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The future of censuses and their role for national statistical systems

Implementing a register-based census – the Portuguese experience

Note by Statistics Portugal

Summary

Given the high financial costs and human resources associated with censuses, Portugal has assessed the use of administrative sources in census data collection, either as a full or a partially register-based census.

The paper explains how to identify from different administrative sources the statistical units needed in censuses, such as residential buildings, housing units or dwellings and households and persons. The purpose is to develop guidelines for the use of administrative data in the 2021 Census Round. This paper presents and shares the results of the preliminary analysis of the use of register data in Portugal.

I. Introduction

1. The last population and housing census (hereafter census) carried out in Portugal – the 2011 Census – adopted the traditional approach, which consisted of exhaustive enumeration of all statistical units. Questionnaires are completed by the population (or enumerators) and subsequently collected by enumerators. For the first time, it was also possible to respond through the Internet. About 50.5% of the population adhered to this option.
2. Carried out every ten years, the traditional census operations are complex and expensive and pose a considerable statistical burden on citizens who are required by law to respond to questions whose answers may already exist in files of the Public Administration (Scheuren, 1999). Given these constraints, some member countries of the United Nations Economic Commission for Europe (UNECE) started a transition census, which implements alternative methods, based on administrative sources, to collect census data. Following this trend, Portugal also intends to evaluate and implement a full or partial register-based census.
3. The objective of this paper is to present and share the first steps of the Portuguese experience in building the transition from a traditional to a register-based census. The main purpose is to answer the key question: if the 2011 Census hadn't been carried out using the traditional model, could we have obtained consistent and relevant census data on population through administrative sources?
4. The paper starts by describing the main aspects and conditions that have been put together to implement the census transition. This is followed by identification of the relevant registers and preliminary analysis regarding population statistical units. Finally, we present the conclusions and futures challenges for Portuguese census transition.

II. Census transition - moving from a traditional census approach to a register-based census

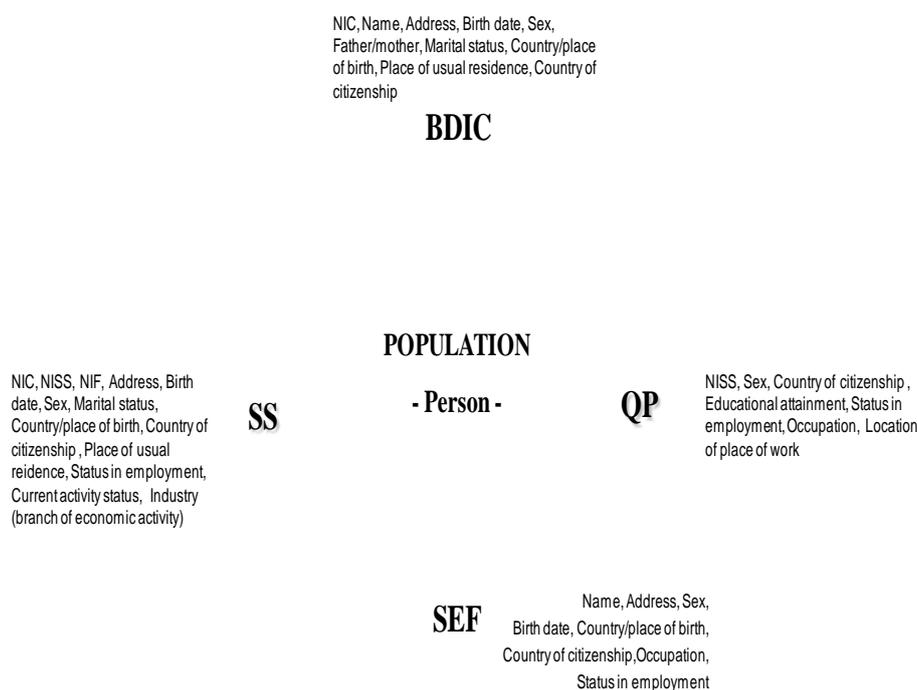
5. One important point, resulting from the experience of other countries regarding the use of administrative registers for statistical purposes, is the existence of specific legislation allowing access to producers of official statistics (Wallgren and Wallgren, 2007). In Portugal, for the first time, the National Statistics Act (2008) clearly grants Statistics Portugal the right, for statistical purposes, to access administrative information collected by public sector entities.
6. The 2011 Census legislation states that this census operation should be the last one adopting the traditional approach and defines clearly the use of 2011 Census results for the implementation of a transition census process supported by administrative registers.
7. The 2011 Census Action Programme defines a work programme to specially address the challenge of making a census transition. The main motivation is to reduce statistical burden on citizens, generate census information more frequently than every ten years and decrease the high costs associated with the traditional census operations.
8. The work programme has been oriented toward the identification and evaluation of sources that cover the statistical units in the census: housing (building and dwelling) and population (household and person). This objective aims to prepare the base for the use of administrative data in the 2021 Census Round.

III. Preliminary analysis of administrative population registers

9. Under the current legislation, Statistics Portugal had access to some administrative registers (with individual data) with the potential to obtain census information. Concerning the population variables, Statistics Portugal accessed: the Civil register (BDIC), from the Register and Notary Institute of Ministry of Justice; the Social Security register (SS), from the Ministry of Solidarity and Social Security; the Employment register (QP), from the Office of Strategy and Planning of Ministry of Solidarity and Social Security; and the Foreigners register (SEF), from the Foreigners and Borders Office of Ministry of Internal Administration. In these registers (Figure 1), the records were evaluated in terms of coverage, content, quality and identifiers.

Figure 1

Administrative population registers analysed



10. In these four registers, about 63% of the mandatory census variables, defined by the European Union (EU) regulations and UNECE recommendations, are represented in some of the existing registers. However, there are significant limitations in the coverage and content of these variables.

11. Some variables are presented in more than one of these registers. Concerning the population variables, BDIC is identified as a core register and contains information on all citizens holding Portuguese nationality and Brazilian citizens with equal status (resulting from the Treaty of Porto Seguro between Portugal and Brazil). The civil database doesn't include children born before 2007 and without a Citizen Card (CC), which is only compulsory to children that are over 6 years old. BDIC includes the following mandatory census variables: sex, birth date, legal marital status, country/place of birth, country of citizenship and place of usual residence.

12. The analyzed BDIC 2009 and 2010 (referenced to 31 December) data files include data of sufficient quality for potential use: an exhaustive numeric primary key (NIC – Civil identification number) without duplication; small percentage of missing data; standardized

address fields of person with CC, which may permit the matching with other registers. The 2010 BDIC data file has more (7.1%) resident persons in Portugal than the provisional results of the 2011 Census (reference date – 21 March 2011). We estimate that many persons, who are in BDIC with legal residence in Portugal, reside in fact in another country and are not counted in the census operation.

13. The Social Security (SS) register only includes information from active contributors and pensioners of the Social Security regime. It doesn't include, e.g., the civil servants contributors and pensioners of the regime of *Caixa Geral de Aposentações*. The SS register includes the following mandatory census variables: sex, birth date, legal marital status, country/place of birth, country of citizenship, place of usual residence, status in employment, current activity status and industry (branch of economic activity).

14. The analyzed data files from 2008 to 2010 (referenced to December 31) include some data of sufficient quality for potential use: an exhaustive numeric primary key (NISS – Social security identification number) without duplication; small percentage of missing data; standardized variables; completion rate of around 96% for the numeric filed NIF (Fiscal identification number), which may permit the matching with other registers.

15. The Employment register only covers the data submitted annually by all employers (individuals or collective) to workers employed under a contract of employment. The QP register includes the following mandatory census variables: sex, country of citizenship, educational attainment, status in employment, occupation and location of place of work.

16. The analyzed data file from 2009 (referenced to October 31) include some data of sufficient quality for potential use: an exhaustive numeric primary key (NISS – Social security identification number) without duplication; small percentage of missing data; standardized variables and classifications are those used by Statistics Portugal.

17. Foreigners registered only cover those foreign persons legally residing in Portugal. The SEF register includes the following mandatory census variables: sex, birth date, country/place of birth, country of citizenship, status in employment and occupation.

18. The analyzed data file from 2009 (referenced to December 31), contrary to the other registers, does not seem to be sufficient as a source data for censuses as: the primary key corresponds to an internal code of the register-manager and does not allow matching with other registers; information only available at the municipality level; lack of validation in some fields.

IV. Conclusions

19. The transition census in Portugal is focused on three objectives: to reduce the statistical burden on citizens, to allow greater frequency of census data (if possible annually) for some main variables, and to decrease the high costs associated with the census operations. Concerning the population variables, about 63% of the mandatory census variables are included in the administrative data files that had been analyzed. However, these variables present significant limitations in terms of coverage and content. BDIC is identified as the core register.

20. To continue the work programme, the future challenges for Portuguese census transition include: strengthened requests for accessing administrative data from the register-managers, particularly the personal income tax registers and data from areas not yet covered: education and unemployment; comparison of the existing individual administrative data with the 2011 Census data; definition of new methodology for collecting information for the post-2011 Census.

IV. References

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