Timeline of censuses in Germany

- **1971**: traditional complete enumeration
- **1981**: no census due to disagreement regarding cost
- **1983**: protest; census stopped by constitutional court
- **1987**: Traditional complete enumeration
- **2001**: no regular census, but census test evaluating registered assisted approach
- **2021**: improved register assisted population and housing census
- **2024ff (planned)**: register-based census

© Federal Statistical Office of Germany | Department Population, Finance and Taxes
1983: The census that did not happen
Judgement of the constitutional court

Census 1983 judged as unconstitutional
- Re-transmission of census data to residents’ registration offices
- Insufficient protection of (formally anonymised) micro data

Definition of basic principles for future censuses
- Right of informational self-determination
  - Data collections must be justified by legal basis, limited to a specific purpose, commensurate with the public interest
  - Statistical data must be used for statistics only and not be (re-)transmitted to other public bodies
  - Matching of register data must not lead to catalogisation of the population; strict limitation of ID numbers
- Strict organisational and technological standards for collection, processing and storage of data
1987: The census still subject to criticism
2001: A census test, not a census

Governments in 1990s opposed to new traditional census

Census test 2001 explores register-assisted model

- Quality of population registers requires correction by a sample survey
- Quality issues less important in small communities: differential procedures for communities > and < 10,000 inhabitants
- Some variables require a statistical survey
  - Labour market participation, educational attainment
  - Complete enumeration of dwellings and buildings
2011 Census: Register-assisted approach

Statistical register of addresses and buildings:
- Data from population registers
- Data collection in special facilities
- Household sample survey:
  - Large municipalities: Determination of errors in data from population registers
  - All municipalities: Collection of additional topics
- Data from Fed. Employment Agency and data on public sector personnel
- Housing census
- Follow-up survey

Correction of multiple registration in data from population registers
- Correction of over-/undercoverage in data from population registers
- Reference data stock
- Extrapolation
- Household generation

Clarification of place of residence
- Clarification of discrepancies in small municipalities

Census database

© Federal Statistical Office of Germany | Department Population, Finance and Taxes
2011 Census: Register-assisted approach

Statistical register of addresses and buildings

- Address data from Federal Mapping Agency
- Address data from population registers
- Address data from Federal Employment Agency

Data from population registers

Data collection in special facilities

Household sample survey
- Large municipalities: Determination of errors in data from population registers
- All municipalities: Collection of additional topics

Data from Fed. Employment Agency and data on public sector personnel

Housing census

Correction of multiple registration in data from population registers

Correction of over-/undercoverage in data from population registers

Reference data stock

Extrapolation

Household generation

Clarification of place of residence

Clarification of discrepancies in small municipalities

Follow-up survey

Census database

© Federal Statistical Office of Germany | Department Population, Finance and Taxes
2011 Census: Register-assisted approach

Data from population registers

- Correction of multiple registration in data from population registers
- Correction of over-/undercoverage in data from population registers

Data collection in special facilities

- Household sample survey
  - Large municipalities: Determination of errors in data from population registers
  - All municipalities: Collection of additional topics
- Data from Fed. Employment Agency and data on public sector personnel

Clarification of place of residence

Clarification of discrepancies in small municipalities

Follow-up survey

Reference data stock

Extrapolation

Household generation

Census database

Address data from Federal Mapping Agency

Address data from population registers

Address data from Federal Employment Agency

Statistical register of addresses and buildings

Data from population registers

Housing census
2011 Census: Register-assisted approach

1. **Statistical register of addresses and buildings**
   - Address data from Federal Mapping Agency
   - Address data from population registers
   - Address data from Federal Employment Agency

2. **Data from population registers**
   - Correction of multiple registration in data from population registers
   - Correction of over-/undercoverage in data from population registers
   - Clarification of place of residence
   - Clarification of discrepancies in small municipalities

3. **Household sample survey**
   - Large municipalities: Determination of errors in data from population registers
   - All municipalities: Collection of additional topics

4. **Data collection in special facilities**
   - Data from Fed. Employment Agency and data on public sector personnel

5. **Data from population registers**
   - Reference data stock
   - Extrapolation
   - Household generation

6. **Housing census**

7. **Census database**

© Federal Statistical Office of Germany | Department Population, Finance and Taxes
2011 Census: Register-assisted approach

1. Statistical register of addresses and buildings
   - Address data from Federal Mapping Agency
   - Address data from population registers
   - Address data from Federal Employment Agency

2. Data from population registers
   - Data collection in special facilities
   - Household sample survey
     - Large municipalities: Determination of errors in data from population registers
     - All municipalities: Collection of additional topics

3. Follow-up survey
   - Data from Fed. Employment Agency and data on public sector personnel
   - Correction of multiple registration in data from population registers
   - Correction of over-/undercoverage in data from population registers

4. Census database
   - Clarification of place of residence
   - Clarification of discrepancies in small municipalities
   - Reference data stock
   - Extrapolation
   - Household generation
2011 Census: Register-assisted approach

1. Statistical register of addresses and buildings
   - Data from population registers
   - Data collection in special facilities
   - Household sample survey
     - Large municipalities: Determination of errors in data from population registers
     - All municipalities: Collection of additional topics
   - Data from Fed. Employment Agency and data on public sector personnel

2. Correction of multiple registration in data from population registers
   - Correction of over-/undercoverage in data from population registers

3. Housing census

4. Reference data stock
   - Clarification of place of residence
   - Clarification of discrepancies in small municipalities

5. Extrapolation
   - Household generation

Census database

© Federal Statistical Office of Germany | Department Population, Finance and Taxes
2021 Census: Optimized model

- Correction of over-/under-coverage of population register data
  - Based on information from Census 2011
  - Method needs to produce comparable quality in all municipalities
- No more data from employment registers
  → collecting employment information with the household sample survey
- Integrated process of merging and correction of data from different sources
- Optimized technological and organisational process
- Additional data sources
2021 Census: Optimized model

- Statistical register of addresses and buildings
  - Data from population registers
  - Data collection in special facilities
    - Household sample survey
      - All municipalities: Determination of errors in data from population registers
      - All municipalities: Collection of additional topics
    - Data from Fed. Employment Agency and data on public sector personnel
  - Housing census
    - Follow-up survey
- Reference data stock
  - Correction of multiple registration in data from population registers
    - Correction of over-/undercoverage in data from population registers
  - Inter-source plausibility checks
  - Extrapolation
    - Household generation
  - Census database

© Federal Statistical Office of Germany | Department Population, Finance and Taxes
Plans for Post 2021 Census

- Register based population figures
  - Annual / quarterly periodicity
  - Geo-referenced grid
  - Annual automatic correction of multiple registration

- No survey-based correction of register data
  - Alternative methods of correction of over-/under-coverage under discussion (e.g. „signs of life“)

- New register of dwellings and buildings
  - Creation of register
  - Dwelling ID to be linked with population register

- Integration with system of household surveys
  - Supplementary sample survey covering variables not available from registers (yet)
Conclusions

- Long and special history of population censuses
  - Public opinion very sensitive
  - Limited possibilities to use last traditional census as a basis for a register-based approach

- Register assisted census possible even under constraints
  - Strict data protection regime
  - No universal person ID number
  - Imperfect data quality of registers

- Increased register use nevertheless required
  - Georeferencing
  - Cost and burden
  - Timeliness and periodicity
THANK YOU.

Stefan Dittrich
Thomas Körner
stefan.dittrich@destatis.de
thomas.koerner@destatis.de
www.destatis.de

© Federal Statistical Office of Germany | Department Population, Finance and Taxes