Population estimates by marital status and living arrangements QMI

Quality and methodology information for population estimates by marital status and living arrangements, detailing the strengths and limitations of the data, methods used, and data uses and users.

Contact:
Amanda Sharfman and Pamela Cobb
pop.info@ons.gov.uk
+44 1329 444661

Release date:
25 January 2024

Next release:
To be announced

Notice

15 October 2025

Please note that this quality and methodology information has been superseded by the Population estimates by marital status and living arrangements quality and methods guide, England and Wales.

Table of contents

1. Methodology background

2. About this quality and methodology information report

3. Quality summary

4. Quality characteristics of the population estimates by marital status and living arrangements data

5. Methods used to produce the population estimates by marital status and living arrangements data

6. Other information

1 . Methodology background

- National Statistic: yes
- Survey name: Labour Force Survey (household dataset)
- Frequency: Annual
- How compiled: Sample-based survey
- Geographic coverage: England and Wales
- Sample size: Approximately 40,000 households per quarter
- Last revised: 25 January 2024

2 . About this quality and methodology information report

This quality and methodology report contains information on the quality characteristics of the data (including the European Statistical Services five dimensions of quality) and the methods used to create it.

The information in this document will help you to:

- understand the strengths and limitations of the data
- learn about existing uses and users of the data
- reduce the risk of misusing data
- help you to decide suitable uses for the data
- understand the methods used to create the data

3 . Quality summary

Important points about the population estimates by marital status and living arrangements data

- Population estimates by (legal) marital status and living arrangements are National Statistics, which provide estimates of the resident population aged 16 years and over who are never legally married or civil partnered, married, civil partnered, widowed[1] or divorced[2], and also provide estimates of the cohabiting population.

- Figures are published annually by sex and by age groups for England and Wales combined and, since July 2017, they have also been published, for England and Wales separately.

- The latest release contains estimates for 2002 to 2020.

- The estimates are calculated by applying legal marital status and living arrangement distributions from the Labour Force Survey (LFS) to the mid-year population estimates for England and Wales.

- Historical population estimates by marital status are available from 1971 to 2010; these were produced using a different methodology to the latest releases so figures are not directly comparable.

Uses and users of the population estimates by marital status and living arrangements data

Population estimates by marital status and living arrangements have a number of uses, both direct and indirect, informing policy decisions at a national level. The estimates are used as denominators in the calculation of rates, for example, the rate of births within marriage. Population estimates by marital status and living arrangements are also of interest to other government departments, local government, private-sector businesses, special interest groups, academia and the general public.

Uses of the data include:

- policy and research
- parliamentary affairs
- press and campaigns
- forecasting around pensions and National Insurance funds
- academic research
- modelling and teaching

Strengths and limitations of the population estimates by marital status and living arrangements data

Strengths

- These data provide users with valuable insight into the changing patterns of marriage, civil partnership and cohabitation back to 2002.

- The mid-year population estimates are produced using a well-established demographic approach; the data sources used are the best that are available on a nationally consistent basis.

- The survey estimates are sourced from the Labour Force Survey (LFS), which provides robust and representative survey estimates used for labour market, economic statistics and family and household statistics.

- The use of survey estimates means that the marital status statistics are adaptive to changes in legislation relating to legal marital status (for example, the introduction of civil partnerships and same-sex marriages); however small sample sizes may mean that it takes a number of years before it is possible to produce robust estimates at lower geographies or by other demographic characteristics such as age.

- Confidence intervals and an indication of the size of the coefficient of variation are presented around the survey component of the estimates to give users an indication of the reliability of the estimates.

Limitations

- The LFS does not include the 2% of the population living in communal establishments such as prisons and nursing homes; these residents are assumed to have the same marital status and living arrangement distributions as those in private households.

- Estimates published since July 2015 use a new methodology so are not directly comparable with the population estimates by marital status previously published by the Office for National Statistics (ONS) for 1971 to 1981, 1986 and 1991 to 2010.

- Population estimates by marital status are available for England and Wales only; no comparable figures are available for Northern Ireland, and the latest estimates available for Scotland are for mid-2008.

- International comparisons of marital status are not straightforward for a variety of reasons, including differences in the legal marital statuses available to residents, the age structure of the population affecting the proportion within each legal marital status, and differences in the way the data is collected and presented (see coherence and comparability section for more details).

- The population estimates are subject to coverage error associated with the data sources used; no quality measures are provided around the population component of the estimates, and research into producing confidence intervals around population estimates is continuing.

Recent improvements to the population estimates by marital status and living arrangements data

- Since July 2017 (2016 estimates), estimates for England and for Wales have been published in addition to England and Wales combined figures.

- Since July 2016, estimates have been presented with confidence intervals (around the survey component of the estimate) and an indication of the size of the coefficient of variation (for the survey component of the estimate).

- Since July 2015, the method used to produce the estimates includes estimates of the cohabiting population, and people in civil partnerships; since July 2016, estimates of the married population broken down by opposite-sex and same-sex marriage and sex have been provided.

- In response to user feedback, for each release, estimates are now published back to 2002, rather than 2011.

Notes for: Quality summary

1. Widowed includes those who are a surviving civil partner.

2. Divorced includes those who have legally dissolved their civil partnership.

4 . Quality characteristics of the population estimates by marital status and living arrangements data

Relevance

This product is the official set of mid-year population estimates by marital status and living arrangements for England and Wales, and is published for 2002 to 2022. The published estimates meet the known user needs outlined in Section 3.

Since July 2017, separate estimates for England and Wales have been produced. We use the existing methodology to produce estimates which are robust, reliable and useful for our users. The age bands that are presented for England and for Wales have been adjusted to ensure that sample sizes are large enough to produce statistically reliable estimates. This means that the age bands available differ from those for England and Wales as a whole. Figures can be compared by grouping the England and Wales combined age bands into the broader age bands used for the individual countries. Note that because of the methodology used, estimates for England and Wales separately will not sum to England and Wales as a whole.

Over recent years there have been changes in society which affect these estimates, such as the introduction of same-sex civil partnerships, marriage of same-sex couples, most recently opposite-sex civil partnerships, and the increasing numbers of people getting married abroad. Cohabitation has become much more common, either as a precursor or an alternative to marriage. In 2014, we conducted an internal review to ascertain whether the current output was still fit for purpose, including comparing the estimates against the results of the 2011 Census.

As a result of this review, we proposed a change in both the method used to produce the estimates, and in the tables to be published. This included a proposed table about living arrangements which would help to identify the size of the cohabiting population. A consultation was conducted in 2014 to understand the impact of the proposals on people who use these statistics.

Full details of the process undertaken to review the methodology and changes that were made are available.

As a result of the responses made by users to the consultation, the population estimates by marital status and living arrangements were:

- published including data from 2002 onwards rather than only from 2011
- published for England and Wales only and not at UK or Great Britain level
- published including more detailed living arrangement categories rather than more detailed age groups in the living arrangements table

The consultation and response to the consultation are both available.

Further to provisions set out in the Civil Partnership Act 2004 and the Civil Partnership (Opposite-sex Couples) Regulations 2019, opposite-sex couples in England and Wales became eligible to form a civil partnership from 31 December 2019. Opposite-sex civil partners are included in the estimates of the population in civil partnerships for the mid-years ending 2020 onwards. Consideration will be given as to how best to incorporate opposite-sex civil partnerships in the future, dependent on the number of opposite-sex civil partners sampled as part of the Labour Force Survey.

Accuracy and reliability

The mid-year population estimates are produced using a well-established demographic approach called the cohort component method. This involves combining information from a number of data sources including the previous census, survey data and administrative registers. The data sources used are the best that are available on a nationally consistent basis down to local authority level, but the estimates are subject to the coverage error associated with these sources. Information from administrative registers such as the numbers of births and deaths are considered to be very reliable. Products describing the accuracy of the estimates are detailed in Mid-year population estimates Quality and Methodology Information (QMI).

The survey estimates are sourced from the Labour Force Survey (LFS), which provides robust and representative survey estimates used for labour market, economic statistics, and family and household statistics. Sampling and non-sampling error, along with information on measuring error, can be found in the Labour Force Survey (LFS) QMI. More information can be found in our LFS performance and quality monitoring reports and LFS user guide.

Output quality

Surveys, such as the Labour Force Survey (LFS), provide estimates of population characteristics rather than exact measures. In principle, many random samples could be drawn from the population and each would give different results since each sample would be made up of different people who would give different answers to the questions asked on the LFS. The spread of these results is the sampling variability, which generally reduces with increasing sample size. Confidence intervals can be used to present the sampling variability. A 95% confidence interval can be interpreted as the interval within which 95 times out of 100, the true value will lie if the sample were repeated 100 times. Pragmatically, if you assume the confidence interval contains the true mean, you will be wrong 5% of the time.

For users to gain an understanding of the level of accuracy of the population estimates by marital status and living arrangements, the estimates in the reference tables, from July 2016 onwards, are presented with confidence intervals (around the survey component of the estimate) and an indication of the size of the coefficient of variation (for the survey component of the estimate). The coefficient of variation (CV) indicates the robustness of each estimate. This is calculated by dividing the estimate by the standard error.

Research into producing confidence intervals around population estimates is continuing. Should these become available in the future, users would be able to gain an understanding of the overall accuracy of the population estimates by marital status and living arrangements, rather than only the survey component.

Coherence and comparability

We publish population estimates by marital status and living arrangements for England and Wales to meet user need, as described in the Relevance section of this document. There is currently no such user need identified by the Northern Ireland Statistics and Research Agency (NISRA) or National Records of Scotland (NRS) for Northern Ireland or Scotland. Therefore, comparable estimates for the UK as a whole are not currently compiled.

NRS has previously published equivalent estimates for Scotland up to and including estimates for mid-2008 which were produced using similar methods to the old methodology used for England and Wales.

However, following a user consultation, publication of population estimates by marital status was suspended and demand for these estimates is currently being reviewed by NRS. Further information can be found on the NRS webpage for marital status population estimates.

We will monitor the demand for population estimates by marital status and living arrangements for the UK. If there is sufficient demand, estimates for the UK can be constructed using the new methodology introduced for England and Wales.

International comparisons of marital status are not straightforward for a variety of reasons. Firstly, the types of legal marital status available to residents vary across countries, particularly with regards to same-sex unions and registered partnerships of various types. Secondly, some countries collect data on those who are separated or of unknown marital status, whereas others will combine these within other marital status categories. Thirdly, percentages in different marital status groups are likely to be affected by countries' age structures, given that marital status varies considerably by age. A crude comparison of marital status across countries was published in July 2015.

Population estimates by marital status have been published previously for 1971 to 1981, 1986 and 1991 to 2010. These estimates were derived using a cohort component method and the best data sources available at the time. Since 2015, estimates have been published back to 2002 based on a new methodology. The latest estimates are therefore not directly comparable with historical data. The current method is described in Section 5: Methods used to produce the population estimates by marital status and living arrangements data.

Following a census, the back series of population estimates by marital status have traditionally been revised to ensure a comparable time series. The estimates (using the old methodology) for 2002 to 2010 were not revised following the results of the 2011 Census.

Estimates for 2002 to 2010 using the new methodology (published for the first time in July 2015) were revised following the results from the 2011 Census. Our Comparison of population estimates by marital status dataset, showing the differences between the estimates using the two different methodologies, was published alongside the estimates in July 2015.

Estimates for 2012 to 2020 have also now been revised, following the results from Census 2021.

Concepts and definitions

Although the population estimates by marital status and living arrangements are not explicitly required by law, they are consistent with our duty under Section 5 of the Census Act 1920 to collect and publish “any available statistical information” with respect to the number and condition of the population between censuses. The statistics also comply with the Code of Practice for Official Statistics.

The population estimates by marital status and living arrangements refer to the mid-year (30 June) usually-resident population aged 16 years and over, and are available for England and Wales (combined and separately) by sex and age groups. The population estimates by marital status refer to legal partnership status – whether the adult is never married or civil partnered, married, civil partnered, widowed or divorced. Separated couples are considered to be married or civil partnered (having not legally divorced or dissolved a civil partnership), and cohabiting couples retain their individual legal marital status whether that is never married or civil partnered, married, civil partnered, widowed or divorced, within the marital status table. The bulletin focuses on the population aged 16 years and over. All analyses and percentages presented exclude those aged under 16 years. Marital status estimates for those aged 0 to 15 years are included within the datasets accompanying this release. The latest data are for 2022. Therefore, we consider all those aged under 16 years to be never married or civil partnered in line with the legal age of marriage or civil partnership in England and Wales. From February 2023, those aged 16 and 17 years are no longer able to marry or enter a civil partnership in England and Wales. This is because of the introduction of the Marriage and Civil Partnership (Minimum Age) Act 2022. This change will be taken into account in future releases.

Living arrangements are defined as either living in a couple or not living in a couple. Within the living arrangements table, those living in a couple are broken down into married (including civil partnered) or cohabiting couples; cohabiting couples are then further broken down by grouped legal partnership status. Those not living in a couple are also broken down by grouped legal partnership status. Those aged under 16 years are assumed to not be living in a couple and so are excluded from the analysis in the statistical bulletin.

The age groups used within the reference tables have been based on the GSS harmonised standards.

This publication does not include estimates of couples who are living apart together (LAT). Couples who are living apart together can be divided into two groups.

In the first group, the person in the household has a legal marital status other than married or civil partnered, and is in a relationship with someone who is outside the household. Currently, data surrounding these relationships are not available through the Labour Force Survey and other household surveys. This is because they only collect information on people living in the household; we acknowledge the growing existence of these relationships and the need to collect and supply data on them.

In the second group, the person in the household has a legal marital status of married or civil partnered, but their partner is living outside the household, for example because of work, prison or being in a care home. Current survey questions and coding would mean these individuals would appear in the marital status table in the “married” or “civil partnered” category and in the living arrangements table in the “not living in a couple: previously married or civil partnered” category; we make this clear to users in a footnote to the table.

Geography

Population estimates by marital status and living arrangements are produced by the Office for National Statistics (ONS) for England and Wales combined, and England and Wales separately.

Marital status estimates for geographies lower than England and Wales are not produced routinely.

The availability of comparable estimates internationally and for other countries of the UK is outlined in the section on coherence and comparability.

Accessibility and clarity

- The recommended format for accessible content is HTML5 and/or PDF/A for narrative, charts and graphs.
- Data should be provided in open, reusable and machine readable formats such as CSV and ODF.
- An option to download or print the content should also be available.

More details on related releases can be found on the release calendar on GOV.UK. If there are any changes to the pre-announced release schedule, public attention will be drawn to the change, and the reasons for the change will be explained fully.

In addition to this quality and methodology report, quality and methodology information is included in each statistical bulletin.

For information regarding conditions of access to data, please refer to the following links:

- Terms and conditions (for data on the website)
- Accessibility

Timeliness and punctuality

Population estimates by marital status and living arrangements for England and Wales are usually published annually in July. For a particular mid-year they become available around 13 months after 30 June of the reference year.

The time lag and the publication date for population estimates by marital status and living arrangements are influenced by the availability of the mid-year population estimates, availability of the Labour Force Survey (LFS) April to June quarter, and the time that is required to process the data and calculate the estimates.

The Labour Force Survey (LFS) datasets are reweighted periodically to account for the latest available population estimates and projections. This means that there are small revisions to previously published estimates.

Our Population estimates by marital status and living arrangements, England and Wales: 2022 bulletin adds the 2021 and 2022 estimates to the previously published 2002 to 2020 dataset.

Following Census 2021, we have carried out reconciliation and rebasing of the mid-year population estimates. This means that estimates from 2012 to 2020 have also been revised.

5 . Methods used to produce the population estimates by marital status and living arrangements data

Main data sources

The Labour Force Survey (LFS) household dataset is used in the production of the estimates. The household dataset differs from the person-level dataset in the way that the weighting is applied to the sample. The household dataset ensures that the weight given to each member of the same household is the same. The person-level dataset, which is more commonly used for information on the labour market, includes only individual weights, which usually differ between members of the same household. The Labour Force Survey User Guide: Volume 8 suggests the use of the household dataset when analysing people by marital or cohabitation status; this is to ensure consistency of the results.

The LFS is a quarterly social survey of the resident population in private households in the UK. It covers people in private households, NHS accommodation, and students in halls of residence whose parents live in the UK. Such students are included through proxy interviews with their parents. The main purpose of the survey is to provide information on the UK labour market, but it includes data on a variety of other variables, such as marital status and living arrangements. The survey does not cover the 2% of the population who live in communal establishments such as prisons and nursing homes. Before January 2008 the LFS only interviewed people (migrants) who were in the UK for more than six months. Since January 2008 this residency requirement has been removed so the coverage of short-term migrants has been improved.

Each quarter's LFS sample is composed of 41,000 households containing around 100,000 individuals, and is made up of five waves. Each wave is interviewed in five successive quarters, so that in any one quarter, one wave will be receiving their first interview, one wave their second and so on, with one wave receiving their fifth and final interview. So, there is an 80% overlap in the samples for each successive quarter, and the samples for the sixth quarter and the first quarter have no common elements. The LFS household datasets are produced on a quarterly basis each year (January to March, April to June, July to September and October to December). Population estimates by marital status and living arrangements use the April to June quarter each year as this includes the mid-year point (30 June). Other publications, such as Families and the labour market and Working and workless households also use the April to June quarter of the LFS.

More detail on why the LFS was chosen as the best source of data to use for this publication can be found in the Other information section.

How we analyse the data

Weighted estimates from the Labour Force Survey (LFS) by age group and sex are calculated for each year, and for each legal marital status or living arrangement. Although the LFS is a survey of the UK, only estimates for England and Wales are used in the production of population estimates by marital status and living arrangements. The estimates from the LFS are then converted into percentages for each age group. Mid-year population estimates for each year are then grouped into the corresponding age groups. Finally, the percentage of people in each age group by marital status or living arrangement is multiplied by the number of people in the mid-year population in the corresponding age group to obtain the final estimates.

The annual mid-year population estimates provide the number of people by single year of age and sex who are usually resident in England and Wales on 30 June of the reference year. We calculate and usually publish them annually in June. The data published each year refer to the previous mid-year. They are the official population estimates for England and Wales.

The method that has been described above can be explained further using an example: if 95% of men aged 20 to 24 years are never married or civil partnered and 5% are married according to the LFS, and we know that there are two million men aged 20 to 24 years in England and Wales, we can estimate that 1.9 million men aged 20 to 24 years are never married or civil partnered and 100,000 are married.

Estimates based on sample sizes of less than three are suppressed in published tables but the tables have been designed to minimise the need for suppression by combining age groups when necessary. Suppression may be needed for small groups of people, such as those in same-sex marriages in the early years following the introduction of legislation enabling same-sex couples to marry.

How we quality assure the data

Annual mid-year population estimates are used in their published format and will have already been subject to rigorous quality assurance procedures. The Labour Force Survey (LFS) dataset used in the production of the population estimates by marital status and living arrangements is also used for the production of the Families and Households release. Once LFS household datasets are received for use in both publications, quality assurance is carried out on the most commonly used family and household type variables by tabulating one variable against another. The edit rules which are applied include verifying that:

- lone parents do not have a partner in the household
- no under 16s are married or living in a couple
- nobody is in a civil partnership before 2005
- children are not heads of families

If any substantial failures are found, these are referred to the Social Survey Division in the Office for National Statistics (ONS) for validation and correction. If failures are found for a very small number of cases, these are manually corrected by the families team before estimates of marital status and living arrangements are published. Visual quality assurance is also carried out on the data; this includes checking that:

- marital status distributions are plausible by age
- there are no large year-on-year changes
- totals sum to the annual mid-year population estimates

How we disseminate the data

Population estimates by marital status by single year of age and sex are available online for 1971 to 1981, 1986 and 1991 to 2010 (based on the old methodology).

Population estimates by marital status and living arrangements are available by age group and sex online for 2002 to 2022 (based on the new methodology).

Links from the release calendar make the release date and location of each new set of estimates clear. The estimates can be downloaded free of charge in Microsoft Excel format and are available from the population estimates by marital status and living arrangements webpage. A statistical bulletin usually accompanies each publication. The underlying data for the charts and tables in the bulletin can be downloaded. Supporting documentation is also available on the population estimates by marital status and living arrangements webpage.

Other data not published on the web are available on request by emailing pop.info@ons.gov.uk. Metadata describing the limitations of the data for more detailed tables are provided with each individual request. Most queries can be answered from the website datasets or supporting methods documents. Any additional enquires regarding the population estimates by marital status and living arrangements can be made by emailing pop.info@ons.gov.uk.

How we review the data

Future revisions to the population estimates by marital status and living arrangements may be required to reflect occasional or post-census revisions to the national mid-year population estimates. This will also impact upon the weighting used for the LFS. This is in line with the ONS revision policy for population statistics.

6 . Other information

Why we chose the Labour Force Survey for this publication

The population estimates by marital status and living arrangements are produced using the Labour Force Survey (LFS) and the mid-year population estimates. When deciding the best source of data to use for this publication, we considered using the LFS, the Annual Population Survey (APS) and the Integrated Household Survey (IHS). Survey estimates from the IHS were compared with data from the 2011 Census to ensure that survey estimates were a robust source for the production of the population estimates by marital status and living arrangements. For a more detailed overview of the process we went through to select the new methodology, please see our article Details and results of the internal review leading to changes in the methodology.

Annual Population Survey

The APS combines data from the LFS and the English, Welsh and Scottish Labour Force Survey boosts. The APS provides similar information to the LFS and has a larger sample size, so is more commonly used for estimates for smaller geographical areas, such as local authorities. The APS is available annually from 2004 onwards.

Integrated Household Survey

The IHS is a composite survey combining questions asked on a number of ONS social surveys to produce a dataset of core variables, including those on marital status and living arrangements. In 2009 to 2010 the IHS was created from six ONS surveys including the APS and the General Lifestyle Survey (GLF). After April 2011, the number of surveys contributing to the IHS dataset fell, as two surveys could not continue asking the core questions. The GLF finished at the end of December 2011, and so the IHS comprised only the Living Costs and Food Survey (LCFS) and the APS. Following a user consultation in 2014, we dropped the core questions from LCFS. This effectively ended the IHS as it now consists only of the APS. The IHS had a larger sample size than the LFS, but a shorter time series because data are only available from April 2009 onwards. Therefore, the IHS as a data source was dropped.

Annual Population Survey and Labour Force Survey

Once the IHS had been dropped, the APS and the LFS were taken forward as the survey options. We looked at four main factors when deciding the best source of data:

- timeliness – the LFS is more timely than the APS, with the quarterly household dataset being available two to three months after the April to June reference date; the equivalent APS dataset is available around nine months after the January to December reference date

- sample size – the LFS has a sample size of approximately 40,000 households; the APS has a sample size of 143,000 households

- quality – although the APS has a larger sample size than the LFS, the stability of the percentages produced does not differ greatly between the two sources

- time series – the LFS has a longer time series than the APS, with comparable time series going back to 1996; APS data are only available from 2004

These factors were evaluated and, on balance, we decided that the LFS was the best source because the population estimates by marital status and living arrangements would be timely and robust. Marital status distributions produced from interviews in the April to June quarter will be used to represent the mid-year as the quarter includes the mid-year point (30 June).

We decided to apply the distributions from the LFS data to the mid-year populations so that estimates would sum to the mid-year population totals.

The LFS does not cover the population living in communal establishments. We acknowledge that marital status distributions are different for those living in communal establishments and those living in households. Marital status data from Census 2021 for those living in communal establishments suggests they are more likely to be never married or in a civil partnership or widowed than those living in households. However, both the 2021 and 2011 Census showed that a vast majority (98%) of the population live in a household in England and Wales. This means the marital status distribution of the household population is very similar to that of the total population.

Census 2021 shows that fewer than 3% of people aged 65 years and over live in communal establishments, and at age 85 years and over it is 11%. Although we are not capturing the marital status of those living in communal establishments, because of the small proportions living in these, even at the oldest ages the marital status estimates will apply to the vast majority of the population. In addition, census data show that the proportion of older people living in communal establishments has decreased between 2001 and 2021. More older people are staying in private households until later ages.

Useful links

Population estimates by marital status and living arrangements webpage for links to:

Data tables
Statistical Bulletin
Population estimates by marital status and living arrangements information document

Population estimates by marital status (old methodology) webpage for links to:

Data tables
Statistical Bulletin
Population estimates by marital status: methodology
Population estimates by marital status: methods and availability across UK countries

Mid-year population estimates webpage

Mid-year population estimates QMI

Population estimates methodology guide for the mid-2012 to mid-2016 population estimates

Methodology used to produce the marital status population projections methodology article

Labour Force Survey user guidance

National Records of Scotland (NRS) webpage for marital status population estimates

How to cite this document

Office for National Statistics. 2020. Population estimates by marital status and living arrangements QMI [Online]. Titchfield: Office for National Statistics.