

Assignment of educational level, relationship with labour activity, and occupation to Vital Statistics (VS) files. Obtaining method and user advisories.

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1 Introduction

The main objective is to improve the quality of the information in the classification variables collected in the birth, marriage and death bulletin by incorporating highly reliable administrative information. This information is incorporated into the VS files from **2016 onwards**.

Using the numerous available data sources, assignment is made to parents (in the case of birth statistics), spouses (in that of marriage) and deceased (in death statistics), regarding labour activity and occupation for the population aged 16 and older (referred to January 1 of each year) and the educational level for those over 25 years of age.

Information from the pre-census population files that are being prepared for the 2021 Population and Housing Census were used for this purpose¹. The assignment of the three variables to the entire population is an essential part of the Census work and is subject to continuous revisions and improvements.

In some cases it is not possible to link the information in the VS records with the administrative sources. Furthermore, VS refers to events that took place in Spain, and not necessarily of the resident population; in the case of non-residents, these variables are not available, since no data from that population is found in any of the sources. All of them refer solely to the resident population. For these reasons, a small percentage of “no data recorded” will appear in all cases.

Below are the three processes, differentiated by variable. Certain advisories are also given regarding this information’s use.

2 Assignment of Relationship with Labour Activity.

There is a classification into seven categories for this variable.

- Economically active population
 - Employed
 - Unemployed
- Economically inactive population:
 - Retired, pre-retirement, pensioner or landlord
 - Student
 - Person with permanent disability
 - Other situations of inactivity

In order to provide this breakdown, there are numerous sources of economic, educational and tax information.

¹ https://ine.es/censos2021/censos2021_proyecto.pdf

Sources used

- Economic sources:
 - Workers who contribute to Social Security who were registered (General Treasury of Social Security) during the week prior to January 1 of each year.
 - Spanish Public Employment Service (SEPE) job seekers.
 - Officials who do not contribute to Social Security and belong to one of these three state mutual insurance companies: MUFACE, MUGEJU and ISFAS.
 - Persons with the Social Security system who received a pension, and the reason for this pension (retirement, disability, orphanhood, widowhood). (INSS)
 - Persons who receive a pension but are not part of the Social Security system (Passive Classes).
- Educational sources:
 - Students enrolled in university and non-university education.
- Tax-type sources:
 - Model 190 tax information for the previous financial year provided by the Tax Agency, as well as tax information from the Tax Offices.

Procedure for assigning the relationship with labour activity

For each person, an attempt is made to assign a situation value in relation to the activity based on economic and educational sources. For those to whom it is not possible to assign a situation, a contrast is made with tax sources, giving rise to a final estimate.

The relationship with the activity is based on presence in administrative records. Since so many sources are taken into account, it is normal for there to be different coexisting situations, which lead to conflict for each person. A series of priority rules are thus established based on the recommendations of the United Nations and the European Regulation for Censuses.

The vast majority of persons aged 16 years and over are assigned a relationship with labour activity on January 1, except for the approximately 10% for whom no information is found in any source and who are therefore considered inactive (in other situations of inactivity).

3 Assignment of Occupation.

All persons aged 16 years and over who were assigned the status of employed in the previous process will then be assigned an occupation. The breakdown of the occupation variable is to the first digit of CNO11²:

²

https://ine.es/dyngs/INEbase/es/operacion.htm?c=Estadistica_C&cid=1254736177033&menu=ultiDatos&idp=1254735976614

- Directors and managers
- Scientific professionals and intellectuals
- Technicians and associate professionals
- Clerical support workers
- Service and sales workers
- Skilled Agricultural, Forestry and Fishery workers
- Craft and related trades workers
- Plant and Machine operators and workers
- Basic occupations
- Military occupations

The following sources are available to provide this breakdown:

Sources used

- Information from the state mutual insurance companies MUFACE, MUGEJU and ISFAS.
- SEPE's current contract file, which contains information from 2001 onwards on the last contract in force for each person as of January 1 of the reference year. If the person holds several jobs, information is given for their main job.
- 2011 and 2001 Censuses.

Procedure for obtaining the occupation

For all officials, information is looked for in their mutual insurance file. Although they may be carrying out another residual economic activity, the activity included in their mutual insurance file is considered their primary job.

For all workers affiliated with Social Security, their contractual information is looked for in the Spanish Public Employment Service (SEPE) contract file. A historical file, which has been available since 2001, contains information on the last contract held for the entire population registered at some point in said file.

In the event that no information is found for certain persons affiliated with Social Security, information from previous censuses (2011 and 2001) is used. With this process, a percentage of records -around 5%- remain unassigned.

Advisories on this information's use

The SEPE contract file is the main source for determining occupation. Despite being a source of enormous wealth, with excellent coverage (it contains more than 23 million people who, since 2001, currently hold or have ever had a registered employment contract), it does have one limitation regarding its usefulness in determining the current occupation of persons.

For those persons who signed contracts several or even many years ago, the information available is in regards to their occupation at the signing of the contract. Variations that may have occurred in terms of occupation within the same company -which do not result in contractual modifications- are not reflected in this file. This information is thus still subject to improvements and analysis, which will be incorporated in the coming years.

4 Educational Level Assignment

Although in the 2021 Census work is done to assign educational level for the entire population aged 15 or over, in the VS, this level will be assigned solely to persons aged 25 and over. The educational level allocation algorithm for people below this age has not yet been developed sufficiently, although it should be completed in the coming years.

A breakdown into 12 categories is provided, based on the CNED_A classification³ to homogenize the information available in all the sources consulted.

Level of Studies Classification - CNED-A adapted

Level	Description
01	Illiterates
02	Incomplete primary education
03	Primary education
04	First stage of secondary education and the like
05	Second stage of secondary education, with general orientation
06	Second stage of secondary education, with professional orientation
07	Non-higher post-secondary education (⁴)
08	Vocational training, visual arts and design, and higher-level sports education and the equivalent; university degrees requiring a baccalaureate diploma, lasting two years or more.
09	University degrees of up to 240 ECTS credits, university graduates, own university expert or specialist qualifications and equivalent.
10	University degrees of over 240 ECTS credits, bachelor's degrees and equivalent
11	Specialities in Health Sciences for the residence system and similar
12	University PhD

Sources used

- Municipal Register. The school or academic title is a registration variable that must be collected by municipalities in their municipal register. As such, it appears on the registration forms. Incorporation in the Register is related to the creation of the Electoral Census. In the ongoing management of the Register, this information is thus collected from the municipalities, and is refined using information received every six months by the Ministry of Education, Culture and Sport regarding titles issued.

³https://ine.es/daco/daco42/clasificaciones/cned14/CNED2014_capitulo2.pdf

⁴ Corresponds to level 3 professional certificates.

It is important to highlight that the management rules for the Municipal Register allow municipalities to classify this variable in two ways. This means that information on school title is not available for all persons with the same level of detail. Approximately 40% of the population in the Register is thus coded with the simplified classification, which is what appears in the electoral census (4 aggregated levels), while the rest are coded using value from the complete classification (13 detailed levels).

- Ministry of Education Titles. Information is available from the files of non-university (LGE, LOGSE, LOE) and university degrees and standardisation of foreign degrees to university and non-university degrees. The Ministry of Education sends these to the National Statistics Institute on an ongoing basis.
- 2001 Census For the nearly 34.5 million people 16 years of age or older who responded to the census questionnaire in 2001 with a reference date of November 1, 2001, we have information on the level of education achieved up to that date.
- 2011 Census For the nearly 3.5 million people 16 years of age or older who responded to the census questionnaire in 2011 with a reference date of November 1, 2011, we have information on the level of education achieved up to that date.
- Job seekers from the State Public Employment Service (SEPE). For persons enrolled in public employment services, information on the level of studies completed is available.
- SEPE Professionalism Certificates. A record exists of historical professionalism certificates that certify skills recognized by the educational Administration; this serves to validate the corresponding professional module or modules.
- Central Registry of Foreigners. Information is available as of January 1, 2018 for foreigners with valid authorization to study in Spain.
- Enrolled in the educational system in non-university education of the Ministry of Education. Available from the 2014-2015 academic year onwards.
- Enrolled in university education through the Council of Universities. All enrolments are available from the 2010-2011 academic year onwards.
- University graduates. Historical information for persons graduated from University for the 2010-2011 academic year was included.
- SEPE contracts in force. Since 2001, information has been available that each person's last contract as of January 1 for the reference year and gives the worker's educational level.

Procedure for assignment of educational level

Information is retrieved from all available sources for the entire population and transformed into a homogeneous classification (proposed classification based on CNED-A with 12 headings)

Educational level is assigned to all persons using the available information, except for enrolment in studies (which are governed by the ISCED2011 classification⁵ of in-progress studies).

This is contrasted with information on enrolment for younger people, for whom no prior information has been found, or for those who do not have a specific level of the adapted CNED-A.

If it is not possible to make a decision based on the relative information on enrolments, a possible value is imputed probabilistically using the 2011 Census as support and taking into account the province of residence and the person's age (0.2% of cases).

Information is thus finally available for the entire population.

Advisories on this information's use

Administrative records lack full coverage for young people. Therefore, in the case of deaths, information is only assigned to people 25 years of age and older.

5 General advisories on how this information should be used

The information provided by pre-census files is of high quality and represents a clear improvement for variables that were traditionally collected using bulletins with a very low response rate.

However, the provisional nature of these pre-census files and the possible differences in the estimated variables must be emphasized, due to the fact that the administrative information available is increasing.

A future revision of the values assigned to these variables in all VS statistics can therefore not be ruled out, at the point that more consolidated information becomes available.

⁵ <https://www.educacionyfp.gob.es/dam/jcr:a60265fe-7b79-4b8b-a615-ace845e3ed1c/cine2011esp.pdf>