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2010 round of censuses – innovations and lessons learned

Scope and optimization of Population and Housing Census: the case of Mexico

Note by the National Institute of Statistics, Geography and Informatics of Mexico

Summary

The paper describes the experience of the National Institute of Statistics of Mexico introducing new methodology and practices aimed at ensuring quality and coverage of the information collected in the 2010 Population and Housing Census.

The paper further explains the methodological and operational decisions made in order to obtain greater geographic coverage and a high level of quality of the information collected in the 2010 census. Several practical solutions are also introduced as a way to improve the service of respondents and, thus, response rates.

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I. Methodological and operational framework of 2010 Population and Housing Census

1.   According to Article 26, paragraph B of the Constitution of the Mexican United States, and empowered by the Law of the National and Statistical Information System, the National Institute of Statistics, Geography and Informatics of Mexico (INEGI) conducted a Population and Housing Census from May 31 to June 25.

2.   The aim of the Population and Housing Census is to obtain reliable and timely social and demographic data to serve all sectors of society. For national coverage, the census is the single statistical instrument used to obtain critical data about the main characteristics of the population and their dwellings. This information constitutes the basic input for the generation of public policies at three levels of government, with particular attention to social backwardness and poverty.

3.   In order to obtain greater geographic coverage and a high level of quality of the information collected, the 2010 census exercise was carried out using the methodological and operational bases described in the next sections.

A.   Methodological bases

4.   *Observation units*: information was gathered on the total usual residents in the country and individual and collective dwellings.

5.   *Type of survey*: de jure. Population was counted in the place of usual residence, i.e. where people sleep, eat or prepare their food and protect themselves from the environment (dwelling or abode). Homeless people and Mexicans serving in the Foreign Service were also considered.

6.   *Geographical coverage*: whole country.

7.   *Survey period*: from May 31 to June 25, 2010.

8.   *Reference time information*: zero hours of June 12, 2010.

9.   *Collection method*: face-to-face interview with a proxy respondent who is a usual resident at the dwelling.

10.   *Proxy respondent*: person who can be interviewed because he/she knows the information of all residents of the dwelling; the head of the residents of the dwelling, his/her spouse or a person 15 years old and over.

11.   *Types of questionnaires*: a short-form (29 questions) and a long-form (75 questions).

B.   Operational bases

12.   *Mapping update:*

        (a)   *Cartographers canvass:* in 2008 and 2009 throughout the country mapping was updated by satellite images and field canvass. During this process, a total of 64,758 blocks and 9,629 new localities were identified, furthermore 4,522 localities were dropped;

(b)   *Field canvass:* more than 140,000 people canvassed 2.4 million of blocks or rural localities in the country to identify the boundaries of his/her responsibility area and ensure mapping updates integration not detected by the mapping team in 2009;

(c)   *Mapping validation by municipal authorities:* before starting operations, the census structure provided 2,456 municipalities authorities included in the national territory with the map of their area in order to make corresponding observations and to validate for existing localities.

13.   *Integration of the Census support committees:* field operatives anticipated and operated the establishment of local committees to support the population census in order to inform each municipal authority about census activities, obtain the necessary support, allow authorities to make monitoring canvasses and report their results.

14.   *Process of allocating responsibility areas:* a total of 165,424 responsibility areas assigned to interviewers, supervisors, person responsible for that area, municipal coordinators and verifiers, among others, were generated. These responsibility areas covered 2.4 million blocks or localities located inside the 2,456 municipalities that make up the country.

15.   *Training:* to ensure the quality of information, more than 200,000 people were trained prior to the survey during periods longer than those considered in previous census exercises. The training for a short-form interviewer lasted a total of 7 days instead of 5. The training for a long-form interviewer lasted a total of 12 days instead of 10.

16.   *Field operations:* differentiated operational strategies were established to access all places where usual residents of the country are located. In this way, around 140,000 people, hired by the census, conducted the following activities to gather information:

(a)   Identification of and visiting all dwellings in the interviewer's area of responsibility to conduct a face-to-face interview with a proxy respondent;

(b)   Special teams to sleeping areas and difficult access areas;

(c)   Use of operational risk map to arrange census-taking;

(d)   Process for up to four visits, if required, to access to proxy respondent and organise the interview;

(e)   Implementation of the census promoter for high economic strata areas with restricted access;

(f)   For residents who wanted to fill their own information, a self-enumeration process in restricted access areas was implemented;

(g)   In cases of a delay in replying, a census-forms fill-in service by the INEGI Call Center or via Internet was offered.

17.   *Verification:* with an independent structure which consisted of 18,000 people, we performed a verification operative at national level. This structure was commissioned to conduct a comprehensive review of over 2 million dwellings listed as outstanding, uninhabited or in temporary use.

C. Innovations

18.   In this census exercise major changes took place for ensuring a larger pool of information, higher quality in collection, and of course, a greater geographical coverage:

(a)   Collection of urban infrastructure characteristics which prevail around the blocks in localities with 5,000 or more inhabitants;

(b)   Collection of existing infrastructure and socio-economic characteristics in localities with less than 5,000 inhabitants;

(c)   New variables: indigenous language understanding, form of property acquisition, equipment, cellular and Internet availability in the dwelling;

(d)   Ask for religion openly and for whole population;

(e)   Ask population of 3 years and over by school attendance and if they speak an indigenous language;

(f)   The question design of the ethnic self-identification changes;

(g)   The approach to identify people with disabilities changes: 2000 *severe deficiencies* that refer to the loss of an organ or body structure are collected; 2010 the ICF conceptual framework which provides a comprehensive approach to include *deficiencies* in body structure and functions, limitations in performing activities of daily living and participation restrictions in their environment is adopted;

(h)   There is a shift to the Census Household concept. Unit consisting of one or more persons related or not by relationship who usually live in the same dwelling.

(i)   From relationship to the head and residence of father and/or mother and spouse, identify family nuclei in dwellings.

(j)   Computing systems use in the operative for: recruiting and selecting staff, covering defections, shape work areas, control and follow-up to coverage and mapping updates;

(k)   Post-enumeration Survey in order to obtain an estimation of coverage errors;

(l)   Census a sample of 2.9 million dwellings with a long-form;

(m)   Census the 125 municipalities with the lowest Human Development Index with a long form;

(n)   903 questionnaires capture centers in the country;

(o)   Computer systems for implementing, monitoring, and capture control, data processing and release of figures;

(p)   Production of tables that allows a dynamic query and provides access to census information for all users.

19.   Unprecedented in the history of Mexican Census, the combination of the methodological with operations bases made it possible to obtain results at national level:

(a)   Identification and visit to 2.4 million of blocks or localities without blocks; the lowest geographical non-coverage rate was obtained, compared with that obtained during the last two census exercises, because 1,057 blocks or localities were not surveyed, representing 0.04% of the total of identified areas in 2010;

(b)   At nationwide, a minimum percentage of outstanding dwellings was obtained, compared against the previous two census exercises, equivalent to 1.6% of total occupied dwellings, while in 2009 the same percentage was 1.9 and for 2005 it was 2.6 percent;

(c)   Enumeration and characterization of 112.3 million of usual resident in Mexico, higher than the estimate generated by CONAPO for 2010 is of 108.4 million. Population projections are generated and/or updated base on results of population censuses and other external information sources. A base population is established and models are built with assumptions about the fertility, mortality and migration behaviour, they are

essential elements to develop projections for the next years; but it is important to say that as a result of the population count obtained in each census, it is necessary to review and update the population projections. It should be noted that demographic change components can alter the future trends and projected data, so that projections cannot be considered as instruments with no margin of error;

(d)   In conclusion, we identified and typed 35,625,147 dwellings:

(i)   28,607,568 inhabited;

(ii)   7,423 collective;

(iii)   7,010,156 uninhabited or temporary use.

20.   According to the above, it may be noted that 2010 Population and Housing Census in its processes and stages is constituted as a statistical exercise with greater controls aimed at ensuring quality and coverage of the information collected.

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