

Session 6A: Sample surveys and register surveys

Regional Training on Producing Register-based Population Statistics in Developing Countries

27– 31 October 2013

Arman Bidarbakht-Nia

Statistician/lecturer, UNSIAP

Sources:

-United Nations (2007): [Register-based Statistics in the Nordic countries](#)

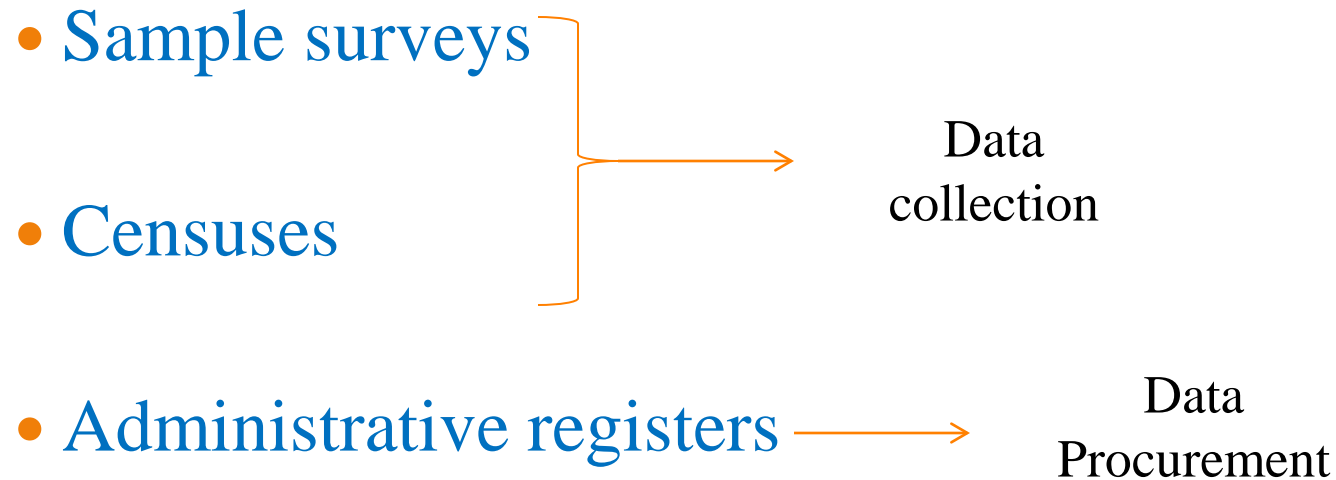
-Wallgren, A. and Wallgren, B. (2007), *Register-based Statistics: Administrative Data for Statistical Purposes*, John Wiley & Sons, Ltd, Chichester, UK.

Outlines

- Review
- How sample surveys benefit by the register systems?
- Combining register-based and sample surveys
- Comparing register-based and sample surveys

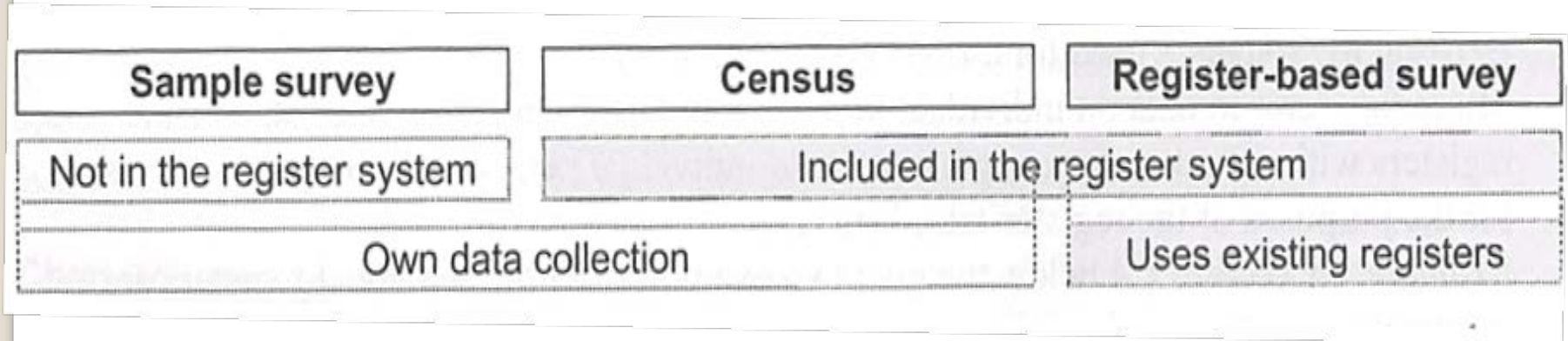
Review

Sources of data:



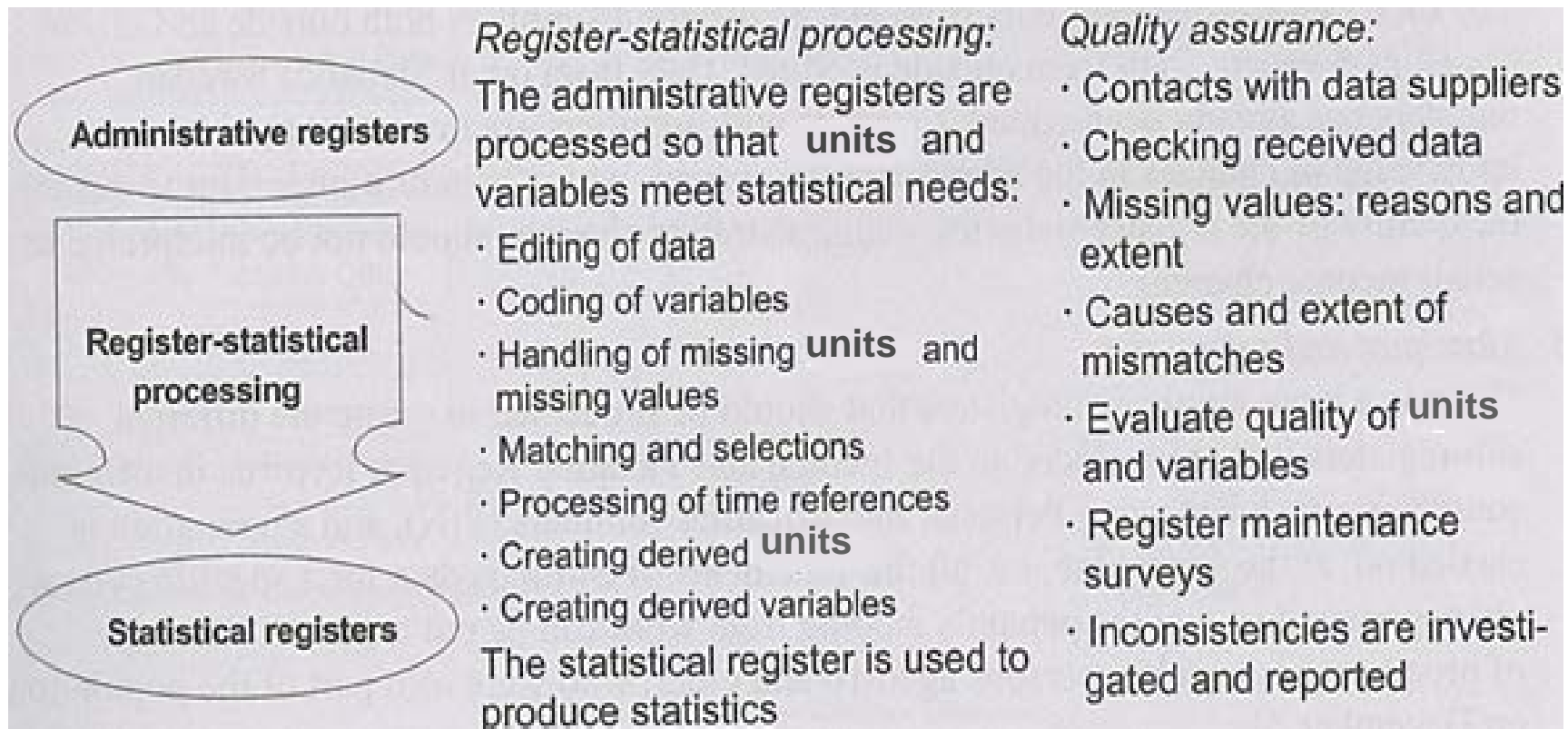
Review

Comparison between the three types of surveys



Review

From administrative register to a statistical register



Review

	Advantages	Disadvantages
<ul style="list-style-type: none"> Surveys based on data collection: sample surveys and censuses 	<p>Can choose which questions to ask</p> <p>Can be up-to-date</p>	<p>Some respondents ..</p> <p>... do not understand the question</p> <p>... have forgotten how it was</p> <p>... do not respond (nonresponse)</p> <p>... respond carelessly</p> <p>Burden on respondents can be high</p> <p>Expensive</p> <p>Low quality for estimates for small study domains (for sample surveys)</p>
Register-based surveys	<p>No further burden on the respondent for the statistics</p> <p>Low costs</p> <p>Almost complete coverage of population</p> <p>Complete coverage of time</p> <p>Respondents answer carefully to important administrative questions</p> <p>Good possibilities for reporting for small areas regional statistics and longitudinal studies</p>	<p>Cannot ask questions</p> <p>Dependent on the administrative system's population. and variable definitions</p> <p>The reporting of administrative data can be slow; the time between the reference period and when data are available for statistical purposes can be long</p> <p>Changes in the administrative systems make comparisons difficult</p> <p>Variables that are less important for administrative work can be of lower quality</p>

How sample surveys benefit by the register systems? (1)

- Sampling
- Measurement and data collection
- Estimation

How sample surveys benefit by the register systems? (2)

- Sampling

- Sampling frame; *coverage, no need for listing, target population*
- Stratification, *size variables (PPS)*

- Measurement and data collection

- Respondent burden; *less questions, less sensitive Qs, , no need for listing, target population*
- Combine historical info (from register) with current info (from sample); *e.g. health survey combined with education and work info*

How sample surveys benefit by the register systems? (3)

- Estimation (*by providing auxiliary information*)
 - All types of calibration: *coverage and non-response adjustment*
 - Reduce the size of non-response reporting error: *less sensitive questions*
 - Small area estimation: *less sample required*

Minimize *sampling error* for a *fixed sample size* or reduce sample size and then *cost* and *total error* with a *fixed sampling error*

Combining register-based and sample surveys

- 1) Defining a precise target population
- 2) Improve register quality by:
 - Register maintenance surveys
 - Indications from sample surveys
- 1) Complement a register with special data collection
- 2) Create derived variables in register by using sample surveys
- 3) Small area estimation
- 4) Virtual censuses

Register-based vs other surveys

Sample survey

Census

Register-based survey

Not included in register system

Included in register system – can be used for other register-based surveys

Uses the register system to define populations and as a source for variables

Sample design, estimation, measures of uncertainty

System-based thinking and coordination with other register-based surveys are important

Own data collection – produce own questionnaires

Uses others' administrative registers

Editing – can contact respondents

Editing – can contact register-providing authority

Nonresponse – reminders, when to stop data collection?

Mismatch related to missing values or undercoverage

Quality flaws – sampling errors, measurement errors

Quality flaws – measurement errors

Quality flaws – relevance errors, lack of comparability

Small tables – cannot give estimates for small groups

Presentation – large tables with many cells