



# CENSUS HOUSEHOLD DATA: CHALLENGES TO KEEP IT UP TO DATE

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**Is annual or quinquennial dissemination of the census household data possible?**



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# Methodology and data processing

## **Stage I – Creation of dwelling and census households**

- Households for register based and current residence
- Definition
- Sources and key variables
- Usage for register based and current residence
- Census household types

## The outputs

### **Stage II – Analyzing the outputs**

- Comparing households by register based and current residence
- Advantages and limitations of variables

### **Stage III – Insights for the future**

- ESOPH
- Sustainability





# **STAGE I – CREATION OF DWELLING AND CENSUS HOUSEHOLDS**



## Households for register based residence

- 5 449 270 inhabitants
- de jure
- Source – Register of Natural Persons and other Administrative data sources
- Sustainable

## Households for current residence

- 5 233 612 inhabitants
- Information for every 10 years (de facto)
- Source – Census forms
- Dissemination of households on national level
- Unsustainable

<b>Differences between register based and current residence</b>	<b>Number of inhabitants</b>	<b>Percentage from popul.</b>
inhabitants with different register based and current residence within Slovakia	573 058	10,52 %
inhabitants with current residence abroad	264 269	4,85 %
inhabitants living in Slovakia on current residence, but without residence in the RNP	48 611	0,89 %



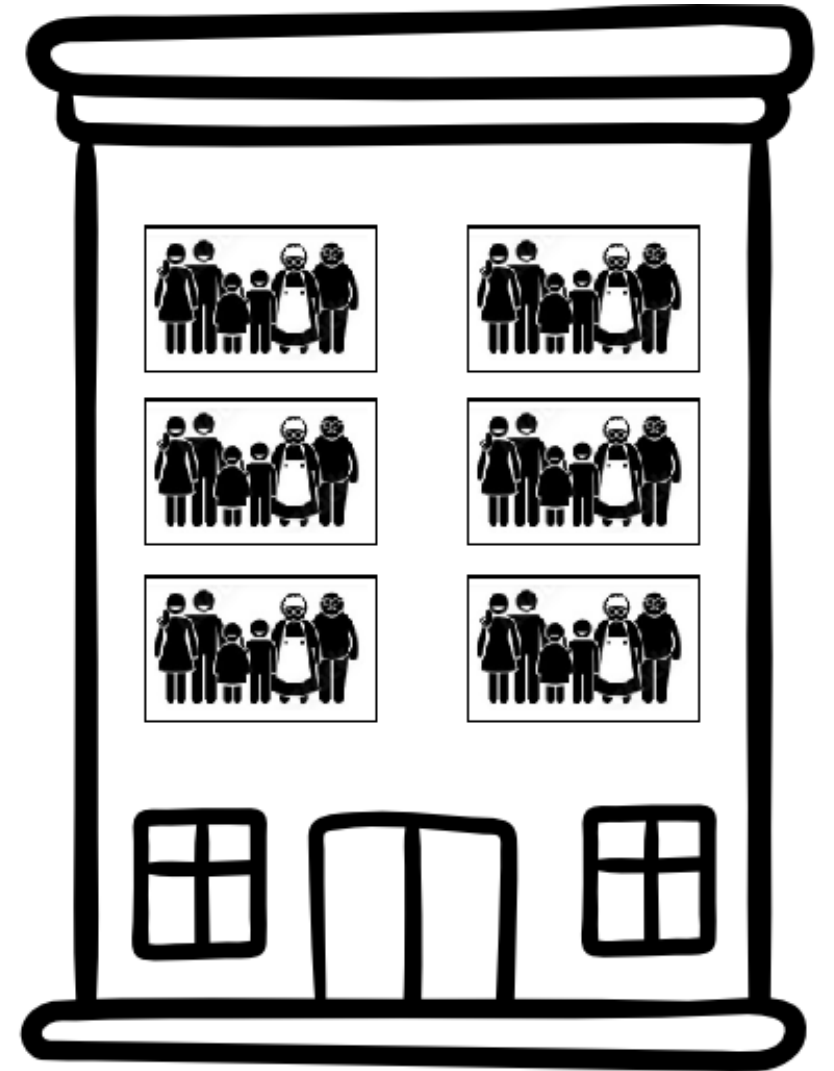
## Creation of dwelling households on address points

- Each occupied **adres points** have one or more dwellings.
- **Dwelling household** consists of all persons who jointly occupy one dwelling, i.e. each occupied dwelling represents one dwelling household. Chief criterion: common housing.

*Dwelling households are created based on the current residence of their members (the factual residence at the decisive moment of the census).*

## Key variables for dwelling household creation

- Flat number (Register + Census forms)
- Family relations (Register + Census forms)



## Sources & Variables (multi-dwelling buildings)

Register  
based  
residence

Completeness -  
% of populaion of  
multi-dwelling  
buildings

If current residence  
is different than  
register based

Completeness -  
% of populaion of  
multi-dwelling  
buildings

### Register of Natural Persons

family relations



83.9%



79.9%

flat numbers (only multi-dwelling  
buildings)



33.6%



-

### Cadaster

flat number of the owner (only  
multi-dwelling buildings)



20.0%



-

### Census forms

flat number



76.8%



72.7%

relationships to persons living  
in the same dwelling household



-

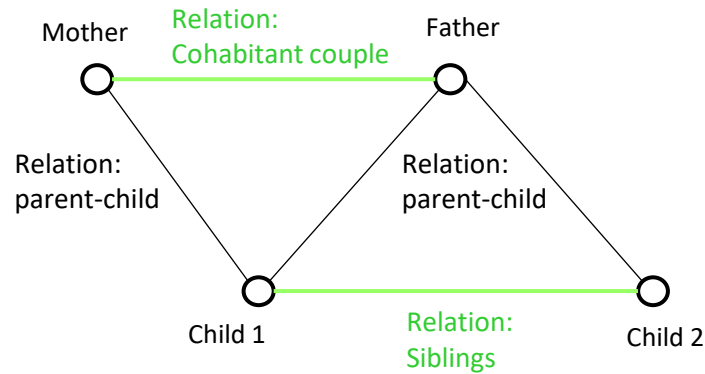


92.5%

## Family relations from register (RNP)

### Existing relations in the RNP

- Spouse
- Parent-child



### Created relations under an adres point

- Siblings
- Cohabitants with common child
- Grandparents
- Mother-in-law / Father-in-law
- Uncle, niece
- And so on

## Mirror relations from Census forms

Residence Family Education Occupation Ethnicity Religion Summary

What persons do you live with in the flat at the place of your current residence? ⓘ

If you lived with children and/or grandchildren, type in with how many of them as of 1 January 2021.

I live alone

I do not live alone

Back Next

I live with:

<input type="checkbox"/> husband	<input type="checkbox"/> wife
<input type="checkbox"/> father	<input type="checkbox"/> mother
<input type="checkbox"/> son	<input type="checkbox"/> daughter
<input type="checkbox"/> brother	<input type="checkbox"/> sister
<input type="checkbox"/> father-in-law	<input type="checkbox"/> mother-in-law
<input type="checkbox"/> son-in-law	<input type="checkbox"/> daughter-in-law
<input type="checkbox"/> grandfather	<input type="checkbox"/> grandmother
<input type="checkbox"/> grandson	<input type="checkbox"/> granddaughter
<input type="checkbox"/> great-grandfather	<input type="checkbox"/> great-grandmother
<input type="checkbox"/> great-grandson	<input type="checkbox"/> great-granddaughter
<input type="checkbox"/> other relative (e.g. uncle, aunt, cousin, brother-in-law, sister-in-law)	<input type="checkbox"/> cohabiting partner (man)
<input type="checkbox"/> cohabiting partner (woman)	<input type="checkbox"/> person with no family relation

SODB SCÍTANIE OBYVATEĽOV, DOMOV A BYTOV

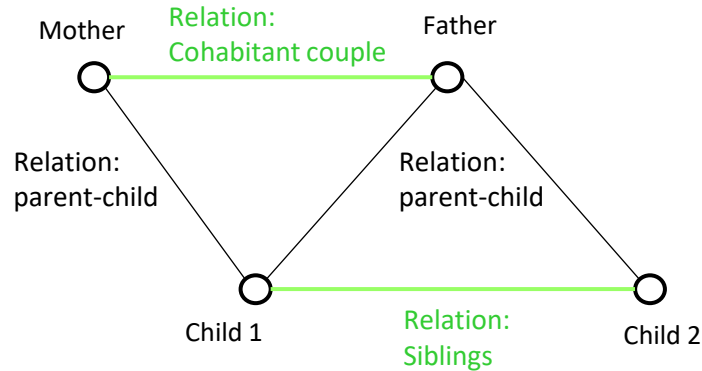
Log off



## Family relations from register (RNP)

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- Spouse
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### Created relations under an address point

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- And so on

## Mirror relations from census forms

### Address point

#### Person 1

- With Mother
- With Father

#### Person 2

- With Cohabitant partner (m)
- With Daughter

#### Person 3

- With Cohabitant partner (w)
- With Daughter

#### Person 4

- I live alone

Further analyses were needed

#### Person 5

- With Son
- With Daughter
- With Daughter

## Cluster of relations as starting point

- Clusters of relations in each address point
- Subsequently decided that the people in the cluster of relations are living together or living separately in dwellings

## Inaccuracy of flat numbers

- There is no database of unique and accurate flat numbers of dwellings
- There is no standardized system for numbering dwellings
- Inhabitants often do not know the apartment number they live in or do not know where to find it

## Case 1 – adjustment of flat numbers based on relations

Person	Flat number	Cluster of relation (RNP)	Cluster of relation (Census form)
A	2	1	1
B	2	1	1
C	2	2	2

## Case 2 – adjustment of relations based on flat numbers

Person	Flat number	Cluster of relation (RNP)	Cluster of relation (Census form)
A	1	1	NaN
B	2	1	NaN
C	2	1	1

## Prioritization of variables used in household creation:

1. Flat number (cadastral)
2. Relations from RNP
3. Relations from census forms
4. Flat number (RNP)
5. Flat number (census forms)

## Creation of census households

- Each occupied **dwelling household** consists of one or more census households
- **Census household** consists of persons who jointly occupy one dwelling and is determined on the basis of reciprocal family relations. The census household is the basic unit and is not further divided. Chief criteria: common housing and family relations.

*Census households are created based on the current residence of their members (the factual residence at the decisive moment of the census).*

## Key variables for census household creation

- Family relations from census forms
- Family relations from register



## Couple census household

### Married couple households

- Without a child
- With dependent child
- Without a dependent child

### Opposite-sex cohabiting couple households

- Without a child
- With dependent child
- Without a dependent child

### Same-sex cohabiting couple households

- Without a child
- With dependent child
- Without a dependent child

## Lone parent census households

### Lone father households

- With dependent child
- Without a dependent child

### Lone mother households

- With dependent child
- Without a dependent child

## Non-family census households

### More than one-person census households (without close family relationship)

- Grandparents with grandchild
- Siblings
- Indirect family relationship

### One-person census household

- With another member in the dwelling
- Without another member in the dwelling

### Collective and institutional households



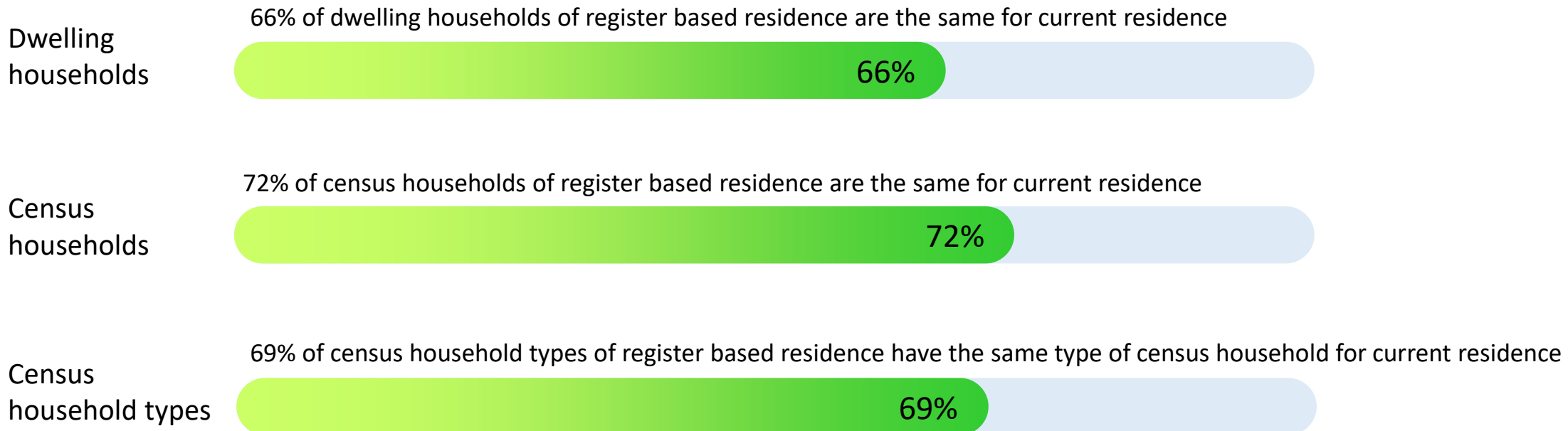
## **STAGE II - ANALYZING THE OUTPUTS**



# The differences between register based and current residence

Types of census households	Register based res.	Current res.	Difference	Percentage of difference
Married couple without a child	262 933	360 007	<b>97 074</b>	<b>36,92%</b>
Married couple with child	656 170	584 257	<b>-71 913</b>	<b>-10,96%</b>
Opposite-sex cohabiting couple without a child	No data	49 705	-	-
Opposite-sex cohabiting couple with child	67 390	83 793	<b>16 403</b>	<b>24,34%</b>
Same-sex cohabiting couple without a child	No data	1 087	-	-
Same-sex cohabiting couple with child	No data	30	-	-
Lone fathers	65 224	51 632	<b>-13 592</b>	<b>-20,84%</b>
Lone mothers	435 332	305 567	<b>-129 765</b>	<b>-29,81%</b>
Non-family households	58 012	52 472	<b>-5 540</b>	<b>-9,55%</b>
One-person household without another member in the dwelling	410 072	488 853	<b>78 781</b>	<b>19,21%</b>
One-person household with another member in the dwelling	353 040	346 761	<b>-6 279</b>	<b>-1,78%</b>

# The similarity between register based and current residence



	Family relations from register (RNP)	Flat number from registers (Cadaster & RNP)	Flat number from census forms	Mirror relations from census forms
Advantages	<ul style="list-style-type: none"> <li>Broad scale of family relations</li> <li>Relatively precise family relations</li> </ul>	<ul style="list-style-type: none"> <li>Precise and unique identifier for dwellings</li> <li>High quality for flat number from Cadaster</li> </ul>	<ul style="list-style-type: none"> <li>Only flat number for people with different current residence</li> </ul>	<ul style="list-style-type: none"> <li>Only information about how people living together in one dwelling in current residence</li> <li>Contains cohabitants</li> </ul>
Limitations	<ul style="list-style-type: none"> <li>Do not completely cover cohabitants</li> <li>Without census only for register based residence</li> </ul>	<ul style="list-style-type: none"> <li>High missing rate</li> <li>Low quality for flat number from RNP</li> </ul>	<ul style="list-style-type: none"> <li>High non-response rate</li> <li>High error rate</li> </ul>	<ul style="list-style-type: none"> <li>High error rate</li> </ul>







## Stage III – Insights for the future



# ESOPH

## Domain (f) – relationships between population, family, households and housing

*„...Census statistics on housing should be available at least every five years and progressively move to annual frequency for specific variables of Union relevance....“*

*Position of the European Parliament, 17*

*„...For the ‘housing’ domain, the data shall be transmitted to the Commission (Eurostat) annually and every 5 and 10 years. The annual data collection shall start from the reference year 2031....“*

*Periodicity of data transmission, ANNEX III*

### Concept of Family nucleus

- a married couple, a couple in a registered partnership or a couple living in a consensual union without children
- a married couple, a couple in a registered partnership or a couple living in a consensual union with one or more unmarried children
- a parent living with one or more unmarried children.

### Concept of Household

- a group of two or more persons who combine to share living quarters, or to share other specific resources
- an individual person who does not form part of any other household.

### Possible list of variables

- Number of families
- Type of family
- Marital and partnership status
- Duration of marriage/consensual union
- Number of live-born children
- Household members – socio-economic status
- Housing patterns of homeless and persons without fixed housing



# If we talking about sustainability... (register based residence)

## What we can do

- Create family relations from register
- Create cohabitant couples if they have a common child
- If meantime the data quality of flat numbers in Register of Natural Persons improve we could create dwelling households with high accuracy
- Household data sampling

## What we cannot do

- We cannot create cohabitant couples (opposite-sex or same-sex) if they do not have a common child
- We do not know family relations for foreigners and for people with missing information
- Without census we cannot know the actual (current) residence of the population



**THANK YOU FOR YOUR ATTENTION!**



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