

INSTITUTO NACIONAL DE ESTADISTICA



Migration Statistics Methodology

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1 Introduction

The objective of the *Migration Statistics* is to provide a quantitative measurement of the migratory flows for Spain, for each Autonomous community and for each province with foreign countries, as well as the inter-Autonomous Community and inter-provincial migrations. The results are broken down by month of occurrence, sex, year of birth, age, country of nationality and country of birth of the migrant, and country or province of origin and destination of the migration. This statistical operation is integrated within the European legislative framework governed by *Regulation No 862/2007 on Community statistics on migration and international protection*.

The *Migration Statistics* is, moreover, one of the basic sources of information from which the *Population Figures* are prepared, with the results of both sources being totally consistent with the other, and, in addition, to the *Vital Statistics*, remaining consistent at all breakdown levels considered. In this way, consistency is guaranteed in all demographic statistical sources, and it enables the analysis of demographic change from the perspective of any of its components (births, deaths and migrations).

These statistics have been compiled since the year 2013, initially from the residential variations recorded in the Municipal Register database. Now the nature and administrative purpose of the Register make it necessary to carry out the statistical processing of the information recorded therein, for the purpose of attaining the best statistical approximation to the phenomenon.

The observation of variations in the Register might not be enough for the measurement of the migratory flows. Thus, this operation stems from the idea of incorporating into its calculation methodology as many additional sources of information and methodological improvements as are considered appropriate for better identifying and measuring the phenomenon of migration. These methodological improvements will be incorporated over the course of the next issues, and will be documented for researcher and user knowledge.

2 Definitions and concepts

Resident population: the population resident in a given geographical scope is defined as those persons who, at the time of the interview, have established their regular residence therein. The **regular residence** is understood to be¹ the place where a person normally spends her/his daily rest periods, regardless of temporary absences for leisure purposes, holidays, visits to relatives and friends, business, medical treatment or religious pilgrimage. Nevertheless, it is important to highlight that only regular residents in a district will be considered:

¹ Definition of regular residence established in Regulation 763/2008 of the European Parliament and of the Council on population and housing censuses and Regulation 1260/2013 of the European Parliament and of the Council on European demographic statistics.

- Those who, according to the previous definition, would normally have lived therein for a continuous period of at least 12 months.

- Those who, according to the previous definition, would have established their regular residence therein less than 12 months ago, but with the intention of remaining therein for at least one year.

Immigration²: action by which a person establishes her/his regular residence in a territory for a period that is, or is expected to be, at least twelve months in duration, having previously been a regular resident of another territory.

Emigration: Action by which a person who, having previously been a regular resident in one territory, ceases to have regular residence therein for a period that is, or is expected to be, at least twelve months in duration.

Migrant: person who takes part in a migration (immigration or emigration).

Foreign immigration: immigration in which the prior regular residence of the migrant was in a foreign country.

Foreign emigration: emigration in which the new regular residence of the migrant is in a foreign country, with the prior regular residence in Spain.

Inter-Autonomous Community immigration: immigration to a destination in an Autonomous Community in which the prior regular residence of the migrant was located in a Spanish municipality not belonging to said Autonomous Community.

Inter-Autonomous Community emigration: emigration with an origin in an Autonomous Community in which the next regular residence of the migrant is located in a Spanish municipality not belonging to said Autonomous Community.

Inter-provincial immigration: immigration with a destination in a province in which the prior regular residence of the migrant was located in a Spanish municipality not belonging to said province.

Inter-provincial emigration: emigration with an origin in a province in which the next regular residence of the migrant is located in a Spanish municipality not belonging to said province.

Nationality: legal link between an individual and a State, acquired by birth or naturalisation if it is by declaration or acquired by choice, marriage or other terms, according to the national legislation. This refers to the nationality at the reference date, classified as Spanish so long as the individual has said nationality, through s/he may have others as well.

Place of birth: country of regular residence of the mother at the time of birth.

² Definitions of immigration and emigration established by *Regulation No 862/2007 on Community statistics on migration and international protection*.

3 Calculation method

The Municipal Register records different types of variation, registrations and delistings, that are, or may be associated, with a residential change with an origin abroad, and therefore, with foreign migrations, or with a residential change with an origin in another region of Spain, and therefore, with domestic migrations. A significant part of such variations is registered by the interested party, while another part is carried out by the municipal administration itself. In short, this is as follows³:

- *Registrations (Delistings) due to Change of Residence* with origin (destination) abroad or another region of Spain.
- *Registrations due to Omission*, with or without origin abroad, caused either when a regular resident in a municipality requests registration in the Register thereof, stating that they do not know if they appear in the Register of another municipality or in the Register of Spaniards resident abroad, or when the Municipal Council ex officio states the registration, in the Register, of a person who regularly resides in the municipality and does not appear recorded in its Register, this being the administrative procedure established for this case.
- *Delistings due to Undue Registration*, carried out ex officio by the Municipal Council in order to resolve duplicities in the Register, or so as to delist those registrations that do not meet the requirement demanded of regular residence in the municipality⁴.
- *Delistings due to Expiry*, resulting from the application of the "immigration law" reform⁵ of 2003 that established the obligation of non-community foreign nationals without a permanent residence permit to renew their registration in the Register every two years, and the expiry of said registrations in the case of not renewing them, with the corresponding Municipal Council then having the power to execute, ex officio, the *Delistings due to Expiry* thereof⁶.

³ Joint Resolution of the President of the National Statistics Institute and the Director General for Territorial Cooperation, of 9 April 1997, dictating technical instructions for the Municipal Councils regarding the management and revision of the Municipal Register.

⁴ Article 54 of the Regulation on the Population and Territorial Demarcation of Local Entities, of 11 July 1986 (RD 1690/1986).

⁵ Organic Law 14/2003, of 20 November, reform of Organic Law 4/2000, of 11 January, on rights and duties of foreign nationals in Spain and on their social integrations.

⁶ Resolution of the President of the National Statistics Institute and the Director General for Local Cooperation, of 28 April 2005, dictating technical instructions for the Municipal Councils regarding the procedure for agreeing on the expiry of the registration records of non-community foreign nationals without permanent residence permits that are not renewed every two years.

Thus, the registration variations considered in order to estimate each type of migration are:

A. Foreign immigrations:

a. Of Spanish nationals:

- *Registrations due to Change of Residence* of Spanish nationals with origin abroad.

b. Of foreign nationals:

- *Registrations due to Change of Residence* of foreign nationals with origin abroad.
- *Registrations due to Omission* of foreign nationals without origin or with origin abroad.

B. Foreign emigrations:

a. Of Spanish nationals:

- *Delistings due to Change of Residence* of Spanish nationals with destination abroad.

b. Of foreign nationals:

- *Delistings due to Change of Residence* of foreign nationals with destination abroad.
- *Delistings due to Undue Registration* of foreign nationals.
- *Delistings due to Expiry* (foreign nationals).

C. Domestic migrations:

a. Of Spanish nationals::

- *Registrations due to Change of Residence* of Spanish nationals with origin in another province (inter-provincial) or Autonomous Community (inter-Autonomous Community).

b. Of foreign nationals:

- *Registrations due to Change of Residence* of foreign nationals with origin in another province (inter-provincial) or Autonomous Community (inter-Autonomous Community).

This must consider that the fact that registration in the Municipal Register is required as a necessary condition for exercising very basic rights, such as the right to health coverage, to schooling or for the future attainment of legal residence permits, leads to the Municipal Register recording the vast majority of the immigration flow from abroad.

Regarding emigration abroad, the monthly contrast of the Continuous Register with the records of the consular register abroad enables registering the emigration of Spaniards, but only if they register in the corresponding consulate. In the case of foreign citizens, there are few that request delisting in the Register of their municipality of residence at the time of their departure from Spain. Nonetheless, the actual mechanism for delistings carried out ex officio by the Municipal Councils for those cases of non-regular residence in the municipality or the launching of the expiry process of the registration records of non-community foreign nationals without a permanent residence permit, guaranteeing that emigration abroad of persons with foreign nationality not stated by the interested party in their municipality of residence, for the most part, ends up registering in the Register, sooner or later.

For community and non-community foreign nationals with a permanent residence permit, we must bear in mind the measures adopted by the Municipal Councils and the INE itself at the heart of the Registration Council. It was agreed to perform periodical checks of the continuity of the residence of these citizens, who are not obligated to renew their registration every two years. These checks have been carried out since March 2009, and are performed when movements have not occurred in a period of five or two years, depending on whether they are registered in the Central Foreign National Register or not⁷, and may result in opening a delisting file in the event that the Municipal Council so decides.

In fact, the methodology used in the *Migration Statistics* is based on the statistical use of the variations registered in the Municipal Register, but intends to improve the observation of the demographic phenomenon beyond the reality offered by the registrations and delistings that might be associated with true migratory movements.

This is the reason for proceeding to a statistical treatment of the registration variations, quantified as migratory flows, consisting of the following:

⁷Proposal for actions toward the periodical checks of the residence of those foreign nationals not obligated to renew their registration NO_ENCSARP (citizens of Member States of the European Union and other States that are part of the Agreement on the European Economic Area, States other than the above with a Community Residence Card or with a Permanent Residence Permit). Checking residence is carried out in the following cases:

A. For those that do not appear in the Central Foreign National Register: the latest register record with the intervention of the inhabitant is over two years old.

B. For those that appear in the Central Foreign National Register:

- The latest register record with the intervention of the inhabitant is over five years old.
- The residence card is expired or the registration certificate in the Central Foreign National Register was issued more than five years ago (if any exists).

1. Estimation of the date of occurrence of the emigrations abroad, quantified from the delistings carried out "ex officio" by the Municipal Councils, and not by the interested party (*Delistings due to Undue Registration* and *Delistings due to Expiry*): said estimation is carried out using a random assignation between the latest register variation of the same person prior to the delisting itself - which confirms their residence in Spain - and the date corresponding to the register delisting itself.

2. Expansion coefficient of the flows observed. It must be considered that there is a time lag between the date of occurrence of the migratory movement and the moment at which it ends up being recorded as a variation in the Register. As a result, at the time of estimation, we only have partial, rather than complete, information on the migratory movements that have occurred in the past and the more recent they are, the less information we have. Therefore, it is necessary to put into practice an estimation mechanism that allows for overcoming this limitation of the administrative register for a comprehensive description of the phenomenon in the most recent years and months. The estimation is basically carried out using the corresponding variations recorded in the Municipal Register at the time of estimation, once the processing described in 1) and 2) has been performed, multiplying them by an expansion coefficient that replicates the arrival rate of such information to the INE Central Services in previous years, basing this on the regularity observed in said arrival rate of the information.

To this end, the lag **variable is defined** r , as the number of months that a certain type of municipal register variation occurring in a given month and recorded in the Municipal Register takes in being confirmed and included as such variation in the centralised database of the Municipal Register. It is, then $\hat{V}_{m,a-1}$ the total variations of the type in question that are estimated to have occurred during month m of year $a-1$ (previously estimated with this same methodology) and $V_{m,a-1}^r$ the number of them included in the centralised database of the Municipal Register up until r months following month m . The **expansion coefficient** corresponding to month m of year a for lag r as quotient:

$$CE_{m,a}^r = \frac{\hat{V}_{m,a-1}}{V_{m,a-1}^r}$$

It is, then $V_{m,a}^r$ the total number of municipal register variations recorded in the Municipal register occurring in month m of year a and received in the INE Central Services up until r months following month m . Then, the estimation of the total variations occurring in month m of year a , $\hat{V}_{m,a}$, then results from:

$$\hat{V}_{m,a} = CE_{m,a}^r \cdot V_{m,a}^r$$

Such estimations are considered to be sufficiently precise when the expansion coefficient to be applied is less than 5.

The expansion coefficient replicates the registration rate in the Register during the previous year (a-1) for every register variation, except for Delistings due to Undue Registration and Delistings due to Expiry. Due to their nature, it takes longer for these delistings to be included in the centralised database of the Municipal Register. Therefore, in both cases, the expansion coefficient is built with the arrival rate from three years prior (a-3).

The estimation of the register variations for the months for which the previous procedure is not considered sufficiently precise is carried out using the trend and seasonal behaviour of the series of monthly variations estimated for each type of variation in the Municipal Register. To this end, a monthly growth coefficient of the series is defined, built as the convex linear combination of one trend coefficient and another seasonality coefficient. The former, deduced as an average, for the twelve previous months, of the growth coefficients for each month, over the sum of the two before it (trend coefficient), C_{tend} ; the latter, deduced as an average, for the same month of the two previous years, of the growth coefficients for each month, over the sum of the two months before it (seasonality coefficient). C_{est} . In this way, the growth coefficient used in the estimation results from the expression:

$$C = \alpha \cdot C_{tend} + (1 - \alpha) \cdot C_{est}, \text{ with } 0 \leq \alpha \leq 1.$$

Once again, the selection of α depends on the type of register variation observed.

In the case of Registrations due to Change of Residence with origin abroad and Registrations due to Omission of foreign nationals and Delistings due to Change

of Residence, $\alpha = \frac{1}{4}$ is taken, considering the seasonality observed in the series analysed of said variation types;

Nevertheless, in the case of Delistings due to Undue Registration and Delistings due to Expiry, $\alpha = 1$ is used, as such variations do not present any kind of seasonality;

Now the register variations identified with migratory movements resulting from step 1) are assigned a weighting factor resulting from the quotient between the estimated monthly total of variations from each type resulting from this point and the total thereof quantified following step 1).

3. Adjustment of the register information to the concept of migration. For the purpose of approaching the definition of migration as exactly as possible, the delistings and registrations produced in the register are crossed, with the objective of detecting register variations that might identify with foreign migrations of the same person, according to the aforementioned criteria. That is, they do not count - as migratory movements - those consecutive delistings and registrations by the same individual, occurring with less than 12 months' difference.

4. Imputation of the country of birth, country of nationality and country of origin or destination (this last variable only in the case of foreign migrations) of migratory flows resulting from 3) that have any of such variables blank, or with invalid values, which is carried out respecting the relative distribution of frequencies of the value to be imputed of each type of estimated migration within the group defined by:

- Foreign emigrations: emigrations with the same province, sex, nationality (Spanish/Foreign), country of nationality, country of birth and country of destination with valid values in all the variables.
- Foreign immigrations: immigrations with the same province, sex, nationality (Spanish/Foreign), country of nationality, country of birth and country of origin with valid values in all the variables.
- Domestic migrations: migrations with the same province of destination, province of origin, sex, nationality (Spanish/Foreign), country of nationality and country of birth with valid values in all the variables.

If the frequency of the estimated flows in the corresponding group were null, the imputation is to be conducted maintaining the relative distribution of frequencies of the variable to be imputed of the estimated migrations within the group defined when aggregating the last variable in the order indicated in the previous list, and this process is to be repeated if this were to happen again.

5. A final adjustment is carried out on the foreign migration data resulting from the above steps, consisting of eliminating those foreign emigrations by population groups that do not appear as residents in Spain, according to the *Population Figures* resident in the country at the beginning of each month, or adding the corresponding foreign immigrations if this was not possible, and guaranteeing total consistency between demographic flows and population stocks.

4 Dissemination of results

The *Migration Statistics* are disseminated twice a year, as of 2013, according to the following publication calendar:

- **June** of year $t + 1$: **provisional results for year t** (the corresponding results to the first half of the year update the flows that, for the same period, had been provided in the previous month of December).
- **December** of year $t + 1$:
 - o **Final results for year t** .
 - o **Provisional results for the first half of year $t + 1$**