

Summary Quality Report

Coverage: Northern Ireland

Theme: Population

Mid-year Population Estimates for Northern Ireland



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1. Introduction

Context for the quality report.

Population estimates for Northern Ireland, areas within Northern Ireland are published annually and approximately one year in arrears. The mid-year population estimates relate to the usually resident population, including long-term migrants (people who change their country of usual residence for a period of 12 months or more), on 30th June each year.

Population estimates at the Northern Ireland level are derived using the 'cohort-component' method. This method uses the most recent Census of the population: each year, the population is 'aged-on' by one year with the number of births in the year added and the number of deaths in the year subtracted. An adjustment is also made for migration. Subsequent mid-year population estimates then use the previous year's figures as the base.

Super Output Areas (SOAs) are the building blocks used to create population estimates for areas within Northern Ireland ([see Figure 1](#)). Population estimates at the SOA level are calculated from an average of two statistical methods: the cohort-component method, stated above, and the ratio change method. In the ratio change method, selected indicators of population change are used to update the population from an earlier period. The method assumes an unchanged relationship over time between the chosen indicator and the true population. For example, if the chosen indicator increases by five per cent over the period, the base population is also increased by five per cent. As both methods are equally robust, the average of both methods is taken for the final figures. Further information can be found in the [Methodology Report](#).

A number of data sources are used to compile the population estimates, including:

- General Register Office (GRO) Registers of Births and Deaths;
- Medical Card Register (NHAIS);
- Higher Education Statistics Authority (HESA) – Enrolments at Higher Education;
- Her Majesties Revenue and Customs (HMRC) - Child Benefit Database;
- School Information System – School Census;
- Department for Communities - Benefit Computer Systems;
- Ministry of Defence – Armed Forces data

Quality assurance of these data sources for the production of population estimates has been undertaken and details of such can be found within the population statistics [administrative data quality document](#).

The mid-year population estimates are essential building blocks for a wide range of National Statistics. They are used as a base for other secondary population statistics such as population projections, population estimates for those aged 85 and over and population estimates for small areas. They are also used in the weighting of survey estimates, such as the Labour Force Survey and other social surveys to ensure that

they are representative of the total population. Population estimates are also widely used as denominators for rates or ratios, for example, in health and economic indicators. In addition, population estimates are used to allocate public funds to the Northern Ireland Executive through the [Barnett formula](#).

The [mid-year population estimates](#) are the official set of population estimates for Northern Ireland. These estimates are comparable to official estimates produced by the three other UK constituent countries, the regions of England, Scotland and Wales.

2. Relevance

The degree to which the statistical product meets the user needs in both coverage and content.

As stated, the [mid-year population estimates](#) are the official set of population estimates for Northern Ireland. These estimates meet the known needs of our users as described in this section.

In terms of coverage, the mid-year population estimates are produced for an array of administrative and statistical geographies in Northern Ireland to meet the needs of our broad range of users. Estimates are currently produced for Northern Ireland, Local Government Districts (current and former), Parliamentary Constituencies, Health and Social Care Trusts, former Health and Social Services Boards, former Education and Library Boards, former Nuts III Level areas, former Electoral Wards and Super Output Areas (SOAs). In addition, population estimates are produced for Deprivation deciles. For each of these geographies a sufficient time series of data is supplied to allow users to examine population change; details of which are outlined on the [2020 mid-year population estimates main webpage](#).

In relation to content, the mid-year population estimates are available unrounded by single year of age and gender to allow users to conduct their own analysis. However, this excludes SOAs and former Electoral Wards, which have been aggregated into broad age bands. The reason single year of age estimates are not available for these two geographies are twofold:

1. Estimates have not been quality assured at this level of detail.
2. The small numbers involved are not considered sufficiently large enough for a robust application of our ratio change methodology.

Additional supporting data published with the population estimates comprises components of population change which provide information on population events such as births, deaths, internal migration, international migration and other changes between the reference year and previous years. Furthermore, data tables detailing population densities and median ages provide an extra element to aid user analysis of mid-year estimates.

Mid-year population estimates have a wide variety of users within central government as well as being used by local authorities, health bodies, other public bodies,

commercial companies and individuals in the private and academic sector. These users can be categorised into two broad groups:

1. Users for which the absolute numbers are important – this may be in terms of allocating funds from central government under the Barnett formula, planning services, health services and providing a base for population and housing projections.
2. Users for which the population figures are used as denominators, for example, calculating weights for survey data, birth and death rates for population projections and the calculation of social and economic indicators.

3. Accuracy and Reliability

The proximity between an estimate and the unknown true value.

Population estimates are produced using information from several data sources including the previous census, survey data and administrative registers. The data sources used are deemed to be the best that are available nationally, however, the estimates are therefore subject to the coverage and error associated with these data sources. A full quality assurance of the data sources which contribute to the mid-year population estimates is available from the [administrative data quality document](#).

Migration is the most difficult component of population change to measure and therefore a source of potential inaccuracy in the estimates. Migration *inflows* are estimated from the Medical Card Register, which is a list of patients registered with a family doctor. It is recognised that the Medical Card Register is deficient in recording young adult males; therefore the age distribution of young adult males is adjusted to be similar to the young adult female distribution.

Similarly, migration *outflows* are measured from the Medical Card Register. Previous research has shown that not all outflows are measured fully by the Medical Card Register and therefore de-registrations (outflows) are scaled up by an additional 67 per cent (i.e. the assumption is that only 3 out of 5 persons who leave Northern Ireland to go abroad deregister with their family GP). As with inflows, it is recognised that the administrative data is deficient in recording young adult males, therefore the age distribution of young adult males is adjusted to be similar to the young adult female distribution.

The decennial census population estimate forms the baseline for mid-year population estimates going forward. As each year from the baseline passes the accuracy of the population estimates slightly diminishes. However, the release of the census every 10 years offers the best opportunity to review the population estimates and revise their accuracy. The last review and rebasing of the population estimates was undertaken after the release of the 2011 census results. Details on the accuracy of the population estimates between 2001 and 2011 have been outlined in the [rebased population and migration estimates statistical report](#).

The 2020 mid-year population estimates are the final round of population estimates which are based on the 2011 census. Following the release of Census 2021 results in 2022 a similar review and rebasing exercise of the population estimates from 2011 to 2021 will take place. The 2021 population estimates will be the first in the series which are based on the results of the 2021 census.

Consideration should be given to the constraining practices used in the production of mid-year estimates. Although estimates for areas within Northern Ireland are produced from an average of the cohort component and ratio change methods, the overall population totals for these areas are constrained to the established Northern Ireland total. As a result, this constraining process inherently means that any inaccuracies in the Northern Ireland population estimate will affect the sub national geographies. Additionally, although mid-year population estimates are available unrounded, estimates should not be taken with this level of accuracy. At best, the precision of the population estimates could be considered to be no better than to the nearest 100.

The impact of the Covid-19 pandemic on population estimates

The mid-2020 population estimates cover the period July 2019 to June 2020, a timespan which includes the first few months of the coronavirus pandemic. Given the considerable disruption caused by the pandemic it is important to outline what impact this has had on the 2020 mid-year population estimates.

Two of the most important administrative sources in estimating the population are the number of births and deaths registered in a mid-year period, which make up the natural change component of change.

Following the national lock down in March 2020 the legal requirement to register a birth was suspended and registration offices were closed to the public. As a result, the number of birth registrations in Northern Ireland dropped significantly. However, as mid-year population estimates are released one year in arrears this has given the GRO sufficient time to work through the back log of birth registrations from mid-2019 to mid-2020. Therefore, the number of births included in the components of change is likely to reflect the number of births over the year.

For deaths, an [emergency process](#) has been put in place to ensure all registered deaths are accounted for. Therefore, the number of deaths included in the components of change is likely to reflect the number of deaths over the year.

The migration component is measured through the medical registration/deregistration process. This process has been severely disrupted by the impact of the Covid-19 pandemic. During the period March 2020 to June 2020 there was a significant decrease in the number of registration requests processed by Business Services Organisation (BSO) linked to remarkably low numbers of registration requests received from GP Practices. This has likely arisen from Covid-19 related travel restrictions which disrupted the free movement of people to and from Northern Ireland coupled with a general reluctance from the population to engage with the health service unless absolutely necessary to avoid it being overwhelmed. This latter reason, in particular, may have meant that patient movements within NI may not have been notified to GPs, in the form of new registrations, in as timely a fashion as normal.

As a result, there has likely be an impact on our ability to estimate accurately the true number of people who have migrated to/from Northern Ireland from mid-2019 to mid-2020.

Another consideration we have taken into account for the 2020 mid-year population estimates is where we should place students during the period from March to June. During a normal round of mid-year population estimates we place students at their term time address which we derive from a combination of BSO and HESA data. We have taken the decision to use a methodologically consistent approach for the 2020 mid-year population estimates and keep students at their place of study rather than migrate them back to their home address. The first reason for this is that there was considerable uncertainty around when restrictions might be eased that may have dissuaded students from moving back to their home address. Additionally, considering the aforementioned GP registration issues there may not have been sufficient time for students to register elsewhere.

4. Timeliness and Punctuality

Timeliness refers to the time gap between publication and the reference period. Punctuality refers to the gap between planned and actual publication dates.

Mid-year population estimates for Northern Ireland are published annually in June each year. For a particular mid-year (30th June) they are available roughly 12 months after the reference date. This time lag reflects the availability of the data sources that measure the components of population change over the year and the time required to process data and calculate estimates.

The publication schedule for the Population and Migration statistics branch of NISRA is available online and details all planned publication dates 12 months in advance. This schedule can be found on the [NISRA website](#).

In addition, a pre announcement on all statistics is made on Gov.uk detailing the exact date of publication one month in advance.

All statistical publications have been released to the planned publication schedule set out at the beginning of the year.

In the unlikely event of a change to the pre announced release schedule, public attention would be drawn to the change and the reasons for the change explained fully, as set out in the Code of Practice for Official Statistics.

5. Accessibility and Clarity

Accessibility is the ease with which users are able to access the data, also reflecting the format in which the data are available and the availability of supporting information. Clarity refers to the quality and sufficiency of the metadata, illustrations and accompanying advice.

Mid-year Population Estimates are available, free of charge, online from the [NISRA website](#). Links from the [GOV.UK release calendar](#) also provide the release date and location of each new set of population estimates one month in advance of publication.

The main statistical bulletin can be downloaded in PDF format from the NISRA website. Likewise, supporting tables and figures throughout the report are available to download.

As well as the main statistical bulletin the NISRA website hosts a number of data files in Excel format for each of the Northern Ireland geographies which can be downloaded. In addition, detailed data are now published in usable formats (.CSV) as part of the open data initiative on [OpenDataNI](#). Associated metadata accompanies the data files which details information in relation to variables, timeframes, coverage and methodology.

Population statistics are also published on the [Northern Ireland Neighbourhood Information Service \(NINIS\)](#) website which allows user to interact with a broad range of statistics and interactive content from across Northern Ireland.

Users with any further queries can contact the responsible statistician by phone (028 9025 5156) or email (census.nisra@gov.uk).

6. Coherence and Comparability

Coherence is the degree to which data that are derived from different sources or methods, but refer to the same topic, are similar. Comparability is the degree to which data can be compared over time and domain.

Population estimates for Northern Ireland are compiled and published by the [Northern Ireland Statistics and Research Agency](#). The [Office for National Statistics](#) (ONS) are responsible for producing population estimates for England and Wales, with estimates for Scotland being produced by [National Records of Scotland](#). Population estimates for each of the UK constituent countries are compiled using a common methodological approach and aim to be as consistent as possible.

Further information on the comparisons between UK population estimates can be found in the report: [Consistency of methods used for population statistics across the UK countries](#).

The mid-year population estimates are consistent across all outputs in their reference period, running from mid-year to mid-year. However, depending on the geography in question the time series available may begin in mid-1971, mid-1991 or mid-2001.

Therefore not all geographies are comparable across the same number of years; details of the time series available for each geography are detailed within the accompanying metadata.

The mid-year population estimates provide data on components of population change which may overlap with other NISRA outputs. The coherence of these data can be affected by both reporting periods and context.

Firstly, the [Long Term International Migration](#) publication which is published in August each year also reports on migration figures for Northern Ireland. However, the focus of the Long Term International Migration publication is to present alternative administrative data sources which assist with the measurement and quality assurance of international migration inflows to, and outflows from, Northern Ireland. These data are derived from the medical card register and other sources, however, comparisons with the official migration figures should not be made. This is because the migration data used in the Long Term International Migration estimates refer to a specific subset of the medical card register only.

In addition, the adjustments made to the mid-year estimates migration figures to account for an underrepresentation of males and international outflows (see accuracy and reliability) have **not** been made to the Long Term International Migration estimates. In relation to reporting period, Long Term International Migration estimates are reported on quarterly and by calendar year rather than the mid-year to mid-year reporting period for population estimates.

Estimates of births and deaths used to calculate population estimates and reported on in the components of population change refer to those births and deaths which occur from mid-year to mid-year, irrespective of when registered. These estimates differ to those reported by [NISRA Vital Statistics](#) in terms of reporting period, with Vital Statistics reporting births and deaths both quarterly and annually.

Mid-year population estimates are produced by single year of age from 0 to 89 and 90+. The 90 and over age group are aggregated into a collective. Following on from the mid-year population estimates in June the Population Statistics team produce [Estimates of the Population Aged 85 and over](#), this publication provides users with estimates of the population aged 90 to 104 by single year of age and gender. To produce these estimates NISRA has adopted the [Kannisto-Thatcher Survivor Ratio Method](#), a completely separate methodology than the cohort component and ratio change methods used for mid-year estimates. Users should take note of the different methods used to produce these two population estimates when conducting any further analysis. Some overlap does exist between the two outputs as the estimates for those aged 85 to 89 in the Estimates of the Population Aged 85 and over publication are taken directly from the published mid-year estimates.

Useful links:

- [Consistency of methods used for population statistics across UK countries](#)
- [National Records of Scotland](#)
- [Office for National Statistics](#)

7. Trade-offs between output quality components

Trade-offs are the extent to which different aspects of quality are balanced against each other.

The mid-year estimates are published unrounded, by sex and single year of age, to enable users to carry out further analysis. However, in general the precision of the estimates could be considered to be no better than to the nearest 100.

Additionally, population estimates for Super Output Areas and Former Electoral Wards are produced by sex and broad age bands only. The reason single year of age estimates are not available for these two geographies are twofold:

1. Estimates have not been quality assured at this level of detail.
2. The small numbers involved are not considered sufficiently large enough for a robust application of our ratio change methodology.

Further information on the methodology used to create population estimates is available within the [methodology report](#).

8. Assessment of user needs and perceptions

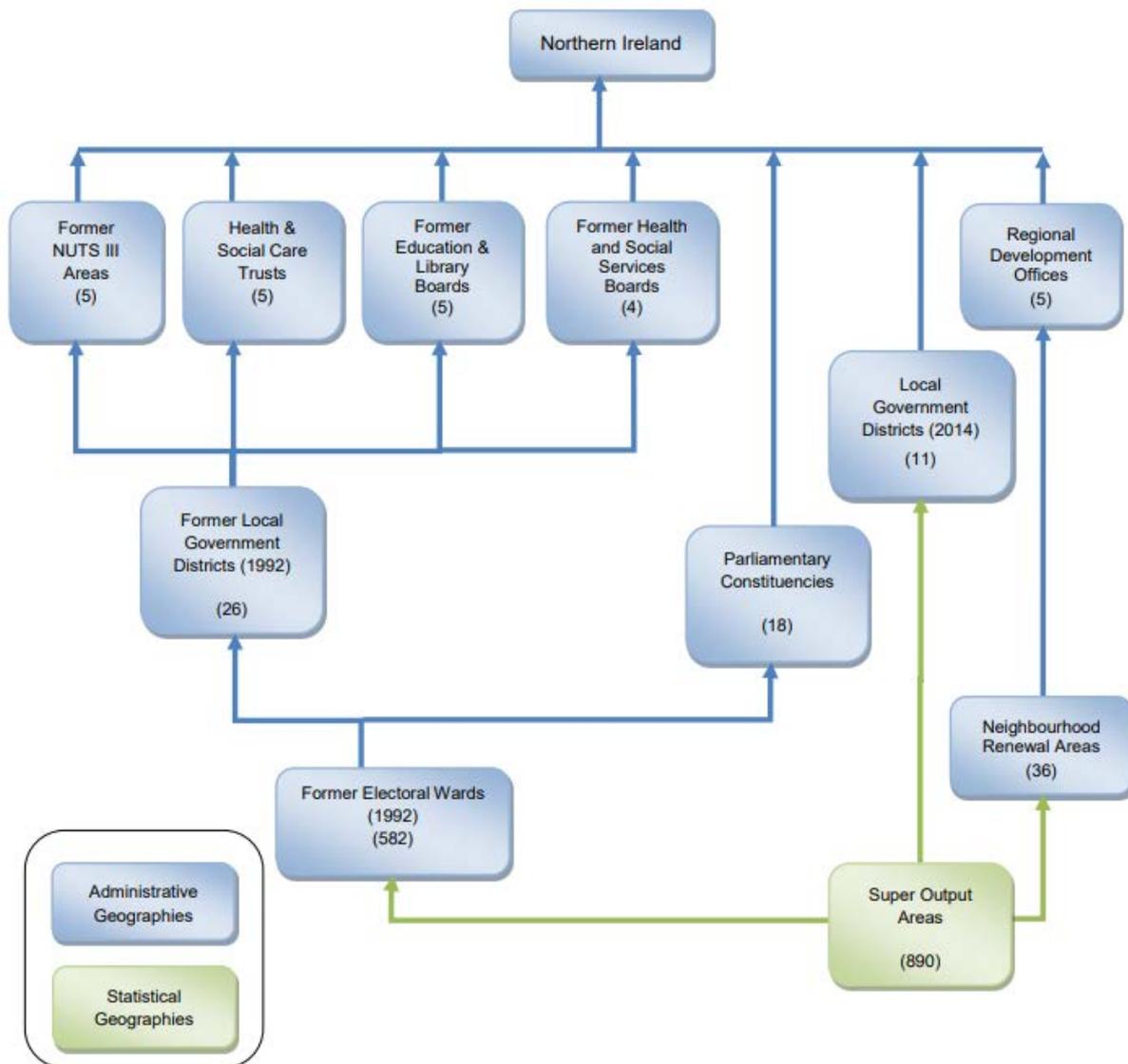
The process for finding out about users and uses, and their views on the statistical products.

Information on user's needs for, and perceptions of, the population estimates are collected by:

- user surveys, for example, the latest population and migration statistics user feedback survey was undertaken for 2018/19. The user feedback survey allows our users to comment on existing outputs and put forward changes in their requirements. The [results of the latest user feedback survey](#) have been published.
- contact with individual users – drawing on the evidence provided by the many users who contact the Population and Migration Statistics team with requests for, or queries on, the estimates and projections.
- user groups, such as the [Demographic Statistics Advisory Group](#), which allows the Population and Migration Statistics team to consult with personnel who represent the interests of the main user communities.
- User engagement event – our most recent user engagement event was held in February 2020 and details of this event can be found on the [stakeholder engagement section](#) of our website.

Annex A

Figure 1: Bottom-Up approach used in the population estimates methodology



Enquiries and suggestions

- The revisions policy for Northern Ireland population statistics is available [here](#).
- We welcome feedback from users on the content, format and relevance of this release. Please send feedback directly to census@nisra.gov.uk.
- Follow NISRA on [Twitter](#) and [Facebook](#).
- All media inquiries should be directed to the DOF Press Office:

Telephone: 028 9081 6724

Email: dof.pressoffice@finance-ni.gov.uk

- Further statistical information can be obtained from NISRA Customer Services:

Telephone: 028 9025 5156

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