

Overcoming the Challenges of the Register-based Housing Census 2021 in Austria

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Geneva, 20 September 2022

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Independent statistics for evidence-based decision making

Building a Fundament

Overview of the presentation



Register-based Census in Austria

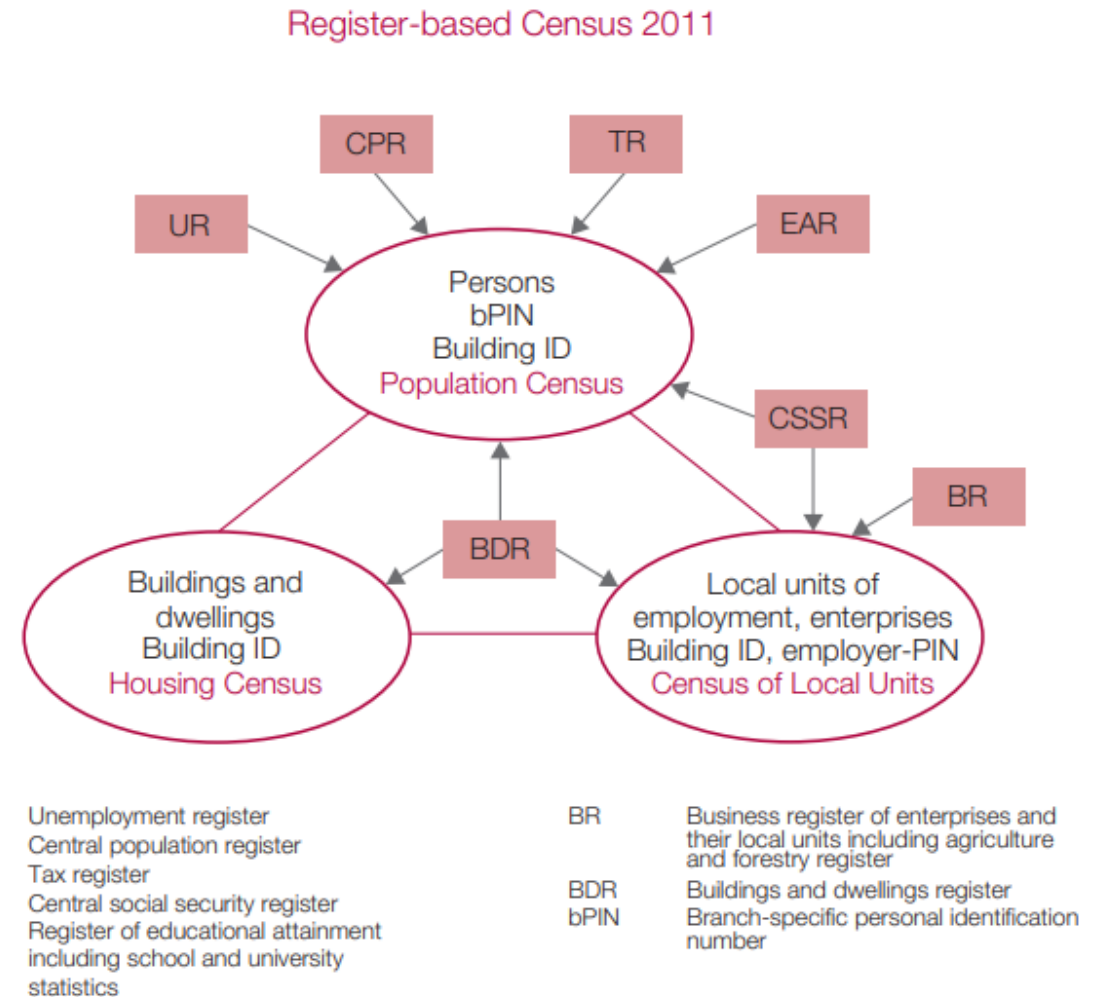
An overview




Linking Three Survey Subjects

Register-based Census in Austria

- Data consistency within the three survey subjects by linking the data
- Data protection: anonymous data collection with bPIN OS and use of the method record swapping
- Quality framework: quality indicator for each individual characteristic

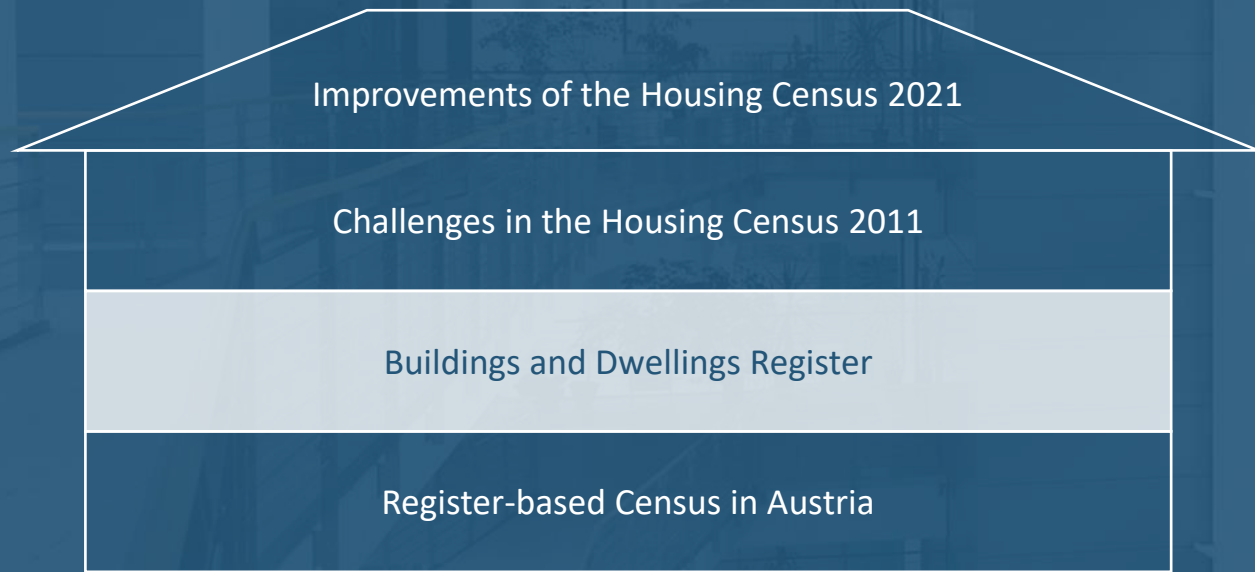




Question 1:
**Are you using any register data for
your Housing Census?**

Buildings and Dwellings Register

From creating a register to updating a register



Why a Register was Created

Buildings and Dwellings Register

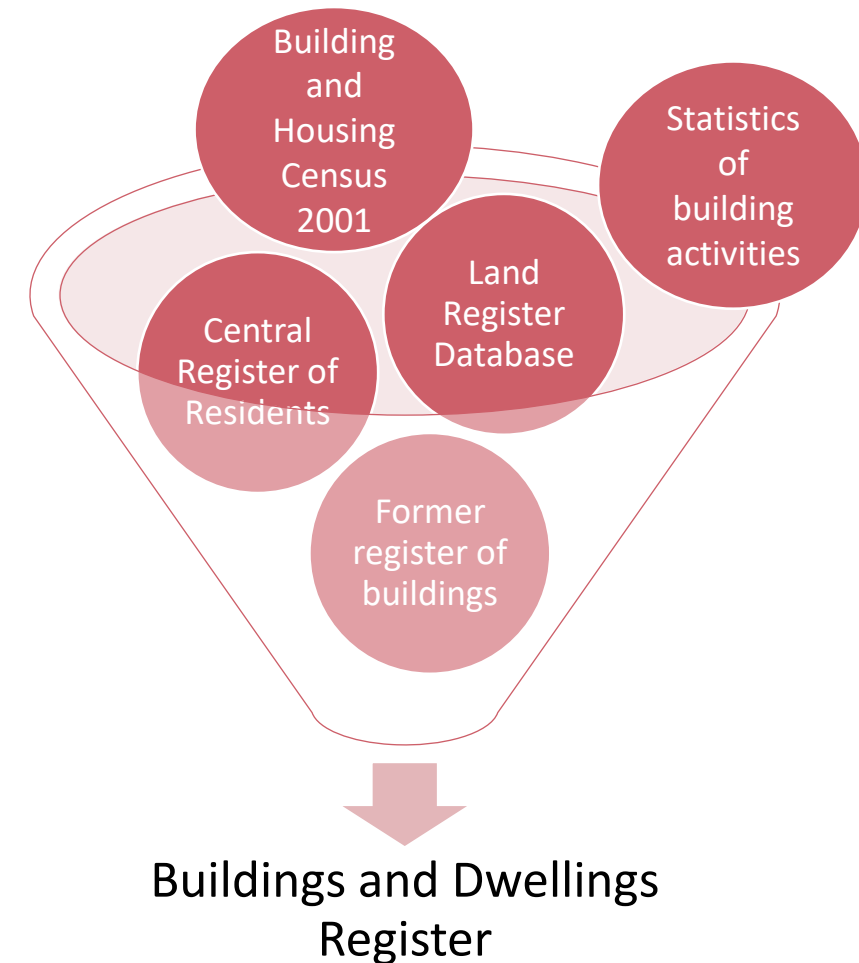
- 2001 was the **last conventional census** which was followed by the political order to make **preparations to install registers** in order to substitute the conventional census in the future.
- For reasons of legal **competence**, it was necessary to build up **two registers**:
 - The **Address Register** which has public access and contains only geocoded addresses of parcels and buildings.
 - The **Buildings and Dwellings Register** which provides no public access to individual data and includes the address register and attributes of buildings and dwellings.

The start-up of the BDR and the Address Register was on 26 November 2004.

How a Register was Created

Buildings and Dwellings Register

- The establishment of the **Buildings and Dwellings Register** was started after the census 2001.
- The legal basis of the Buildings and Dwellings Register is the **Buildings and Dwellings Register Act 2004**. It governs
 - the data content (units, attributes)
 - the maintenance responsibility
 - the access rights to the data
- The BDR is set up at **Statistics Austria**.
- The initial filling of the BDR was done from various administrative data sources and previous statistical surveys.



How a Register is Kept Updated

Buildings and Dwellings Register

- The **municipalities** are **responsible** for data updates.
- Therefore Statistics Austria has to provide the **Address-BDR-Online free of charge**.
- The **municipalities** are obliged to
 - register changes of addresses and building data
 - record building activities (new buildings, conversion of buildings)
- Corrections of initial data and additions of missing data only become necessary when a municipality edits a dataset for example in case of reporting a building permission of an existing building. There is **no obligation for a general data correction**. The missing obligation for general data corrections causes quality lacks.
- Input from statistical surveys is not allowed.

Address-BDR-Online for the Municipalities

Buildings and Dwellings Register

The screenshot shows a web form for the Buildings and Dwellings Register. The form is divided into several sections, each with a grey header. Numbered callouts (3-16) point to specific fields:

- 3:** Status dropdown menu (set to 'aktiv').
- 4:** Building address section, including HNr.3 (Zahl, Buchst.), HNr.4 (Zahl, Buchst.), and Gebäudeunterscheidung.
- 5 & 6:** Gebäudeeigenschaft section, including Hauptgebäude der Adresse and geeignet für Wohnzwecke checkboxes.
- 7:** Katastralgemeinde dropdown menu.
- 8:** Grundstücksnummer section, including BauGrKz., Gnr1, Gnr2, RW, HW, and Meridian.
- 9:** Grundstücksnummer section, including RW, HW, and Meridian.
- 10:** Referenz-Key input field.
- 11:** Gebäudenutzung input field.
- 12:** Bauperiode section, including Errichtungsdatum (TT.MM.JJJJ oder JJJJ).
- 13:** Eigentümer dropdown menu.
- 14:** Gebäudehöhe section, including m Brutto-Rauminhalt and m².
- 15:** Flächen section, including Überbaute Grundfläche, bebaute Fläche (BEV), Bruttogrundfläche, and Nettogrundfläche.
- 16:** Geschoße section, including oberirdisch and unterirdisch checkboxes.

3: status

4: address of the building

5 & 6: type of building

7: cadastral community

8: property parcel number

10: reference key

11: type of building (predominant use)

12: period of construction

13: type of ownership

14: building height

15: building area in square meters

16: number of floors



Question 2:
Are other institutions (eg. municipalities) involved in the data collection process for your Housing Census?

Challenges in the Housing Census 2011

Too much and outdated

Improvements of the Housing Census 2021

Challenges in the Housing Census 2011

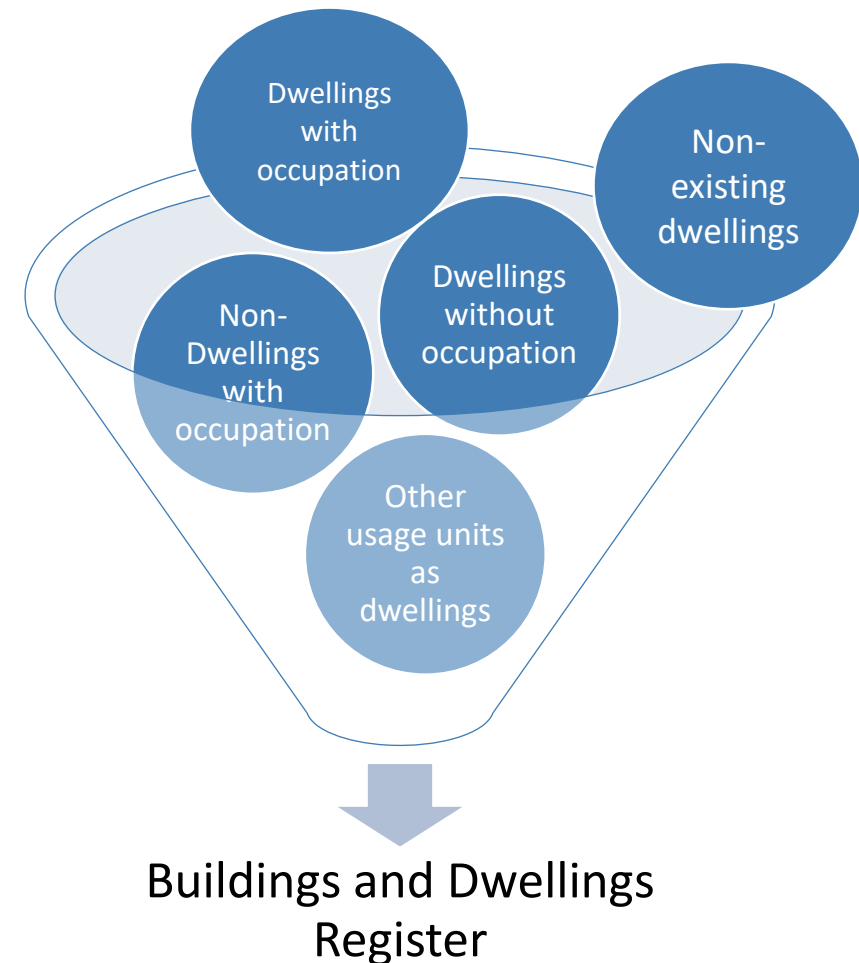
Buildings and Dwellings Register

Register-based Census in Austria

High Number of Unoccupied Dwellings

Challenges in the Housing Census 2011

- 2011, it was discovered that in many cases housing **demolition was underreported** in the Buildings and Dwellings register
- Therefore, the Buildings and Dwellings Census 2011 didn't publish the **unoccupied dwellings**
- Although the reporting quality of demolished houses improved over the years, those **non-existing dwellings** from the time of the register compilation are still included in the register.



Characteristics might not be up-to-date

Challenges in the Housing Census 2011

- The **municipalities** are **responsible** for data updates.
- If there is a **new building**, citizens can only register in the Central Register of Residents if the building exists in the Buildings and Dwellings Register. This ensures, that new buildings are added and kept up-to-date. Recording new building is necessary for the municipalities because of **administration use**.

The image shows a screenshot of a building registration form with 16 numbered callouts pointing to specific fields:

- 3: Status dropdown menu (set to 'aktiv')
- 4: HNr.3 and HNr.4 input fields (Zahl and Buchst.)
- 5: Gebäudeadresse input field
- 6: Hauptgebäude der Adresse and geeignet für Wohnzwecke checkboxes
- 7: Katastralgemeinde dropdown menu
- 8: BauGrKz. Gnr1 and Gnr2 input fields
- 9: RW and HW input fields
- 10: Meridian input field
- 11: Referenz-Key input field
- 12: Bauperiode dropdown menu and Errichtungsdatum input field
- 13: Eigentümer input field
- 14: Gebäudehöhe input field and Brutto-Rauminhalt input field
- 15: Flächen section including Überbaute Grundfläche, bebaute Fläche (BEV), Bruttogrundfläche, and Nettogrundfläche
- 16: Geschöße section including oberirdisch and unterirdisch input fields

- Changes in the building are only used for **statistical content**. Also changes in the building might not get to knowledge of the municipalities (e.g. dwellings used commercially).
 - **lack of motivation**
 - **lack of information**

Quality Indicator for Individual Characteristics

Challenges in the Housing Census 2011

- The method of collecting data from existing administrative registers required a completely **new quality assessment concept**. A quality framework was developed.
- Quality-related processes of the agencies that keep the registers, the **documentation and maintenance of the data**, and formal errors are evaluated in order to calculate this indicator.

The Housing Census 2011 didn't have any comparison data for cross checks or adding information.



Question 3:

Do you use indicators to measure the quality of your Housing Census?

Improvements of the Housing Census 2021

Including survey data and new administrative data



How to Identify Non-Existing Dwellings

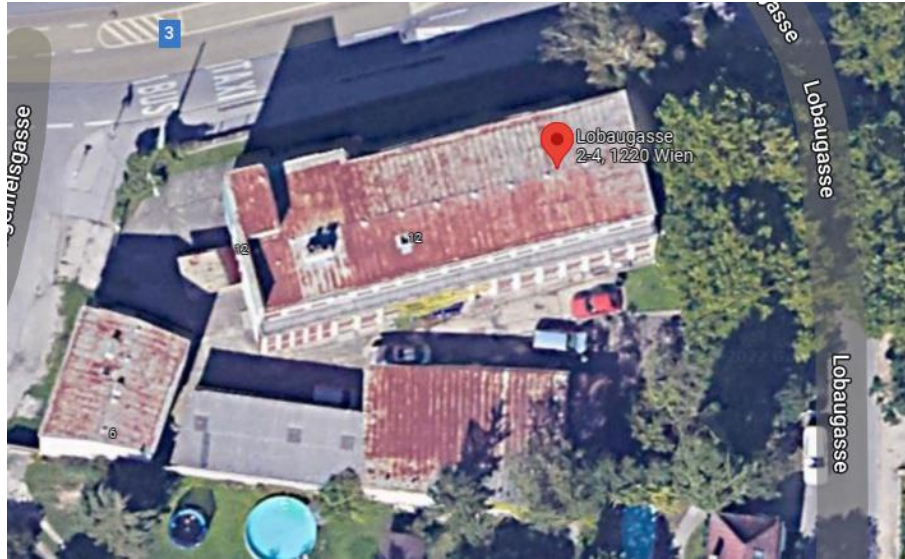
Improvements of the Housing Census 2021

- First, we looked at the dwellings from the time the register was compiled and checked with the central population register if there had been any residence registration from 2002 to 2019.
- If there was no residence registration, we had different approaches depending on the location and type of building:
 - Hotels and Building for education -> phone calls
 - Buildings in small municipalities -> municipal authorities did research
 - Buildings in cities -> local inspections

Local Inspections

Improvements of the Housing Census 2021

- Example: A factory with one dwelling, where no one has been registered since 2002.



Google Maps Screenshot



Picture I from local inspections

Local Inspections

Improvements of the Housing Census 2021

- Two Examples: Each building with one dwelling, where no one has been registered since 2002.



Picture II from local inspections



Picture III from local inspections

How to Achieve Up-To-Date Characteristics

Improvements of the Housing Census 2021

- In the Buildings and Dwellings register the characteristic **type of ownership** is put once at the first registration of the building. The municipalities don't change the type of ownership if a rented dwelling is now owner-occupied or the other way around.
- Therefore, comparison data is needed. For the Census 2021, we received the status of ownership from the Land Register. The reference date for the data was the 31 October 2021

The **Land Register** (*Grundbuch*) is a public register of the Republic of Austria. All plots of land and rights in rem to the same are registered in the Land Register (e.g. title, condominium ownership, liens, building rights, servitudes, easements).

Linking Comparison Registers With Base Register

Improvements of the Housing Census 2021



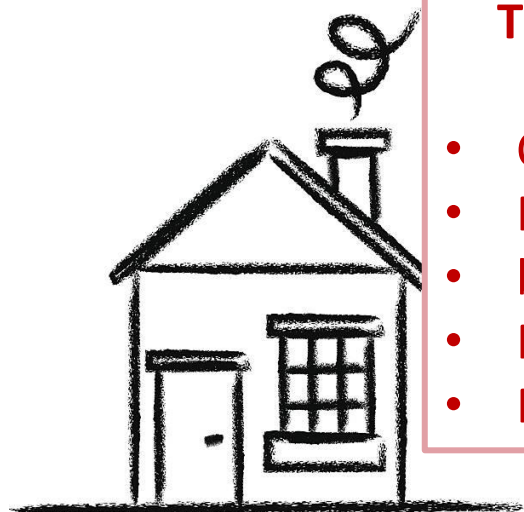
The Land Register

- Cadastral Municipality
- Plot Number
- bPIN from owner



Central Register of Residents

- bPIN from residents
- Number from building
- Number from dwelling



The Buildings and Dwellings Register

- Cadastral Municipality
- Plot Number
- bPIN from residents
- Number from building
- Number from dwelling

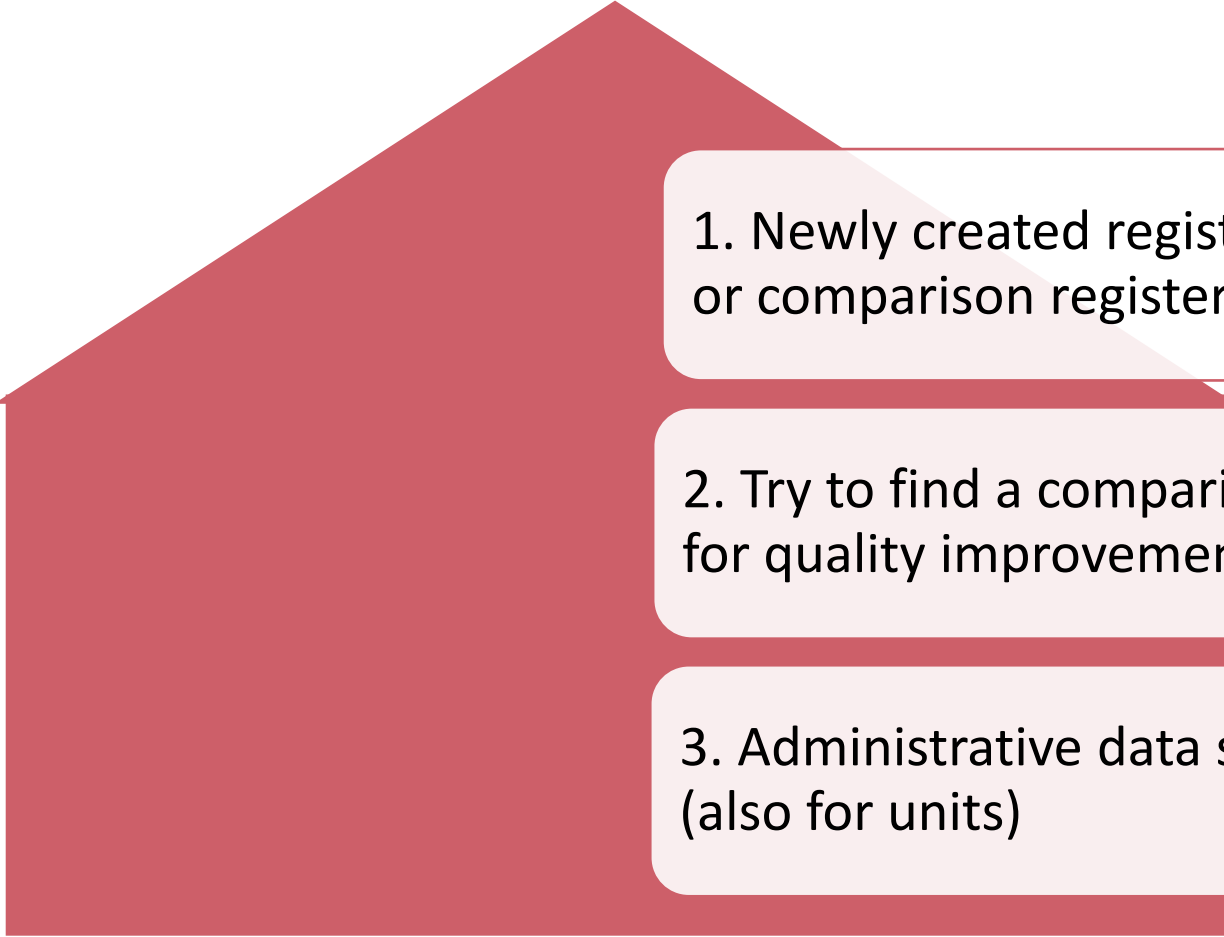


Question 4:

**Do you have to link data for your
Housing Census e.g. via statistical
matching?**

Top 3: Lessons Learned

Improvements of the Housing Census 2021



1. Newly created register should be verified with a survey or comparison register data.

2. Try to find a comparison register to your base register for quality improvement.

3. Administrative data should use the same reference key. (also for units)



Question 5:

Which lessons learned are you taking away from the presentation?

Do you have any further questions?

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For more details

References

- [Census 2011 – Austria \(EN\)](#)
- [Address, Buildings and Dwellings Register \(EN\)](#)
- Berka, C., Humer, S., Lenk, M. Moser, M., Rechta, H. & Schwerer, E. (2010): A Quality Framework for Statistics based on Administrative Data Sources using the Example of the Austrian Census 2011. In: Austrian Journal of Statistics, Volume 39, Number 4, 299-308. Lenk, M. (2008): Methods of Register-based Census in Austria, a contributing paper to the “Seminar on Innovations” in Official Statistics, United Nations, New York, Friday, 20th February 2009, STATISTIK AUSTRIA, Vienna.