

## Article

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### **A Census of Population Based on an Administrative Register**

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## **A Census of Population Based on an Administrative Register**

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### **Abstract**

One of the main characteristics of the 2001 Spanish Census of the Population was the use of an administrative Register of Population (El Padrón) for pre-printing the questionnaires and also the enumerator's record books of the census sections. In this paper we present the main characteristics of the relationship between the Population Register and Census of Population, and the main changes that are being foreseen for the next Census that will take place in 2011.

Key Words: Census of the population, Population register, Multi-mode collection method

## **1. A Census based on a Population Register**

### **1.1 Introduction**

The Spanish Census of the Population is drastically conditioned by the existence of the Population Register. It must be taken into consideration that the modifications at the Population Register detected in the Census (new additions, withdrawals and other changes) are sent to the municipalities which then update the Population Register after carrying out all necessary checks.

The new legal foundation launched in 1996 establishes that "the National Bureau of Statistics (INE) will elaborate the Census and this *will be based on the data of the Population Register* and will serve to check the accuracy of the data of the Population Register and *to be updated with the appropriate corrections*". It also added that "Measures will be taken in order to keep the census data, subject to the statistical confidentiality, separate from the Population Register data that have an administrative purpose."

### **1.2 Main characteristics of the Population Register**

In Spain there are 8,108 Municipalities. Each one manages the Population Register for its own area and on a monthly basis send the changes that have taken place in it to the INE by means of standard files. In 1996 all municipalities sent copies of the municipal registers to INE for the first time.

The Population Register has an administrative purpose and its data are proof of the residence and address of a person. People need to be registered to have access to certain public services such as education and health care.

Any municipality in which an inner citizen registers should notify this fact to the municipality in which he or she was previously resident so that previous registration may be cancelled. INE is in charge of the coordination of all municipal registers to avoid duplicates.

The variables included in the Population Register are: name and surnames, sex, principal address, nationality, place and date of birth, identification number and educational qualification classified in four categories.

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## **2. Main characteristics of the 2001 Census of the Population**

### **2.1 General features**

The Census must consider the same definition for 'residence' that the Population Register (PR). In the PR a citizen must be registered in the municipality in which he lives most of the year; this was, therefore, the definition used in the Census and it didn't consider the people who were in the Spanish territory during the Census but didn't reside within.

Also, a characteristic of an operational kind is that the time-gap between the data of compilation of the Population Register used for the personalisation of the Census questionnaires and the Census field operation must be as short as possible in order to avoid, if possible, that citizens communicate in Census forms changes yet notified in the Population Register. In 2001 Population Register data were for the month of April and the collection took place between October 2001 and January 2002.

### **2.2 Characteristics of the questionnaires**

The census questionnaire was divided into four separate sheets with a twofold purpose. Firstly, one of the sheets contained exclusively the Population Register data and those data were the only information sent to the municipalities. This allowed to keep apart the administrative data from the statistical data. Secondly, the division in separate sheets allowed a proper procedure for scanning, optical reading and video correction of the census questionnaires.

There were two types of households, depending on whether the questionnaires contained data pre-printed from the Population Register or not (blank questionnaires).

The census sheets were as follows:

- Sheet 1: in the front it contained the instruction and identification of the address. It included also the free telephone number for assistance and the internet address and the codes for completing the questionnaires by internet. The identification part was different depending on whether it was a personalised questionnaire or a blank one. For blank questionnaires the identification was filled in by the enumerator writing the section number and dwelling number that were to be found in the Enumerator Record Book. For not blank questionnaires the identification numbers, the address in the Population Register and the people living in the dwelling according to the Population Register was pre-printed in it.

In the back it contained eleven variables about the dwelling: year in which the dwelling was occupied, tenancy regime, problems with the dwellings and its surroundings, facilities, main fuel used to heat the dwelling, number of rooms, dwelling area, availability of second dwelling, municipality of the second dwelling, numbers of days a year the second dwelling was used and availability of motor vehicles.

- Sheet 2: for the pre-printed questionnaires it included in the front and in the back all the information of the Population Register. This information was only to be corrected in cases of error. There was place for eight people, four in the front and four in the back. There was also place for the signatures.

The rows for people in the Population Register were different from those for people newly entered because they had additional space to indicate the reason for leaving the dwelling.

- Sheet 3: it contained the information of seven variables for eight people, four in each side. It was also personalized for dwelling in the Population Register. The variables included were: marital status, relationship with person 1, place of residence ten years ago, year of arrival and place of origin, level of studies, sector of study and relationship with activity.

- Sheet 4: it contained an individual questionnaire in each side. It should be completed by people 16 years old or over that were studying or working. These questionnaires were not personalized and the Census Agent was in charge of including as many sheets as needed and also of writing the identification codes in then according to the Enumerators Record Book. The variables included were: place of work or study, number of journeys a day to the place of work or study, means of transport to the place of work or study, duration of journey to the place of work or study, studies in progress, occupation, activity of the establishment, professional situation, time usually worked, knowledge of Spanish official languages.

## **2.3 The Enumerator Record Book**

The delivery and collection of questionnaires was made by enumerators engaged by INE. Each enumerator was assigned a census section that, in average, had 590 dwellings, including vacants and secondary residences.

The Enumerator Record Book contained pre-printed three hierarchical levels of information: level of the stretches of street defining the census section, level of buildings and level of dwellings and establishments.

For any level, new units, changes and death units could be recorded by the enumerator. At the building level there was place for recording the characteristic of the buildings (e.g.: type and state of the building). At the dwelling level there was place for recording information about the kind of dwelling or establishment and also the situation of the delivery and pick-up of questionnaires.

The new units for building and dwelling levels were reported at the end of the Enumerator Record Book, in special rows that had also preassigned identification numbers.

To build the Enumerator Record Book the information in the Population Register was merged with the information in the Real Property Register, which allowed to add addresses of premises and secondary and vacant dwellings.

All premises and dwellings in the Enumerator Record Book were assigned an identification number. The purpose of this number was to link the Enumerator Record Book and the Questionnaires. The addresses were always assigned in the Enumerator Record Book by the enumerator and never by the informant.

## **2.4 Other characteristics of the 2001 Census**

### **2.4.1 Internet use**

It was possible to use Internet to complete the Census questionnaires. In the front of the sheet 1 was a code and a password that enabled citizens to use this method. However, if the information from the Population Register was incorrect, an electronic digital signature was needed to be able to modify it by Internet. Only 14.000 questionnaires were filled in using this method, about one in every thousand of the collected questionnaires.

### **2.4.2 Percentage of coverage**

The percentage of coverage of premises and dwellings was 99.13%. This means that at the end of the Census operation for this percentage of units it was recorded the information about the kind of dwelling or premise (the kinds of dwellings were: principal, secondary, vacant or other), when considering all initial units in the Enumerator Record Books plus the new units detected during the Census.

The percentage of principal dwellings from which questionnaires were collected was 91.87%, 7.37% were absent households and 0.76% were refuses to collaborate. A main feature of the Census was that, at the editing phase, the Population Register was used to supplement the information of the non-response dwellings.

### **3. Main changes that are being considered for the 2011 Census**

#### **3.1 Viability of collecting the Census information in various phases**

In order to try to recruit fewer staff and reduce the budget of the operation we are analysing the viability of collecting the Census information in various phases:

- In a first phase the pre-printed Census questionnaires should be sent to households by post. The households could choose different ways for completing the questionnaires: returning the completed questionnaires by posts, by internet or, in special cases, by telephone. The completed questionnaires returned by post would be received in a central office for subsequent processing.
- In a second phase the Census Enumerators will cover the census sections, collecting the questionnaires not obtained in the previous phase. In this phase the census agents will deliver blank questionnaires to dwellings not included in the Population Register. The households could continue sending information by internet.
- In a third phase, to improve coverage, an investigation of telephones for addresses not covered in previous phases would be conducted and a CATI operation would be launched.

#### **3.2 Analysing the advantages of the use of hand-held computers by the Census Enumerators**

We are analysing the advantages and disadvantages of using hand-held computers by the Census Enumerators. Some of the advantages are:

- In the second phase the Census Enumerators will have updated information about the collaboration of informants by post or internet thus avoiding needless visits.
- Hand-held computers could simplify the use of the Enumerator Record Book because the units of building and dwelling levels will appear in a logical way handling death and new units.
- The enumerator routes in urban areas could be organized taking as a basis the information of addresses in the alphanumeric files, the cartography information having a purely auxiliary role while in sections with widely-disseminated population routes could be organized on the basis of the cartographic information.
- The hand-held computer should be used as CAPI only in very special situations but not in a general way.

It is foreseen in may 2009 a pilot test in 60 census sections in order to analyse the viability of the procedures. The aims of the test are:

- To analyse the capability to coordinate the different methods of collection.
- To estimate the main parameters of the operations: percentage of questionnaires collected in the first phase, kind of errors in the questionnaires sent by post and percentage of questionnaires collected by each method.