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The use of administrative data in the Population and Housing Census

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Administrative sources in Social Statistics

- Long tradition of using registers and administrative sources at SURS
- Register oriented statistical system
- AS – backbone of social statistics; permanent use of administrative data in the statistical process;
- Legislation is important; available ID; good cooperation with the source of data;
- Confidentiality rules must be applied;
- Quality assessment (e.g. reliability, timeliness, accessibility, completeness, comparability);
- Convert administrative data into statistics;
- Trade off between timeliness and quality.





Census – from paper to register

- SURS has made a great **progress**: from fieldwork Census in 1991 to completely register census in 2011;
- **2002**: combination of paper and administrative sources; huge step towards totally register based census;
- In 2002 dwellings, households and partly persons by fieldwork;
- About 10 administrative and statistical sources have been used
- Missing – **housing** register;
- Innovative data processing (paperless and automated editing)
- Outsourcing.





General prerequisites

- Availability of quality data sources including appropriate topics to cover;
- Unique identifiers to link data on persons, households and dwellings;
- Legislation;
- Access to data (free of charge);
- Right to link individual data;
- Signed agreements with data providers: the regular transmission of data; what, when, who transmit the data; technical protocol;
- Good cooperation - raise the awareness of the owners in case of changes.





Towards to the register-based census

- New - **Real Estate Register (RER)**
 - Established in 2007 by the Surveying and Mapping Authority
 - On the basis of the special field survey and already available sources;
- Update - **CPR** address data with dwelling number;
- Digitization of the **Household Register**.





Data sources

- **Three** registers are the backbone of register-based system
- **CPR** – usual population extracted
 - Basic demographic characteristics
- **Household Register**
 - Relation to the reference person of the household
 - Used for family derivation
- **Real Estate Register**
 - Housing data
- **Other** administrative and statistical sources (social security, social benefits, unemployment, educational, statistical register of employment, students, graduates, etc.)





Linking of data

- **CPR** - Central Population Register

PIN	Address	Dwelling number	
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- **HR** - Household Register

PIN	Address	Dwelling number	Household number
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- **RER** - Real Estate Register

	Address	Dwelling number	
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- All **other** population data sources

PIN			
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Pre-census quality improvement

- The primary goal to analyse and evaluate the quality of the input data
- Inconsistencies have to be suppressed already in the administrative sources
- Household composition, under-coverage of dwelling numbers in the CPR and general unsatisfactory quality of housing data from the RER;
- Improvement in all three basic administrative registers - feedback implemented in all sources before the real census execution.





CPR improvement

- Completeness of updating dwelling numbers in the CPR was far below expectations (300.000 residents in multidwelling buildings without DN);
- Two methods of updating missing dwelling numbers in CPR:
 - Automatic linkage based on ownership of dwelling (combining household and dwelling number)
 - For the rest mailing out by the Ministry of the Interior (funding by SURS)
 - 50 thousands households (20 % of living in the multi-dwelling buildings)
 - The response rate 70 %
- Missing DN in input database after improvement 12,3%;
- Regular updating in the source with every administrative procedure;
- In 2015 missing DN 4,7%; effect of Mass Real Estate Valuation Act.





Household Register improvement

- Inconsistency in Household Register
- The source was for the first time evaluated by the SURS in the 2008
 - Relation to the reference person, marital status, age
 - Relatively very small share of errors
- Corrections applied at the administrative body
 - Introduction of consistency checks at the stage of entering data
 - Very positive feedback by the keeper





Real Estate Register improvement

- The weakest source in the census process;
- Unreliable data on some housing topics;
- Missing buildings and/or missing numbering of dwellings;
- Mass real estate valuation according to the special Act by Mapping Authority - the action ended by the January 2011;





Advantages of a first Register based census

	2002	2011
Number of SURS employees	100 +	6
Number of field work staff	10,000	-
Budget	10 mio EUR	-
First final results	1 year	4 months
Improved quality	Sub(o)bjective	Systematic
Security of personal data	Under risk	No risk
Frequency	Every 10 years	Q, A, 3-4 Y





Lessons learned

- Good **attributes** of a census are maintained;
- Close **cooperation** among ministries managing administrative registers is critical;
- Data privacy and **confidentiality** should be maintained;
- Statistical **processes** for use of administrative data should be established in advance;
- **Users** of census data should be consulted;
- Selecting an appropriate census **reference** date allows easy interpretation of results;
- A register-based census produces **high-quality** data.





Looking to the future

The Slovenian register-based census system already now completely satisfies the EU vision for the post-2021 census:

- Annually updated data;
- Annual data to be available for detailed geographical levels, with annual population counts (persons by place of usual residence) available for a geo-referenced grid;
- Annual data to be available within 12 months of the reference date;
- A more detailed and comprehensive (relative to the annual data) decennial (2031) data collection to be retained.

SURS produces complete census results every three years. The second complete Register based census executed in 2015.





Thank you for your attention

Source: D. Dolenc, Advantages, process, and lessons learned in Slovenia in transitioning from a conventional population and housing census to a register-based census, 2017

