Los censos de población y vivienda en contextos de pandemia: panorama regional y desafíos urgentes

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SIDE EVENT
SUMMARY

1. IMPORTANCE – OPERATION’S DESCRIPTION, RELEVANCE OF CENSUS
2. CHALLENGES – INNOVATION
3. CHALLENGES – DATA COLLECTION – CAPI, CASI (CAWI), CATI
4. CHALLENGES – COVID-19 - PPE
5. CHALLENGES – COVERAGE, IMPUTATION
6. Tests
General Features 2022 Demographic Census

Population Brazil
1872 a 2021

Enumerated Population 213 millions - Enumeration period 3 months –
Start June 1st, 2022

Number of Households Visited
> 80 millions

Estimated Cost 2022

R$ 2,3 billions (US$ 400 Mi)

Enumeration Work Force
180 Thousand Enumerators
18 Thousand Supervisors 10 Thousand Agents

More than 210 Thousand Individuals involved

Field Operation Structure:
27 State Unities, 583 IBGE Collection Branches
7600 Municipal Collection Posts
5570 Municipalities
680 Regional Coordinations.
Granular information of the Brazilian Population at municipal level, allowing the implementation of public policies.

Give basis for the master sample that allows the construction of all household samples at IBGE, and also for several household samples conducted in Brazil during the decade.

Basic information for intercensal population projections at National and State levels, as well population estimates at municipal level.

It is the basis for the calculation of the amount or resources transferred to the municipalities and states (FPM) and also to determine the size of political representation at the three Federation levels.

Importance and Uses of the Demographic Census
Tool for resources allocation
Knowledge of specific segments of the Brazilian Population
Display Family living conditions and household access to piped water and sewerage system.
Demographic Census - 2022

Themes Covered

**BASIC (Short)**
(All Households – 26 items)

- Roster of Individuals in the HOUSEHOLD
- HOUSEHOLD Characteristics
- Individuals Characteristics in the Household
  - Race/Color Identification
  - Quilombolas e Indígenas
  - Civil Registration
  - Literacy
  - Income of Household’s Head
- MORTALITY

**LONG**
(SAMPLE – 77 Items)

- Individuals Characteristics in the Household
  - Nuptiality
  - Fertility
  - Religion
  - Individuals with Disability
  - Internal and International Migration
  - Education
  - Work and Earnings
  - Commuting to Work and to Study
  - Autism

Instituto Brasileiro de Geografia e Estatística  IBGE
Types of Technological Innovations in the Censuses

The last Editions of the Censuses brought innovations in the data collection, entry, in all editions data collection took place at the household level enumerating all members.

- **1980** – Data Entry Centralized in Rio de Janeiro.
- **1991** – Data Entry taking place at the State Level
- **1996** – Optical Read of the Questionnaires at the State Level
- **2000** – Scanner with Carachter Recognition (OCR e ICR) decentralized in 5 regional centers
- **2007** – Questionnaire in portable device with connection with Data Center in Rio de Janeiro
- **2010** – Questionnaire in portable device and smartphone with transfers of data from census posts (collection branches)

OCR - Optical Character Recognition
ICR - Intelligent Character Recognition
Expected Innovations in 2022

• If previous innovations derived from censuses were associated with data collection and data entry, we expect that 2022 will be marked by technologies monitoring the census operation in real time. A situation room will monitor the operation in real time.

• The following innovations should be mentioned:
  • GradePop – Households by Census Tract
  • Demographic Dynamics in Dashboards by Census Tract
  • Process Mining of the Census Operation – Analysis of Metadata
GradePop

POPULATION MODELLING FOR CENSUS SUPPORT
Global top-down gridded population estimates are available from www.worldpop.org.

Bespoke country-specific bottom-up population estimates are available from wopr.worldpop.org.

See Wardrop et al. 2018 for an overview of these methods.

GradePop

1. **Pre-Enumeration Phase** – It gives a view on the number of households to be expected in the census enumeration phase. It combines with the virtual construction of housing address lists by Census Contract. Both compensate the lack of resources for pre-enumeration’s canvassing of the Census Tracts.

2. **Enumeration Phase** – It helps the evaluation of real time coverage of the census tracts during enumeration or data collection.

3. **Post-Enumeration Phase** – It helps to access data coverage and to input missing households. It will be conducted a post-enumeration survey (PES), but this tool and demographic analysis will contribute to evaluation of census’ coverage.
Demographic Dashboards

- IBGE applied demographic analysis in previous Census operation to access its quality.
- This analysis was done with a time lag in order to compute partial results from the field.
- Dimensions such as age structure, sex ratio, digital preference for certain ages (Myers Index), median age, education, etc. were computed in order to evaluate the quality of data collection.
- Now, dashboards replace this type of analysis in almost real time and high level of granularity, up to the census tract level.
Demographic Dashboards
Demographic Dashboards
Process Mining of Data Collection

• A tool to evaluate data collection in real time, by enumerator, including the number of visits to the household, the time spent in each visit, completion of the questionnaire, reasons for not completing the questionnaire, supervision activities, etc.
Process Mining of Data Collection

- Time of execution
- Frequencies
- Durations
- Diagnostics
- Predictions
The Challenge of Data Collection
Mixed Model of Data Collection

**CAPI** = Computer-Assisted Personal Interviewing

**CASI** = Computer-Assisted Self Interviewing

**CATI** = Computer-Assisted Telephone Interviewing
Mixed Model of Data Collection

1. Enumerator starts face to face contact:

If successful contact with resident:

1. Face to Face Interview (CAPI)

2. Make Appointment for telephone Interview (CATI)

2. Suggest Internet self-interview (CASI)
Data Collection Flow in Mixed Model

1. Starting point is always face to face:

In case of not reaching a resident in the household:

• Leave a note with contact number; and
• Try to dial when there is a telephone number in the list for the specific household visited
Data Collection Flow in Mixed Model

2. In case of contact between enumerator and household’s resident by telephone:

If there is success:

1. Interview by telephone (CATI)

2. Make an appointment for a face to face interview (CAPI) or for a telephone interview (CATI)

3. Suggest self-interview via internet (CASI)
<table>
<thead>
<tr>
<th>Step</th>
<th>Description</th>
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| 1    | The enumerator starts the face-to-face stage:  
|      | - In case of successful contact with the resident:  
|      |   ✓ 1<sup>st</sup> option - face-to-face or scheduling interview (CAPI) or telephone interview (CATI)  
|      |   ✓ 2<sup>nd</sup> option - offer self-completion via the Internet (CASI)  
|      |   ✓ If the contact to the resident is not possible:  
|      |     ✓ Leave a message letter with a contact number and  
|      |     ✓ Try to contact by phone if there are phone numbers available (only after the unit is worked)  
| 2    | If the enumerator is contacted or is able to contact the resident by telephone:  
|      | - In case of successful contact:  
|      |   ✓ 1<sup>st</sup> option - telephone interview (CATI)  
|      |   ✓ 2<sup>nd</sup> option - schedule a face-to-face (CAPI) or telephone interview (CATI)  
|      |   ✓ 3<sup>rd</sup> option - offer self-completion via the Internet (CASI)  

**CATI** = Computer-Assisted Telephone Interviewing  
**CAPI** = Computer-Assisted Personal Interviewing  
**CASI** = Computer-Assisted Self-Interviewing  

Reference date = night from May 31 to June 1, 2022
Data Collection
Remote Call Center
(Centro de Apoio ao Censo - CAC)

- Conceptual and Operational Assistance filling self-interview via web
- Convincing Role Insistência with those individuals contacted that opted for self-interview and never filled the questionnaire
- Completing the lacking information in partially filled questionnaires in the web
- Confirming the information about the enumerator’s credentials
Safety and Health

- Health Protocols
- Personal Protection Equipments (PPE)
- National and International Benchmark
Post-Enumeration Survey (PES)

- Coverage was an issue in the 2010 Demographic Censuses
- Coverage problem in high income neighborhoods due to difficulties of access
- Coverage problem in census tracts located in “slums” or “sub-normal sectors”, mainly due to violence
- Coverage problem in rural census tracts
- Post-Enumeration surveys conducted independently of the data collection team and immediately after enumeration give basis for the estimation of coverage rates and inputation
- Demographic projections and GradePop provide alternative measures of coverage
Tests – Demographic Census 2022

- Experimental Census in Poços de Caldas – Minas Gerais – November 2019
- Virtual Equipment Tests – November 2020
- Paquetá Island Test – September 2021
- Tests in all 27 States – November 2021
Experimental Census
Poços de Caldas
Population: 168 million

2019
Experimental Census 2019

Poços de Caldas-MG

- Enumerators: 180
- Supervisors: 25
- ACM: 4
- Sampling: 10%

16 other municipalities with specific characteristics
Test Paquetá-RJ – Population Counted in Test 3612
Paquetá Island – characteristics

Boats
Pré-teste de Paquetá-RJ
Ilha de Paquetá – Banner na entrada da Ilha
Paquetá Island – City of Rio de Janeiro
Partnership – Municipal Health Department
TESTS IN 27 STATES - PARANÁ
TESTS IN 27 STATES – DISTRITO FEDERAL
Samambaia
TESTS IN 27 STATES – MINAS GERAIS
Bairro Minas Brasil in Belo Horizonte
TESTS IN 27 STATES – BAHIA
Bairro Amaralina in Salvador
Road Show in Four Northeast States - Tests and Pre-Game Speech for the Census
Como me sinto depois dessa maratona de testes?
Thank You!!!