



Post enumeration survey in census: lessons for Pakistan

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Census results are never perfect therefore, in both developed and developing countries, usually overall undercounting of people does happen. However, sometimes where people are quite mobile, they may be counted twice. Usually for various reasons census misses people, such as those living in cities or those in younger ages or of certain social groups (such as ethnic or religious minorities). Therefore, to check the validity of a census result, the United Nations recommends a post-census enumeration survey (PES) immediately following the census in randomly selected enumeration blocks. Later, its results are cross-checked with the census results obtained in the same enumeration blocks. As the results of censuses are now widely used for policy and planning purposes, PES is a good tool to examine the coverage, quality and limitations of census data and to understand the types and extent of inaccuracies that may have occurred. Since in many developing countries, alternative sources of population data are not available, PES is the major tool for evaluating the census results. The survey results when compared with census results, allow estimates to be made of coverage and content errors. Coverage errors refer to people missed in the census or erroneously included, whereas content errors evaluate response quality of selected questions. The PES allows census organizations to uncover deficiencies in the methodology of the census and make adjustments for future censuses.

The PES results can also be used to adjust census results. Broadly, PES serves several purposes, such as; it assesses whether 100 percent enumeration was in fact achieved; it provides statistical estimates of any under-enumeration and; it also helps in quality checks of the census, including the quality of responses to the questions, providing statistical estimates of the validity of responses, gross and net error rates due to questions and/or response codes being misunderstood. PES repeats the census exercise in randomly selected areas, but with a higher input of resources and more experienced survey interviewers than are used in the census, so as to measure the quality of the larger data collection.

For a country like Pakistan, where conducting censuses has been infrequent (only three censuses have been conducted since 1981 whereas per the 1973 constitution requirements, by now five decennial censuses should have been conducted). Further, in the absence of the vital registration system and regular population and demographic surveys, there is limited use of other methods of census evaluation. In Pakistan's first post-independence population and housing census conducted in 1951, several discrepancies were identified, therefore, following the 1961 census, a PES was conducted, which indicated about 6.5 percent under-enumeration in the country. Subsequently, the results were adjusted to account for under-enumeration across the board. After the 1972 census, a PES was not conducted,

¹United Nations. 2010. Post Enumeration Surveys: Operational guidelines. New York: Department of Economic and Social Affairs.

²Jillani. M. S. 2003. "Census Taking Over the Years—A Historical Perspective." In Kamal, A.R. Mohammad Irfan, and Naushin Mahmood (eds.). Population of Pakistan: An Analysis of 1998 1998 Population and Housing Census. Islamabad: Pakistan Institute of Development Economics.

³Kamal, A.R. Irfan, Irfan, Mohammad and Mahmood, Naushin (eds.). 2003. Population of Pakistan: An Analysis of 1998 Population and Housing Census. Islamabad: Pakistan Institute of Development Economics.

however following the census conducted in 1981, while a PES was conducted, its results were not made public. The 1998 census was conducted with the assistance of armed forces, whereby each enumerator was accompanied with a soldier, with the main purpose of checking any exaggerated figures. This likely resulted in no over reporting of people, however, due to non-responses, difficulties in reaching all the households and non-reporting of some persons, any underreporting of people as well as the quality of reported population statistics could not be established in the absence of PES. To review the 1998 census results, in 2000 a steering committee of senior demographers was constituted by the Government of Pakistan with support from the United Nations Population Fund (UNFPA). The experts analyzed data of the 1998 census and papers were published in a comprehensive edited volume. It was reported that the 1998 census suffered from various inconsistencies including possible undercount of the population.

In 2016, the Supreme Court took a suo moto notice regarding delay in carrying out a census in the country and directed the Government to conduct the census as soon as possible. Accordingly, after a delay of 19 years, the sixth census was conducted during March-May, 2017, in two phases. The census enumeration was completed in about half of the census blocks in each province during March 15 and April 15 and in the other half, during April 25 and May 27. This was the longest period to complete the census exercise in Pakistan, as in the first two censuses, enumeration was completed in three weeks, while in the third, fourth and fifth census, enumeration was completed in two weeks.

In countries where the majority of people are not educated, the way questions are framed and asked in the census could also result in content errors. In the 2017 census of Pakistan, the CNIC number of the head or any member of the household was to be recorded for verification purposes only. However, according to the UNFPA Observer Mission Report the CNIC of each household member was checked and

verified by the armed forces personnel accompanying the census enumerator, who sent a message to the issuing authority (NADRA) about the validity of the card. The UNFPA Observer Mission Report also mentions that mostly information available on the CNIC was relied upon by the enumerators. It may be noted, that once a person migrates internally, changing the address on CNIC is not mandatory, therefore, it is likely that due to reliance on information available on CNIC, perhaps those household members having a different address on CNIC were not included due to de jure methodology used, assuming that they will be counted at their permanent place of residence. Besides, the requirement for all adult household members to provide CNIC number might have forced those without a CNIC - particularly illegal aliens- to opt out from the census enumeration. Perhaps for that reason, in the 2017 census, urban population was grossly under-reported.

Following the census, the Secretary of Statistics Division, being Principal Accounting Officer, constituted a committee to evaluate all aspects of the census 2017 and to highlight weaknesses for possible remedies for the release of the detailed results and for compiling good practices/lessons learnt for forthcoming censuses. The committee compiled a comprehensive "Report on Technical Evaluation of 6th Population & Housing Census-2017", which points out at several administrative and technical loopholes in conducting the census. For example, the Report notes that the expert committee constituted by the Governing Council of PBS to advise on census operations had shown concern that "the census is not being planned the way it was envisaged" and "none of its recommendations were being followed in true letter and spirit nor any of the other recommendations made by the national and international agencies to PBS were accepted... the concerned authorities of PBS had adopted whatever, they liked and rejected that was not according to their sweet will".

⁴Chaudhry, Muhammad Aslam, 2003. "Methodological Issues in Data Collection". In Kamal, A.R. Mohammad Irfan, and Naushin Mahmood (eds.) Population of Pakistan: An Analysis of 1998 Population and Housing Census. Islamabad: Pakistan Institute of Development Economics.

⁵UNFPA. 2017. Pakistan Population and Housing Census 2017: Monitoring & Observation Mission. Islamabad: National report

⁶Statistics Division. 2018 Technical Evaluation of 6th Population & Housing Census-2017. Ministry of Statistics. Government of Pakistan Islamabad: PBS HQ Printing Press.

⁷Zaman, Fahim, 2017. "Census 2017: How can flawed results have any credibility". Dawn. September, 21.

⁸Karim, Mehtab S. 2021. "The Census Controversy" Narratives. February, ¹⁸

The Report also points out that the census ignored basic census standards such as breaches of confidentiality (by obtaining CNIC which was verified through SMS to NADRA) and breach of universality (by not enumerating refugee villages/camps). Besides, in spite of repeated recommendations by national experts in the advisory committee, the conduct a PES, as is the practice in many countries, was also turned down by PBS authorities. Thus, the possibility of the 2017 census being affected due to the above mentioned reasons cannot be overruled. Since a PES was not conducted following the census, there is no way to validate the 2017 census results.

Consequently, following the release of provisional results of the 2017 census, the print and electronic media showed several reservations and the situation has not changed even today. Similarly, the validity of the 2017 census has been questioned in a comprehensive analysis of the provisional results of the 2017 census and it has been documented that the data suffer from several anomalies. Later, in the meeting of Council of Common Interest (CCI) held in December 2017, under the chairmanship of the Prime Minister, Sindh's Chief Minister raised the issue of possible undercounting of Sindh's population. Since the international standards of cross-validation of the census results were not followed by PBS, a meeting was held in the Senate of Pakistan and agreement was signed by the leaders of all political parties, where it was agreed that a validation survey will be conducted in 5 percent of randomly selected census blocks from all over the country, by a third party and the results will be validated after cross checking with

the enumeration done in these blocks in the 2017 census. For the purpose a "Census Commission" of three prominent demographers was also notified by the Government of Pakistan to supervise the validation survey. The Commission had its first meeting on January 7, 2018 which was also attended by four other senior demographers along with the Secretary of the Ministry of Statistics and other senior officials from PBS.

There was a general consensus among the experts who attended the meeting, that the 2017 census suffered from several flaws and it will be appropriate to conduct a third-party validation exercise. However, later the Commission was disbanded. In many developed and developing countries, PES is conducted as a routine in randomly selected areas immediately after population censuses, to determine how many households and persons the census missed and estimates are made where they are missed from along with their characteristics. For example in the 1990 and 2000 US censuses a net under count of over one percent was reported, however, there was a substantial improvement in the coverage according to the PES conducted after 2010, which showed a net over count of 0.01 percent. In Australia and Canada PES conducted after the 2011 censuses, the undercount was 1.8 and 3 percent, respectively. Since the 1951 census in India, PES was routinely conducted which suggest improvements over years. Thus, the PES conducted after the 2011 census indicated that 2.3 percent people were missed with wide regional variations with substantial undercount detected in urban areas. The PES conducted in Bangladesh following the 2011 census, reported that 4 percent people were missed

In view of the above discussion, it is important to note that post-enumeration survey is a very important exercise and therefore, is worth undertaking. The PES methodology is adaptable to the country's circumstances and therefore, must be adopted following the next census of Pakistan so that its results are readily acceptable to all the stakeholders. However, for the PES to be useful in measuring coverage and content errors, it must be well planned and implemented. Since the PES normally covers fewer variables compared to other household surveys and is usually based on a comparatively smaller sample, and is carried out immediately after the census, means that its overhead costs may be greatly reduced.

⁹Karim, Mehtab S. 2018. The 2017 Census of Pakistan: Analysis of Provisional Results. Karachi: Social Policy Development Centre. Research Report No. 101.

¹⁰US Census Bureau (2012) <https://www.census.gov/newsroom/blogs/director/2012/09/how-good-was-the-2010-census-a-view-from-the-post-enumeration-survey.html>

¹¹Registrar General & Census Commissioner, India, 2014. Census of India: Report on Post Enumeration Survey. New Delhi.

¹² Bangladesh Institute of Development Studies. 2012. Report of the Post Enumeration Check of the Population and Housing Census.