
1 Introduction

The main objective presented is to answer to a recurring demand by users of incorporating information on the level of studies in Death Statistics. Statistical Death Bulletin does not contain this variable and we are aware that the quality it would acquire if it did, would be probably low, given the experience with other bulletins and the low quality when collecting profession and occupation in the same bulletin.

In order to allocate the educational level to deaths, it has been used the acquired knowledge up to today in the compilation project of Population and Housing Censuses 2021, by the INE.

2021 Census is presented as a combination of different administrative registers. One of the variables that has been under study is population's educational level. Currently, using the different sources of available data, we have accomplished to establish an educational level for all population. This allocation is to this day improvable, with the expected incorporation of better information and more updated on level and type of studies of young population, as well as data of current studies . We continue to work to incorporate those sources.

Nevertheless, given that deaths are concentrate in population of higher ages, less affected by current lacks of the process of educational level allocation, it has been considered appropriate to engage with this demand of users incorporating to the files of deaths the educational level, starting with the one corresponding to 2012. Although acknowledging the imperfections -and the improbable definitive nature- of the proceeding. In the final section of this document appear some warning on the use of this information.

The obtaining procedure of the educational level has six phases clearly differentiated:

1. Recovery of information of the available sources for all population.
2. Transformation of the information into a homogeneous classification for all population.
3. Treatment and filtering of said classification.
4. Obtaining the educational level from the available sources via the defined algorithm.
5. Imputation of information in the registers with non-allocated educational level. With this we dispose an educational level for all population on 1 January 2012.
6. Link of the previous file with deaths in 2012, 2013 and 2014.

2 Sources of information in order to allocate an educational level for all population.

In order to obtain the educational level achieved by a person we have use the following sources:

- Census. The school certificate or academic title are variable of censuses registration that councils must collect in their municipal register. Therefore, they figure in the census base of the INE, although the INE does not disseminate the distribution of population by these variables via the Continuous Register Statistics. The incorporation in the Census is related with the information of the Electoral Census that is carried out as of the censuses information. Therefore, the continuous management of the Census collects this information of councils and filters it with the information received half-yearly by the Ministry of Education, Culture and Sports on qualifications issued.

It is worth noting that management regulations of the municipal Census, allow two types of classifications of these variables by councils, thus it is not available information regarding the school certificate with the same level of detail for all persons. In this way, 41.5% of the population is codified with the simplified classification, which is the one that figures in the electoral census (4 aggregated levels), while 58.5% have some value of the complete classification (13 detailed levels).

Information used is the one appearing in the census registry with date of 1 January 2012.

- 2001 Census. For the nearly 34.5 million of persons aged 16 years old or over that answered to the census questionnaire in 2001 with reference date of 1 November 2001, we have information on the level of studies achieved as of that moment.
- 2011 Census. For almost the nearly 3.5 million of persons aged 16 years old or over that answered to the census questionnaire in 2001 with reference date of 1 November 2001, we have information on the level of studies achieved as of that moment.
- Qualifications of the Ministry of Education. We count with information of the files of qualifications that the Ministry of Education continuously sends to the National Statistics Institute.

3 Classification of the educational level used

The classification of the educational level of the four sources is not exactly the same. For this, we have use an specific adaptation of the NCED-A as homogeneous classification. Moreover, we have established equivalences between different classifications of the four data sources and this one.

The used classification contains the following headings:

Classification of the educational level - adapted NCED-A

Level	Description
01	Illiterate persons
02	Incomplete primary education
03	Primary education
04	First stage of secondary education and similar
05	Second stage of secondary education with general orientation
06	Second stage of secondary education with professional orientation
07	Post-secondary education without being higher education ⁽¹⁾
08	Vocational, plastic arts and design trainings, and sport advanced vocational training and equivalents; Degrees recognised by some universities that require a Baccalaureate certificate, duration equal to or higher than 2 years
09	University degrees with 240 ECTS credits, diplomas, own university degrees of expert or specialist and similar
10	University degrees with more than 240 credits, Bachelor's degree and similar
11	Masters degrees, specialisation in Health Sciences by the residence system and similar
12	University doctorate

It is important to bear in mind that in the case of the classification used in the Register, when the educational level corresponds to an aggregate value in four categories (10, 20, 30 or 40), we cannot allocate an specific level of the adapted NCED-A. Therefore, in that case, will allocate a set of possible values.

Classification of educational level - Source Municipal Register

Level	Description
10	Aggregation of category 11
11	Cannot read or write
20	Aggregation of categories 21 to 22
21	Without studies
22	Incomplete Primary Education. Five academic years of General Basic Education or Schooling Certificate or equivalent.

⁽¹⁾ Correspond with professionalism certificates level 3.

To this day none of the four data source heads directly to 07 category, but it is head jointly with other categories. Due to that in order to solve this uncertainty it is used as external source 2011 Census and in that Census there is no registers of that category (there are no observation with value 07. The future solution will be to incorporate data of qualification registers and use external source in order to impute where appears explicitly "Non-high postsecondary education".

30	Aggregation of categories 31 to 32
31	Upper-secondary elementary education School Graduate. Complete General Basic Education. Complete Primary education OSE.
32	First Degree Vocational Training. Intermediate Vocational Training. Industrial Official
40	Aggregation of categories 41 to 48
41	Second-Degree Vocational Training. Advanced level Vocational Training. Industrial Master's Degree.
42	Post-Secondary Graduate. Unified Polyvalent Baccalaureate Post-Secondary Education Graduate GLSES.
43	Other intermediate qualifications (Care Assistant, Secretariat, Computer programmer, Flight assistant, Diploma students in Arts and Trades,... etc.)
44	Diploma students in University Colleges (Business, General Basic Education Teaching, health assistant and similar)
45	Technical Architect or Engineer
46	University graduate Advanced Architect or Engineer. University degree
47	High non-University education studies graduates
48	Doctorate and postgraduate studies or specialisation for university graduates University Master.

4 Algorithm for the determination of the educational level

As aforementioned, the basic idea that has been followed was to allocate to each person an educational level among the four sources of available data. If there were disagreements between two sources, the maximum level between them will be allocated. When allocating a value, two situations are possible:

- The educational level corresponds to a specific level of the adapted NCED-A. In which case we will allocate that level to the person.
- The educational level does not correspond with a specific level of the adapted NCED-A, but with a set of values (for example, if a person only has a registered educational level valued in 40, this will correspond to the level 05 to 12 according to the adapted NCED-A).
- In this case, we will impute in a probabilistically manner a value among the possible ones using the 2011 Census as support source and taking into account the province of residence and the age of the person.

When we dispose of a source in which we have allocated a set of values and another source where we have allocated an specific value that does not conflict with the ones of the set, then we will allocate this last one as educational level.

Once this is done for all the population, this file completed is related with deaths in 2012, 2013 and 2014.

Of the 1,189,199 deaths occurred in years 2012, 2013 and 2014, we have allocated an educational level for **97,51%** of the registries.

The following chart summarize the different possible situation and the treatment applied to each one of them.

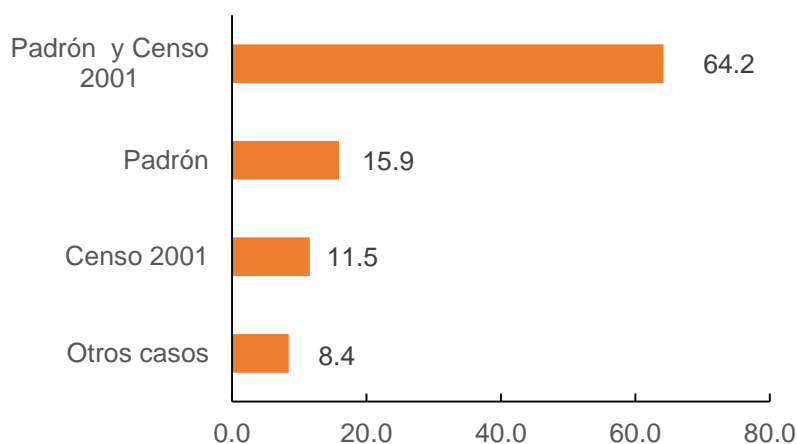
Results of the allocation of the educational level to the files of deaths 2012-2014

Type of register	Performance	No. of affected registers	Percentage (%)
Under 16 years old with date of 1 January 2012 or without information in the sources	We will mark this registers as 99 (not available)	29,579	2.49%
With information: an specific value of the adapted NCED-A	Allocating that value as educational level	1,009,418	84.88%
With information: a set of values of the adapted CNED-A	Imputing a value to that set	150,202	12.63%

Regarding the registers not found we have to consider that the file of deaths compiles both resident population and non-resident (about 2,000 registries a year). Obviously, for these last ones we do not have available the educational level, since they are not in any of the sources because all of them are referred to just the resident population. Moreover, educational level will not be assigned to deaths of persons under 16 years old.

If we analyse which sources provide the educational level of a person, we see that in 64.2% of the registers the information has been obtained both from the Register and 2001 Census, in 15.9% of the cases just from the Register and in 11.5% just from the 2001 Census.

Source that provides the educational level (%)



Results:

In the following chart figure the educational levels obtained according to the algorithm for deaths occurred during years 2012, 2013 and 2014.

Educational level of death persons in 2012, 2013 and 2014

	Deaths	Percentage (%)
TOTAL	1,159,620	100.00
01. Illiterate persons	46,693	4.03
02. Incomplete primary education	315,973	27.25
03. Primary education	390,201	33.65
04. First stage of secondary education and similar	220,612	19.02
05. Second stage of secondary education with general orientation	61,278	5.28
06. Second stage of secondary education with professional orientation	25,295	2.18
08. Vocational, plastic arts and design trainings, and sport advanced vocational training and equivalents; Degrees recognised by some universities that require a Baccalaureate certificate, duration equal to or higher than 2 years	20,752	1.79
09. University degrees with 240 ECTS credits, diplomas, own university degrees of expert or specialist and similar	37,842	3.26
10. University degrees with more than 240 credits, Bachelor's degree and similar	33,670	2.90
11. Masters degrees, specialisation in Health Sciences by the residence system and similar	2,103	0.18
12. University doctorate	5,201	0.45

5 Warnings on how to use this information

In order to compare the educational level of death persons with the population as a whole, it is necessary to consider that an educational level has been allocated to all population and that it does not necessarily matches with the information published in other sources (2011 Censuses or Active Population Surveys).

The fact that in case of conflict between two sources, the highest educational level has been chosen, provides that the average educational level is slightly higher than the content in each of the sources.

It is worth noting too that each one of the data sources contains its own classification and that the transformation to the adapted NCED-A is not always

direct. Moreover, there is a delay in the bracket of time elapsed since a person studies and the INE receives that information by the Ministry of Education. These reasons may cause that the results are not completely comparable with other sources.

For these reasons, in order to ease the use of this information by users, results summaries on the educational level for all population are published as an annex of this document. These data must be understood by users as assistant information necessary in the case of wishing to build rates and other indicators in which they need homogeneous population figures in the denominators as offered in deaths figures. **Educational level data of population that appear in this annex has not an official data nature** since, as previously mentioned, are the result of a process that will be concluded in 2021 Census.

Annex: Educational level of the Spanish population at 1 January 2012

1. [National data](#)
2. [Data by Autonomous Community](#)
3. [Provincial data](#)