

# HUMAN FERTILITY DATABASE DOCUMENTATION: THE NETHERLANDS

**Author: Kryštof Zeman<sup>1</sup>**

Vienna Institute of Demography, Austrian Academy of Sciences

**E-mail:** [krystof.zeman@oeaw.ac.at](mailto:krystof.zeman@oeaw.ac.at)

Last revision: 10 August 2018

## **1 General information**

This report documents data for the Netherlands collected for the Human Fertility Database project (HFD), namely age- and birth order-specific data on live births, data on total live births by calendar month, as well as data on the exposure population (women by age and/or birth cohort and the number of live-born children).

The time series of live births by age of mother and birth order cover the years 1950–2016: data for 1950–1994 come from the Observatoire démographique européen (ODE); while data for 1995–2016 have been extracted from the database of Statistics Netherlands (further referred to also as the CBS) for the purposes of the HFD project. Monthly data on births are available for 1840–1877 and 1893–2016 (also provided by the CBS). Population data since 1850 have been processed and documented in the Human Mortality Database (HMD, [www.mortality.org](http://www.mortality.org)). Data for the female population by parity are available from the population register of Statistics Netherlands for 1 January 1995 to 1 January 2009.

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

### **1.1 Territorial coverage**

Since 1830, the Netherlands has not experienced any territorial changes. The data refer to all persons entered into the municipal population registers (the *de jure* population).

### **1.2 Data collection and availability**

Statistics Netherlands (Centraal Bureau voor de Statistiek/CBS) was established on 9 January 1899. The CBS became the main institution responsible for collecting statistical data (including population statistics) in the Netherlands.

The statistical office also prepares and conducts population censuses, and processes and publishes census results. The first census of the Netherlands was conducted in 1795. From 1829 to 1971, population censuses were conducted regularly (every 10 years from 1849 to 1909, then in 1920, 1930, 1947, 1960 and 1971). The 1971 population census was the last one in the Netherlands. Since then, the enumeration of the population has been based solely on information from the population registers, population surveys or mini population censuses. However, the results of population censuses are not relevant for the HFD. Questions on parity in the censuses of 1960 and 1971 were asked only of ever-married women, and concerned only marital children.

The births data are based on information supplied to Statistics Netherlands by the municipal population registers (GBA).

---

<sup>1</sup> With the help of materials provided by Statistics Netherlands.

Detailed demographic data are freely available via an Internet database managed by Statistics Netherlands (<http://statline.cbs.nl>).

## 2 Birth count data

The birth count data included in the Human Fertility Database cover the period 1950–2016. The data for 1950–1994 originate from the official vital statistics publications and unpublished births statistics; they were provided by the Observatoire démographique européen. The data for 1995–2009 were obtained from the database of Statistics Netherlands, through personal email communication. Data for 2010–2016 were downloaded from the internet database (<http://statline.cbs.nl>). Because the database contain only births of birth order 1 to 4+, additional data on births of birth order 5+ for 2010–2016 were obtained through email communication (see Data Sources and References files for details). Missing data for the ages 49 and 50+ were retrieved from the Eurostat internet database (<http://ec.europa.eu/eurostat/data/database> and via R library ‘eurostat’).

The original data sheets from 1950 to 1962 did not include some live-born children who had deceased before the registration of their birth (around 300–400 annually). These numbers were subsequently entered into the birth statistics system, and also in the data assembled by the Observatoire démographique européen. In addition, the original data sheets in 1951–1955 included live-born children to Ambonese (Moluccan) refugees who were temporarily residing in Dutch camps (around 500–1000 annually). These numbers were subsequently excluded from the births statistics. See Table 1 for details.

**Table 1: Corrections made to data from original data sheets of the CBS**

Year	Original data sheets of CBS	Children deceased before registration	Corrections due to Ambonese persons	Resulting number of births included into HFD <sup>1)</sup>
1950	229,369	349		229,718
1951	228,631	364	-588	228,407
1952	232,596	360	-1,068	231,888
1953	228,609	350	-995	227,964
1954	228,892	328	-1,047	228,173
1955	229,911	344	-1,033	229,222
1956	231,204	288		231,492
1957	233,608	284		233,892
1958	236,543	316		236,859
1959	242,198	320		242,518
1960	238,789	339		239,128
1961	247,009	398		247,407
1962	245,739	411		246,150

Note: <sup>1)</sup> These numbers also correspond to the official total numbers of live births reported by Statistics Netherlands.

For the periods 1969–1982 and 1984–1986, the data obtained from the ODE were compared with the original data sheets from the CBS, and the missing numbers of births for ages 12–14 were included.

For the age category of 14 and below in 1951, the number of first births as reported by the ODE was corrected from 7 to 9 live births to conform to other sources (CBS and Eurostat).

Totals of live births by month of birth are available for 1840–1877 and 1893–2017 (for 1878–1892, only the totals by whole year are available).

The sum of births by months in 1865, 1875 and 1893 to 1935 is not equal to the given total of births in given year. The source for this discrepancy is unknown.

The sum of births by months in 1951 is 228,405 while the sum of births by age of mother is 228,407. The source for this discrepancy is unknown.

### **3 Population count data**

The annual age structure of women since 1850 is available in the Human Mortality Database ([www.mortality.org](http://www.mortality.org)).

The distribution of women by the number of live-born children is based on information received from the municipal population registers (GBA). The data refer to all of the persons entered into the municipal population registers (the *de jure* population).

The data on the female population included in the HFD are tabulated by age in completed years (0 to 99+) and the number of live-born children ever born alive, up to 20+.

#### ***Important quality issue:***

The register-based data on the numbers of children among women born before 1945 are not reliable, as the numbers are probably too low. This problem is related to the introduction of the automated population register, when it was decided that children born after 1965 had to be registered with both the mother and the father, whereas the children born in 1965 or earlier were often registered only with their father.

### **4 Specific details**

#### ***4.1 Definition of live birth***

For all periods, live births are defined as “a baby showing some sign of life after birth, regardless of the duration of pregnancy”.

#### ***4.2 Age***

Data for 1950–2009 are available by Lexis triangles. Data for 2010–2016 are available by both the mother's age in completed years (ACY) and the mother's age reached during the year (ARDY = year of birth minus birth cohort of mother). Data by Lexis triangles for 2010–2016 were reconstructed from the data by ACY and ARDY.

#### ***4.3 Birth order***

- Live births: The position of the child in the ranking of live-born children from a mother.
- Parity distribution: All children registered with the mother, including both biological and adopted children.

#### **4.4 Revision history**

##### **Changes with the October 2015 revision:**

The release included new data for 2010–2012. There are no other changes as compared to the previous release as of 1 November 2011.

##### **Changes with the June 2017 revision:**

Data for 2013 and 2014 were added. For the years 1995–2012, there are negligible changes (within a range of less than one birth) in the birth estimates by Lexis triangles at the tails of the age scale, which was caused by changes in the HFD script splitting births in the open age intervals -15 and 49+. This revision also corrects the original number of births of birth order 5+ in the age interval 49+, which previously were incorrectly assigned to the birth order 4. This concerns three births in 2010, one birth in 2011 and one birth in 2012.

##### **Changes with the August 2018 revision:**

Data for 2015 and 2016 were added.

#### **Acknowledgements**

Many thanks to Jean-Paul Sardon (ODE), and Elma Wobma, Pieter Korving, Trudy Lisci-Wessels and Hennie Roovers (all Statistics Netherlands) for providing the data and valuable information about data quality and definitions.

#### **References**

Jasilionis D. 2016. About mortality data for the Netherlands. Documentation report for the Human Mortality Database. Available online on [www.mortality.org](http://www.mortality.org)

**APPENDIX 1  
DESCRIPTION OF DATA USED FOR LEXIS DATABASE**

**BIRTHS**

Period	Type of data	Age range	Birth order	RefCode
1950–1994	Annual number of live births by age of mother, mother's year of birth and birth order (Lexis triangles)	(12, 13), -14, 15, ..., 49, 50+	1, ..., 7, 8+	1
1995–2009	Annual number of live births by age of mother, mother's year of birth and birth order (Lexis triangles)	-15, 16, ..., 48, 49+	1, ..., 7, 8+	2
2010–2016	Annual number of live births by age of mother, mother's year of birth and birth order (Lexis triangles)*	-15, 16, ..., 48, 49+	1, ..., 5+	7, 11, 15
1840–1877 1893–2016	Annual number of live births by month	–	–	2, 4, 8, 16

\* Note: Data by Lexis triangles for 2010–2016 were reconstructed from data by Lexis squares and data by Lexis parallelograms as described in section 4.2.

**FEMALE POPULATION: Distribution by age and parity**

Period	Type of data	Age range	Parity	RefCode
01.01.1995 – 01.01.2009	Women by age and parity	0, ..., 98, 99+	0, ..., 19, 20+	3

**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>.