

WORLD FERTILITY DATA 2015

METADATA

World Fertility Data 2015 presents data on age-specific fertility rates, total fertility and mean age at childbearing for 201 countries or areas of the world. The database includes data available as of November 2015 and covers the time period from 1950 to the present. Data for the time period before 1950 have been included as well, if readily available, but no systematic attempt was made to collect data prior to 1950 for all countries. The time series are available for download in Excel workbooks and are presented in online charts.

DEFINITIONS

Age-specific fertility rate measures the annual number of births to women of a specified age or age group per 1,000 women in that age group. An age-specific fertility rate is computed as a ratio. The numerator is the number of live births to women in a particular age group during a period of time, and the denominator is an estimate of the number of person-years lived by women in that same age group during the same period of time. It is expressed as births per 1,000 women. The following seven five-year age groups of mothers at time of birth are presented in the database: 15-19, 20-24, 25-29, 30-34, 35-39, 40-44 and 45-49.

Total fertility is the mean number of children a woman would have by age 50 if she survived to age 50 and was subject, throughout her life, to the age-specific fertility rates observed in a given year. The total fertility is expressed as the number of children per woman. Total fertility is computed as the sum of age-specific fertility rates divided by 1,000:

$$TF = \frac{5}{1,000} \sum_{a=15-19}^{45-49} f_a$$

Where f_a is the age-specific fertility rate for women in age group a .

Mean age at childbearing is the mean age of mothers at the birth of their children, calculated under the assumption that women are subject through age 50 to the age-specific fertility rates observed in a given year. It is computed as the sum of age-specific fertility rates weighted by the mid-point age of each age group, divided by the sum of the age-specific rates:

$$MAC = \frac{\sum_a x_a f_a}{\sum_a f_a}$$

where x_a is the mid-point of each age interval (17.5, 22.5, ... 47.5) and f_a is the age-specific fertility rate for women in age group a .

Unless otherwise specified, the reference period for the age-specific fertility rates presented in *World Fertility Data 2015* is the calendar year.

DATA SOURCES

Data on age-specific fertility rates can be obtained from three sources: civil registration systems, sample surveys and censuses. Data from civil registration systems are considered to be of good quality if they cover 90 per cent or more of all live births taking place within a country or area (for updated information on coverage see http://unstats.un.org/unsd/demographic/CRVS/CR_coverage.htm). Censuses and sample surveys are the main sources of data on fertility in countries that either lack a civil registration system or have a registration system where coverage is too incomplete to be utilized for statistical purposes.

Fertility data have been compiled from web sites, online databases, reports and other publications produced by national statistical systems, the United Nations or by other international and regional organizations. The main databases used are the Demographic Yearbook database of the Statistics Division of the Department of Economic and Social Affairs of the United Nations Secretariat (<http://data.un.org>), internal databases of the Population Division of the Department of Economic and Social Affairs of the United Nations Secretariat (<http://www.unpopulation.org>), Eurostat (<http://ec.europa.eu/eurostat/data/database>), the Human Fertility Database (<http://www.humanfertility.org>) and the Human Fertility Collection (<http://www.fertilitydata.org>). The main surveys utilized are the Demographic and Health Surveys (DHS), the Multiple Indicator Cluster Surveys (MICS), the Reproductive Health Surveys (RHS), the World Fertility Surveys (WFS), the Contraceptive Prevalence Surveys (CPS), and other nationally representative surveys.

DATA LIMITATIONS

Civil registration systems are considered the best source of information on age-specific fertility rates. However, estimates based on civil registration data are subject to limitations that depend on the completeness and coverage of birth registration. Comparability of data is also affected by the treatment of infants born alive but who died before registration or within the first 24 hours of life, the quality of the reported information relating to age of the mother, and the inclusion of births from previous periods. The population estimates used as denominators may suffer from limitations connected to age misreporting and coverage.

In countries where civil registration systems are lacking, surveys and censuses can be utilized to estimate age-specific fertility rates. Such information is generally obtained from questions regarding the number of live births that occurred in the household in the 12 months preceding the census or survey enumeration, commonly known as “recent births”, questions on the date of birth of the last child born alive in the household or, in the case of surveys, from collecting information on full retrospective birth histories. Censuses usually cover the whole country and the vast majority of surveys are designed to be nationally representative.

Compared to data from well-functioning civil registration systems, fertility estimates derived from survey data tend to be less reliable due to sampling errors and recall biases, since they are based on a sample of the population and rely on the ability of individuals to recall with accuracy an event that took place several months or years before the survey. Fertility estimates derived from data on recent births collected in censuses are also less reliable than estimates derived from complete civil registration systems because of the omission of some births, often resulting in underestimates of fertility. Information on (cumulative) parity collected through questions on children ever born is often used to adjust direct fertility estimates using variants of the Brass P/F method (Moultrie and others, 2013; United Nations, 1983).¹

¹ See demographicestimation.iussp.org and www.un.org/esa/population/publications/Manual_X/Manual_X.htm

Furthermore, whereas civil registration systems produce annual estimates, the availability of survey and census data depends on the timing of surveys and censuses. Censuses are generally conducted every ten years, while surveys are undertaken at varying, usually multi-year, intervals. Among large, cross-national survey programmes such as the Demographic and Health Surveys, surveys typically take place every three to five years.

This dataset includes both adjusted and unadjusted data. For adjusted data, estimates derived by several methods are included when available. Additional information on the type of method used to produce fertility estimates is included, when known, in the database. For data compiled directly from the census reports, only official estimates are included. Unadjusted data should not be taken at face value for providing information on the level of fertility in a country. However, estimates based on unadjusted data have been included in the dataset for analytical purposes and to reflect the uncertainty and variability of estimates derived from different data sources.

The charts in *World Fertility Data 2015* also show, for illustrative purposes, the latest estimates of fertility levels and trends published in the *World Population Prospects: the 2015 Revision*. The empirical data used for deriving estimates in *World Population Prospects: the 2015 Revision* are not necessarily the same as reported in *World Fertility Data 2015* due to the time lag between the two publications. Moreover, fertility estimates in *World Population Prospects: the 2015 Revision* may incorporate additional adjustments to account for cohort sizes in consecutive censuses.

Suggested citation: United Nations, Department of Economic and Social Affairs, Population Division (2015). *World Fertility Data 2015* (POP/DB/Fert/Rev2015).

REFERENCES

Moultrie, Tom and others, eds. (2013). *Tools for Demographic Estimation*. Paris: International Union for the Scientific Study of Population. Available from demographicestimation.iussp.org.

United Nations (1983). *Manual X: Indirect Techniques for Demographic Estimation*, Sales No. E.83.XIII.2. New York: United Nations.

United Nations, Department of Economic and Social Affairs, Population Division (2015). *World Population Prospects: The 2015 Revision* (<http://esa.un.org/unpd/wpp/DVD/>).