

## High-level Seminar on Population Censuses and Migration Statistics in CIS Countries

### Challenges in the transition from traditional to register-based census in Austria

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Austria carried out its first register-based census in 2011 and thereby finalized the transition from traditional census to statistics based on administrative data. This change is accompanied by various advantages, like diminishing costs, prompt availability and the removed burden for the respondents.

The first part describes the process of transition and the related challenges. The various administrative data-sources can be merged via a unique encrypted linking variable (*bPIN*). Since the required information is provided in independent administrative sources, the *principle of redundancy* is a fundamental criterion to enhance data quality. Thus the spending registers can be screened for inconsistencies and contradicting information. *Data privacy protection* is guaranteed, because only Statistics Austria is able to decrypt the linking variables and merge data. *Target swapping* ensures that individuals with very specific combinations of attributes cannot be identified in the final data-set. Another important aspect to be evaluated is *population over-coverage*.

The second part deals with the evaluation of quality in the register-based census. Aim of the quality-assessment is to calculate a quality indicator for each attribute in the register-based census. In general the process flow of the quality framework for administrative data consists of three levels: the *raw data* (i.e. the registers), the combined dataset (*Central Database, CDB*) and the imputed dataset (*Final Data Pool, FDP*). For each level the corresponding quality can be assessed. The process of calculating the quality indicators distinguishes between four different hyperdimensions: *Documentation (HD<sup>D</sup>)*, *Pre-Processing (HD<sup>P</sup>)*, *External Source (HD<sup>E</sup>)* and *Imputation (HD<sup>I</sup>)*. Due to the quality indicators it is possible to evaluate the quality of each attribute at each level of the process flow. Additionally the temporal changes in the quality can be monitored. This enables to compare the quality of the different data sources over time as well as the overall-quality of different census generations.

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