Register based census in Lithuania

Milda Šličkutė-Šeštokienė
Population statistics division
Statistics Lithuania
Content

• Sources and methods
• Legislation of Census
• Communication, publicity and dissemination
• Key results 2021
• Quality issues
Sources and methods
Lithuanian Census

- 1528, 1790
- 1897
- 1923
- 1942
Changing profile of census (1)

• 2001 – Traditional approach

• 2011 – Combined approach – administrative sources were extensively used:
  • Residents were able to fill-in electronic questionnaire (34%)
  • Some data were derived from administrative sources – for prefilling questionnaires and for editing purposes
Changing profile of census (2)

• 2021 – Completely register-based, no field-work:
  • Pilot register-based censuses:
    • 2019 – testing the system;
    • 2020 – testing the algorithms and data

• After 2024 indicators will be produced annually
History of administrative sources in SL

• Wider usage of administrative sources is one of the top priorities of Statistics Lithuania.

• 42% of results published by Statistics Lithuania are based on administrative sources. In Social Statistics - 52,3%

• In 2004, first administrative (social insurance) data were used for the production of official statistics at the estimation stage
Administrative sources in SL

- 182 Administrative data sets at the micro level
- 155 Administrative data sets at the aggregated level

Administrative sources for census 2021

- 34 administrative sources analyzed
- 19 administrative sources were chosen for census 2021
## Administrative data for Census 2021

<table>
<thead>
<tr>
<th>Name of the administrative data source</th>
<th>Holder of the administrative data</th>
</tr>
</thead>
<tbody>
<tr>
<td>Population Register</td>
<td>State Enterprise “Centre of registers”</td>
</tr>
<tr>
<td>Real Property Register</td>
<td></td>
</tr>
<tr>
<td>Address Register</td>
<td></td>
</tr>
<tr>
<td>Statistical Business Register</td>
<td>Statistics Lithuania</td>
</tr>
<tr>
<td>Social Insurance Fund Board database</td>
<td>Social Insurance Fund Board</td>
</tr>
<tr>
<td>National Health Insurance Fund data</td>
<td>National Health Insurance Fund</td>
</tr>
<tr>
<td>Labour Exchange data</td>
<td>Labour exchange Office</td>
</tr>
<tr>
<td>Tax Payers Register</td>
<td>State Tax Inspectorate</td>
</tr>
<tr>
<td>Information system on the receipt of applications (Farmers Register)</td>
<td>State enterprise “Agricultural Information &amp; Rural Development Centre”</td>
</tr>
<tr>
<td>Register of farm animals</td>
<td></td>
</tr>
<tr>
<td>Students’ Register</td>
<td>Ministry of Education &amp; Science</td>
</tr>
<tr>
<td>Pupils’ Register</td>
<td></td>
</tr>
<tr>
<td>Pedagogues’ Register</td>
<td></td>
</tr>
<tr>
<td>Suspects, Accused &amp; Convicted Persons Register</td>
<td>Information technology &amp; communication department</td>
</tr>
<tr>
<td>Social Family Support Information System</td>
<td>Ministry of Social Security &amp; Labour</td>
</tr>
<tr>
<td>Civil Servants Register</td>
<td></td>
</tr>
<tr>
<td>Internal Affairs Officers Register</td>
<td></td>
</tr>
<tr>
<td>Disability and Working Capacity Assessment Service Information system</td>
<td></td>
</tr>
<tr>
<td>Shelters for homeless</td>
<td></td>
</tr>
</tbody>
</table>
Number of usual residents compared to persons who declared place of residence in LT (total difference – 8.5%)

<table>
<thead>
<tr>
<th>Age Group</th>
<th>Usual residents published by SL</th>
<th>Persons, who declared residence in LT (PR)</th>
</tr>
</thead>
<tbody>
<tr>
<td>0-9</td>
<td>2.7%</td>
<td>5.9%</td>
</tr>
<tr>
<td>19-spal</td>
<td>5.0%</td>
<td>5.0%</td>
</tr>
<tr>
<td>20-29</td>
<td>18.7%</td>
<td>18.7%</td>
</tr>
<tr>
<td>30-39</td>
<td>12.2%</td>
<td>12.2%</td>
</tr>
<tr>
<td>40-49</td>
<td>8.9%</td>
<td>8.9%</td>
</tr>
<tr>
<td>50-59</td>
<td>8.6%</td>
<td>8.6%</td>
</tr>
<tr>
<td>60-69</td>
<td>6.6%</td>
<td>6.6%</td>
</tr>
<tr>
<td>70-79</td>
<td>2.1%</td>
<td>2.1%</td>
</tr>
<tr>
<td>&gt;= 80</td>
<td>2.1%</td>
<td>2.1%</td>
</tr>
</tbody>
</table>
Defining usual residents from registers

No modeling are used for defining usual residents population – no reliable data are available for building the model

A person is counted as usual resident if he/she
- declared the place of residence in Lithuania and
- shows signs of life in two different registers
- a number of exceptions are applied
  - Homeless people are considered as usual residents
  - Lithuanian citizenship treated differently from people without Lithuanian citizenship, also occupation is taken into account
  - Family situation; country of birth, employment status is taken into account
Defining place of usual residence from registers

- Equal to declared place of residence, if housing unit is found at the declared address
- Spouses and their children are populated into one dwelling
- The tenant is assigned the address of the rental housing unit
- A student who has not been able to assign housing is assigned the address of a educational institution
- A homeless person is assigned to the address of the shelter for homeless people
- Convicted persons gets the address of the prison
- the person is assigned the property owned by him, the housing of his spouse, the housing of parents or children depending on age or marital status
- randomly assigned empty housing unit in the area where the person's declared place of residence is located
Technical implementation

Census 2021
• data warehouse, Oracle Data Integrator (ODI) – outsourced

Census variables after 2024
• Implementation of Statistical Register, Palantir – developed by staff of Statistics Lithuania
Legislation of Census
Legal basis

• EU population and housing censuses regulations - KEY legislation which would be enough
  • Key regulation:
    • EUROPEAN PARLIAMENT AND COUNCIL REGULATION (EC) 763/2008 of 9 July 2008
  • 3 implementing regulations
    • Regulation covering topics and their breakdowns
    • Regulation establishing the table programme
    • Regulation covering quality and metadata
  • GRID regulation – since round 2020
    • COMMISSION IMPLEMENTING REGULATION (EU) 2018/1799 of 21 November 2018

• The number of national measures introduced
  • In order to facilitate procedures
Lithuanian Law on Statistics

Article 11. General censuses

1. Population, housing, agricultural and other general censuses may be conducted in the Republic of Lithuania

2. A general census and its purpose shall be determined by a legal act of the European Union, by a law or by a resolution of the Government of the Republic of Lithuania

3. A general census shall be organized and conducted by Statistics Lithuania and/or other bodies managing official statistics.

4. Statistics Lithuania or other bodies managing official statistics may involve interviewers to carry out the works related to a general census

UNECE WORKSHOP ON POPULATION AND HOUSING CENSUSES

19-20 September, 2022
Resolution of the Government of Lithuania

Prepared before census

• On Population and Housing Census 2021 of the republic of Lithuania, which sets:
  • Reference day
  • List of administrative data sources – with obligation for data holders to provide data to NSI
  • Set up a list of topics and indicators
Law on reduction of administrative burden

• Ensures the monitoring of administrative burdens and reduction of unjustified administrative burdens

• Prohibits to collect data which is already collected by other institution
Communication, publicity and dissemination
Publication of first results

Census date: 2021-01-01
Publication date: 2021-12-21 (provisional)

Press conference held at premises of Statistics Lithuania
Storymaps

• A story map is a web map that has been thoughtfully created, given context, and provided with supporting information so it becomes a stand-alone resource

• It integrates maps, legends, text, photos, and video and provides functionality, such as swipe, pop-ups, and time sliders, that helps users explore the content

• An important tool for presentation of the results interactively and interesting
  • Census results (only in LT): https://storymaps.arcgis.com/stories/d7ac6efa3e99480992e956f440a1b3ec
The communication channels and approaches, how to reach everybody

- Press conference (December, 2021)
- Press releases
- Interview for the media
- Information in website
- Posts/stories in social media
- Infographics workshop with students from Vilnius College of Technologies and Design
- Visual identity (logo, brandbook)
- Electronic Publication (December, 2022)
Infographics (workshop with students from Vilnius College of Technologies and Design)
GRID data

https://open-data-sets-ls-osp-sdg.hub.arcgis.com/search?categories=gyventoj%C5%B3%20ir%20b%C5%BDst%C5%B3%20sura%C5%A1ym%C5%B5%20d\u0161uomenys&collection=Dataset&tags=sura%C5%A1ymas2021
GRID level of detail

- 10 km²
- 5 km²
- 2.5 km²
- 1 km²
- 500 m²
- 250 m²
- 100 m²
Results
Number of usual residents

There were 2,810,761 usual residents in Lithuania on 1 January 2021, in thousands.
Population by age and sex, census 2021
Population with higher education in municipalities

Number of population with higher education per 1000 residents (10 years old and older)

1 tūkst. 10 metų ir vyresnių gyventojų teko aukštąjį išsilavinimą turinčių asmenų

- ≤ 160
- 161–190
- 191–300
- > 300
Quality issues
Quality issues

• Input data quality
  • Quality guidelines for administrative data
  • prepared and approved in 2021, still needs improvements

• Output data quality
  • Quality indicators for statistics produces on the basis of administrative data sources
  • under development

• Post-enumeration survey?
Coherence with other statistics

Improvements foreseen:

• **Statistical register of population** is under development
• Census **population = population** of other surveys (same algorithm used)
• All samples are drawn from the same sampling frame (which is equal to census population)
• A variable for different survey comes from the same source using the same algorithm for estimation
Concluding remarks
Census Budget 2011 and 2021, in mln. euros

- 2011: 8.6 mln. euros
- 2021: 1.9 mln. euros
### Structure of Census budget (2011 and 2021)

<table>
<thead>
<tr>
<th>Category</th>
<th>2011</th>
<th>2021</th>
</tr>
</thead>
<tbody>
<tr>
<td>Salaries of temporary staff, ...</td>
<td></td>
<td>65.3</td>
</tr>
<tr>
<td>Data processing</td>
<td>10.8</td>
<td>44.4</td>
</tr>
<tr>
<td>Management</td>
<td>8.1</td>
<td>39.2</td>
</tr>
<tr>
<td>E-census</td>
<td>4.7</td>
<td></td>
</tr>
<tr>
<td>Pilot Studies/Census</td>
<td>6.2</td>
<td>2.5</td>
</tr>
<tr>
<td>Public awareness campaign</td>
<td>2.5</td>
<td>2.5</td>
</tr>
<tr>
<td>Printing census sheets and...</td>
<td>2.3</td>
<td>1.7</td>
</tr>
<tr>
<td>Maps</td>
<td>1.7</td>
<td>1.7</td>
</tr>
<tr>
<td>Dissemination of results</td>
<td>3.1</td>
<td>0.6</td>
</tr>
<tr>
<td>Other</td>
<td>0.6</td>
<td>7.1</td>
</tr>
</tbody>
</table>

(U.N. Educational, Scientific and Cultural Organization (UNECE) Workshop on Population and Housing Censuses, 19-20 September, 2022)
More information

https://osp.stat.gov.lt/gyventoju-ir-bustu-surasymai1

<table>
<thead>
<tr>
<th>Database news</th>
</tr>
</thead>
<tbody>
<tr>
<td>News releases for this week</td>
</tr>
</tbody>
</table>

Official Statistics Portal

<table>
<thead>
<tr>
<th>Census 2021</th>
</tr>
</thead>
<tbody>
<tr>
<td>Census 2011</td>
</tr>
<tr>
<td>Census 2001</td>
</tr>
</tbody>
</table>