	Accuracy of record linkage	Where multiple sources are linked (to each other or census responses), the linkage is accurate and unbiased, thereby improving the overall quality of the census methodology and/or dataset.
	Coverage and coherence of statistical registers and admin-based enumerations	Where census (sub)population registers are constructed, or when administrative data are used to supplement census collection, they adequately cover the target population/variables, thereby improving the overall quality of the census methodology and/or dataset.
	Accuracy of conflict resolution	Where different sources are linked and the same attributes are available in them, methods for deciding between sources improve the overall quality of the census methodology and/or dataset.
	Accuracy of editing and imputation	Where census variables/units are derived/constructed through imputation or modelling techniques, this derivation is accurate and unbiased, thereby improving the overall quality of the census methodology and/or dataset.

Table 4: Quality dimensions at Output Stage

OUTPUT STAGE	QUALITY DIMENSION	DEFINITION
	Relevance	The degree to which statistical outputs meet current and potential data user needs.
	Accuracy & Reliability	The closeness between an estimated result and the unknown true value – and how reliable these are over time and geographies.
	Timeliness & Punctuality	The lapse of time between publication and the period to which the data refer, and the time lag between actual and planned publication dates.
	Accessibility & Clarity	The actions taken to help the data user find and understand the data in which she or he is interested.
	Coherence & Comparability	The degree to which data can be compared over time and domain. The degree to which data that are derived from different sources or methods, but which refer to the same phenomenon, are similar.

Source: Eurostat 2013 and 2018



3. Quality Assurance in Türkiye

Control of Data Source

- Content control
- Target population control
- Updating periods and procedures
- Definitions of variables
- Inclusion of unique ID
- Availability of data history
- Metadata control
- Missing data control
- Over coverage
- Under coverage
- Plausibility
- Missing values



3. Quality Assurance in Türkiye

Eliminate over coverage problems

- Foreigners (Residence permit records)
- Deaths (Ministry of Health)
 - in Türkiye, For all death, death certificate is filled out by physicians, whether their residences are in Türkiye or not.
- Students who went abroad for education (Higher Education Council)
- People who went abroad to work (Ministry of Labour and Social Security)



3. Quality Assurance in Türkiye

Coverage of foreign population

- In ABPRS, foreign population covers individuals;
 - holding a valid residence/work permit at the reference day.
 - holding an identity document equivalent to residence permit (international protection. etc.) with a valid address declaration at the reference day.
 - who have already renounced his/her T.R. citizenship and who are residing in the country with a valid address declaration at the reference day.
- ***In addition to Syrians under temporary protection, foreigners holding visas or residence permits shorter than 3 months with the purpose of training, tourism, scientific research etc.. are not covered in annual population statistics.***



3. Quality Assurance in Türkiye

Eliminate under coverage problems

- According to the Turkish Health Care System (reform after 2007), anyone who wants to get health care should be registered to the PR.
- For school enrolment, it is required to be registered in the PR.
- Elections are conducted based on PR. No right to vote without registration to the PR.
- For any official social assistance, registration to the PR is an obligation.
- For subscription to any municipal service (tap water, natural gas, electricity etc.), persons need to be registered in PR.



3. Quality Assurance in 2021 PHC

Eliminate under coverage problems

- To make any bank transaction or similar operation, there is a requirement to be registered in PR. The registered addresses of the individuals in the PR are based on official notices such like court decisions, official calls etc.
- Late registration of newborns is decreasing in Türkiye. 98% of the childbearing are attended by official health personnel . There is a new improvement in the system, health personnel began to register the newborn baby to the PR and give an ID in 2018.

3. Quality Assurance in 2021 PHC

Control of Process

- Resolving inconsistencies
- Step by step control

Control of Output

- Compare outputs / indicators with external data
 - Residence permit
 - Work permit
 - International student records
 - International protection statistics
 - Social security statistics
 - Unemployment statistics
 - LFS (Labour Force Survey)
 - EU-SILC (Statistics on Income and Living Conditions)



4. Quality Assessment in Türkiye for 2021 PHC

2021 PHC Sources

Address Based Population Registration System

- Used for public services
- Obligated for notification
- Updated by registration offices
- Eliminated coverage problem

Population Characteristic Database

- Mostly based on statistical registers
- Cross check with external data

Survey on Building and Dwelling Characteristics

- No imputation
- Low Coefficient of Variation (CV) for survey



5. How we ensure quality in registers

According to Statistical Law, for statistical purposes, TurkStat has the right obtain any register from any data holder.

In the integration of so many registers, we work closely with data holders and technical departments of TurkStat. At the beginning, we try to understand the data. What is its metadata, its coverage? What are the classifications and definitions used in data? Then we list the weaknesses and strengths of the data. For each data set, we determine a quality level. Based on this, we established a hierarchy, order of priority, for all registers. For instance, registers of government official is the first, social security registers is the second, because these are the most quality registers. Also we compare the indicators produced from data with external data sources.





Turkish Statistical Institute
Demographic Statistics Department



Mehmet Doğu KARAKAYA:
TurkStat Expert
dogu.karakaya@tuik.gov.tr

Alper ACAR:
TurkStat Expert
alper.acar@tuik.gov.tr

Mehmet Şaban UCARI:
TurkStat Expert
mehmetsaban.ucari@tuik.gov.tr