Effects of the Covid-19 Pandemic on Census Measures and Comparability Over Time

Meryem Demirci

UN Statistics Division
Content

• Main roles of censuses in statistical system
• Census measures that are likely to be affected by the pandemic
• Modifications in census questions to produce data on the impact of the pandemic
• Factors that may affect comparability of census results over time
• Communication with users about the impact of the pandemic
• Conclusions
Main roles

The objectives of a census might be specific to individual countries depending on national circumstances, but every census should have a capacity to:

• produce population count at small geographic areas
• provide information about small population groups
• provide sufficient information for
  • analyzing changes in a society over time and
  • examining relevant disparities between population groups
Census measures likely to be affected by the pandemic crisis

Potential effects
- Sharp decline in International migration
- High unemployment rate
- Higher mortality rate for older people
- Mobility from institutional population to household population
  - Distribution of population by small geographic areas might be affected
Modifications in census questions

• Collecting **data for recent years** to examine the differences before and after the arrival of the pandemic
  • Components of population change - births, deaths, international and internal migration
• **Modifications in response categories** for relevant census topics, such as
  • Labour force status, place of work, working time
  • School attendance, place of study
Producing data for recent births

- **Question:**
  - “Date of birth of last child born alive”
  - For estimating fertility indicators for last 3 years
  - Reporting errors – omission, collecting data from proxy respondents

*Ref: UNSD- Principles and Recommendations for PHC, Rev 3*
Producing data for recent deaths

- **Question:**
  - Household deaths in the last 3 years
  - Including information on age of deaths and month/year of death
  - Comparison of age distribution of deaths before and after pandemic

Reporting errors: omissions, errors on ages at death or on dates of death, dissolution of some households after the death of one member

*Ref- UNSD- Principles and Recommendations for PHC, Rev 3*
Producing data for recent international migration

Questions:
- ever-lived abroad
- date (month/year) of arrival to the country
  - to analyze the changes in the trend after the arrival of the pandemic

Types of questions asked by countries for measuring international migration, 2010 round (%)

Ref- UNSD- Principles and Recommendations for PHC, Rev 3
Producing data for recent internal migration

Questions:
- duration of residence
- previous place of residence

To provide information for the difference before and after the pandemic

Type of information collected for internal migration, 2010 round, (%)

Ref- UNSD- Principles and Recommendations for PHC, Rev 3
Modifications in response categories

• **Labour force status (P&R, Rev 3)- a short reference period (one week)**

• **Unemployed persons** - people who were not in employment, carried out activities to seek employment during a reference period and available to take up employment
  
  • **New category - Unemployed on temporary layoff** – a person has either been given a date to return to work or expected to be recalled to their job within 3 or 6 months

• **Place of work** - main categories include: a. work at home, b. no fixed place of work and c. with a fixed place of work outside the home

• **New category** - Telecommuting because of the pandemic
Factors that might affect the comparability of census results over time

- Significant change in the census design
- Extension of enumeration period – usually longer than six months
  - Mode-effects on responses
  - Higher non-response rates for some areas and/or population groups compared to non-response rates of previous censuses
- Transfer from institutional population to household population during the pandemic
- Temporary changes in census measures due to the pandemic protocols
<table>
<thead>
<tr>
<th><strong>Communication with users about the impact of the pandemic on the census design and response rates</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>• Clear description of production process, modifications in the census design due to the pandemic</strong></td>
</tr>
<tr>
<td><strong>• Changes in census questions, response categories and definitions</strong></td>
</tr>
<tr>
<td><strong>• Adjustments in census data, such as</strong></td>
</tr>
<tr>
<td><strong>• Imputation for nonresponses</strong></td>
</tr>
<tr>
<td><strong>• Relocating students/adjustments for institutional population</strong></td>
</tr>
<tr>
<td><strong>• Data quality measures, such as non-response rate, item non-response rate and imputation rate</strong></td>
</tr>
<tr>
<td><strong>• Changes in census measures due to the pandemic protocols</strong></td>
</tr>
<tr>
<td><strong>• What census topics</strong></td>
</tr>
<tr>
<td><strong>• How to interpret</strong></td>
</tr>
<tr>
<td><strong>• Cautions about data comparability over time</strong></td>
</tr>
</tbody>
</table>
Conclusions

- Population and housing census might be an opportunity to analyze changes in population components before and after the arrival of the pandemic

- Analysis of the coherence of 2020 census results with previous census results and other relevant data sources would help users better understand the effects of the pandemic on census results

- Providing sufficient metadata becomes more important than before considering the significant change in the census design and concerns for data quality and potential effects of the pandemic on census statistics