

# Estimation of population size and distribution

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## Outline

- Why do we need estimates of population size and distribution?
- What are the data sources?
- Methods
- Examples
- Exercises

### Why do we need estimates of population size and distribution?

- Completeness rates
- Indicators: CBR, CDR, population growth, TFRG, ...

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### Data sources for population estimates

- Censuses
- Sample surveys
- Population register
- Population projections
  - National
  - United Nations: <https://esa.un.org/unpd/wpp/>

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## Population censuses

- Censuses not perfect
  - Undercount
  - Misunderstanding of questions
  - Age heaping (digital preference)
- The results are becoming more and more obsolete
- Some censuses ask about birth registration of the household members
- Some censuses ask about birth histories of women
- Some censuses ask about deaths in the household in the past 12 (or 24) months

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## Sample surveys

- Sampling uncertainty
- Selection bias
- Sample surveys not good at small-area estimates
- Sample surveys better at estimating flow-related indicators than stocks

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## Population registers

- Complete?
- Updated?

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## Why publish VS based on different sources if the results differ?

- Possible data sources: CR, census, sample surveys, population registers
- No results are perfect
- Useful to start developing a VS report even if the completeness is far below 100%
- Distribution of, for example, births by age of mother may be quite reliable even if the completeness is far below 100%

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## Exercises

1. When was the most recent census conducted in your country?
2. Can it be used to estimate registration completeness?
3. Are there recent population projections for your country that can be used to estimate registration completeness?
4. Download the UN population projections for your country and compare them with the national projections. What do you think are the main reasons for the differences?
5. Try to use the national and/or UN projections to estimate the completeness of the registration of births and deaths for your country.
6. Conclusions