

HUMAN FERTILITY DATABASE DOCUMENTATION: FRANCE

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1 General information

This report documents the data for France collected for the Human Fertility Database project (HFD), namely age-specific and monthly data on live births.

The time series of live births by age of the mother cover the years 1946–2022. The data on live births by calendar month are available for the period 1861–2022. Data on live births by age of the mother and birth order have been collected in France since 1998, but the HFD does not provide them to the data users because of their poor quality.

Population data since 1816 have been processed and documented in the Human Mortality Database (HMD, www.mortality.org). Data on the distribution of women by number of live-born children are not available for France.

All the input data used for generating the HFD output data and indicators are specified in Appendix 1.

1.1 Territorial coverage

The data on live births by age of the mother available for the period starting in 1946 pertain to France métropolitaine, i.e. to France without overseas departments (La Réunion, Martinique, Guadeloupe, and Guyane) and other overseas territories.

The data on live births by month for the period 1946 onwards cover the same territory as the age-specific birth counts. For the period before 1946, however, the territorial coverage of monthly birth counts varies. Table 1 summarizes these territorial changes and provides area codes used in the corresponding input data file (FRATNPmonthly.txt)².

1.2 Data collection and availability

The Institut national de la statistique et des études économiques (INSEE) is the main institution responsible for collecting statistical data, including population statistics, in France.

Detailed demographic data are freely available via a website managed by the INSEE www.insee.fr.

¹ With the help of materials provided by Magali Mazuy and Laurent Toulemon, INED.

² The area codes for France have been adopted from the Human Mortality Database (Glei et al., 2023).

Table 1: Territorial coverage of monthly birth count data, France

| Period | Territory | Area Code |
|--------------|---|-----------|
| 1861–1868 | Current territory | 90 |
| 1869–1913 | Current territory minus Alsace-Lorraine, which includes 3 <i>départements</i> (Moselle, Bas-Rhin, Haut-Rhin) | 30 |
| 1914–1919 | Current territory minus the areas affected by the military operation (Alsace-Lorraine, plus Aisne, Ardennes, Marne, Meurthe-et-Moselle, Meuse, Nord, Oise, Pas-de-Calais, Sommes, and Vosges) | 40 |
| 1920–1938 | Current territory excluding a few areas within the Alpes-Maritimes that were annexed after the Second World War | 50 |
| 1939–1942 | Current territory minus Alsace-Lorraine | 60 |
| 1943–1944 | Current territory minus Alsace-Lorraine and Corsica | 70 |
| 1945 | Current territory minus Alsace-Lorraine | 80 |
| 1946–present | Current territory | 90 |

2 Birth count data

The birth count data included in the HFD cover the period of 1946–2022. The data for 1946–1999 originate from official vital statistics publications; they were provided for the HFD by the Observatoire démographique européen (ODE). The ODE data for this period may slightly differ from the original data published by the INSEE. The discrepancies occur due to the cleaning of misprints performed by the ODE. The ODE birth counts are therefore considered to be more reliable than the official published data.

Birth counts cover the *de facto* national population: births to non-residents that occur in France are included, whereas births to French residents that occur abroad are not included (Eurostat, 2003). Since 1998, numbers of births also cover events reported and recorded in the overseas departments (DOMs).

In the years 1946 to 1974, some live births were incorrectly counted as stillbirths because the child died before registration. These false stillbirths³ were included neither in the official demographic publications, nor in the ODE data. Fabienne Daguët (INSEE) has collected these data on false stillbirths (Daguët, 2002). The number of false stillbirths was re-estimated by age and cohort of the mother and added to the original numbers of live births by Laurent Toulemon (INED). The revised data were included in the HFD with the data release as of 11 December 2012. The revised data also conform to the numbers of births by month and year provided by the INSEE.

The birth data from 2000 onwards were downloaded from the INSEE webpages.

3 Population count data

Population data, available for France since 1816, have been processed and documented in the Human Mortality Database (HMD, www.mortality.org). The data cover the *de jure* population (Glei et al. 2024).

It is noteworthy that since 1999, instead of a traditional census, France conducts a partial enumeration every year and annually revises population estimates. The HMD is updated with these revised population estimates when they become available (for further details, see Glei et al. 2024).

³ Annually, 2 to 4 thousand live births were classified as false stillbirths, which amounts to about 15–20% of all stillbirths, or about 0.4% of live births.

4 Specific details

4.1 Definition of live birth

Generally, the birth of a child must be reported to the *état civil* if the pregnancy lasted at least 180 days. Until February 1993, the birth was registered as live-born if the baby was living at the time of registration, regardless of whether the baby was born alive or not. The registration could happen up to three days after delivery, so the numbers of live births may have been under-registered for this period.

Since March 1993, a baby has been counted as live-born, even when dead at the time of registration, if there is a medical certificate stating that the baby was born alive. However, the circular from 30 November 2001 stipulates that the foetus must be at least 22 weeks old and/or weigh 500 grams in order to be regarded as a live birth.

In 2008, new legislation was enacted that redefined the still birth. Under Decree n°2008-800 of 20 August 2008, the distinction between live births and still births is based on the medical certificate of birth. The criteria for length of gestation or weight are no longer taken into account (INSEE 2012).

4.2 Age

All birth data for France are organized by age of mother and mother's year of birth (Lexis triangles).

4.3 Birth order

Since 1998, France vital statistics system shifted from collecting birth order data within marriage to collecting data by biological birth order. In practice, many local civil servants continued reporting data "within marriage", so the new system does not really correspond to neither old, nor new definition. The information on previous births is often missing in the data, and the births are then coded as first births. According to the civil registration data, the proportion of first births in France was around 50% for 1998; however, according to survey estimates, which are known to be more reliable, the proportion was 42%. The problem has not been rectified up to now. Thus, we do not provide data by birth order using civil registration data.

4.4 Data quality issues

There is a numerator / denominator mismatch between the occurrences and the exposures for France. Birth counts cover the *de facto* national population, while population counts cover the *de jure* population. The mismatch is negligible and should not significantly affect the fertility rates and the summary indicators.

In 2018 there were 1,942 births (0.3% of the total number of births) to parents who did not have residence in France but who registered their new-born child in France. The number was comparable in 2013–2017. In the year 1998, for which we have oldest similar information, this number was 1,558. We assume that in the previous years the number of children born to non-residents of France but included in the vital statistics of the country must be of a comparable rate.

The slightly zig-zag pattern of births by Lexis triangles, i.e. by mother's age and year of birth, in 1984–2022 might indicate that a small part of births could be allocated to the wrong triangle. However, there is no clear evidence and no clear pattern of wrong allocation, and this should not pose significant problem to HFD output computation.

4.5 Revision history

Changes with the June 2017 revision:

The release includes new data for 2014–2015. Due to small changes in the HMD population estimates, there are some changes (within a range of less than 1%) in the age-specific fertility rates for 2012–2013 as compared to the previous release as of 02-10-2015.

Changes with the September 2018 revision:

The release includes new data for 2016. Due to the revised HMD population estimates for 2013–2015 (see section 3), small changes occurred in the age-specific fertility rates for 2014–2015.

Changes with the September 2019 revision:

The release includes new data for 2017. Due to the revised HMD population estimates for 2015–2016 (see section 3), small changes occurred in the age-specific fertility rates for 2015–2016. Monthly births for 2013–2017 have been revised (the previous release did not include births to foreigners and thus the totals of monthly births differed from the yearly numbers).

Changes with the September 2020 revision:

The release includes new data for 2018. Due to the revised HMD population estimates for 2016–2017 (see section 3 above), small changes occurred in the age-specific fertility rates for 2016–2017.

Changes with the May 2022 revision:

The release includes new data for 2019. Due to the revised HMD population estimates for 2017–2018 (see section 3 above), small changes occurred in the age-specific fertility rates for 2017–2018.

Changes with the January 2023 revision:

The release includes new data for 2020. Due to the revised HMD population estimates for 2018–2019 (see section 3 above), small changes occurred in the age-specific fertility rates for 2018–2019.

Changes with the November 2023 revision:

The release includes new data for 2021. Due to the revised HMD population estimates for 2019–2020 (see section 3 above and Gleit et al. 2024), small changes occurred in the fertility indicators for 2019–2020.

Changes with the November 2024 revision:

The release includes new data for 2022. Due to the revised HMD population estimates for 2020–2021 (see section 3 above and Gleit et al. 2024), small changes occurred in the fertility indicators for 2020–2021.

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**APPENDIX 1
INPUT DATA USED FOR HFD CALCULATIONS**

BIRTHS

| Period | Type of data | Age range | Birth order | RefCode |
|---------------|--|------------------|--------------------|---|
| 1946–2011 | Annual number of live births by age of mother and mother's year of birth (Lexis triangles) | 11,..., 58 | – | 1, 2, 3, 4, 5, 6 |
| 2012–2022 | Annual number of live births by age of mother and mother's year of birth (Lexis triangles) | 12,..., 53, 54+ | – | 7, 15, 17, 19, 21, 23, 26, 28, 29, 31, 32 |
| 1861–2022 | Annual number of live births by month | – | – | 8, 9, 10, 11, 12, 13, 25, 27, 30, 33 |

FEMALE POPULATION: Exposure by age and year of birth

Female exposure population by calendar year, age, and year of birth (Lexis triangles) is estimated using data on population size and deaths from the Human Mortality Database, which is available at <http://www.mortality.org> or <http://www.humanmortality.de>.