Summary Quality Report

Coverage: Northern Ireland

Theme: Population

Population Aged 85 and Over in Northern Ireland

NISRA
Northern Ireland Statistics and Research Agency
Gníomhaireacht Thuaisceart Éireann um Staitisticí agus Taighde

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Contents

1. Introduction

Important points

- Estimates of the Population Aged 85 and Over in Northern Ireland are now released alongside the Mid-year Population Estimates each year.

- The Mid-year Population Estimates provide population estimates at single years of age up to 89 years, and for the age-group of those aged 90 and over. The estimates of the population aged 85 and over provide a further breakdown of those aged 90 and over, by single year of age up to 104 years, and collectively for those aged 105 and over.

- Mid-year Population Estimates are produced using the components of change method and provide single year of age estimates up to age 89 with aggregate statistics for ages 90 and over. The Kannisto-Thatcher Survivor Ratio Method[1] is then used in the estimates of the population aged 85 and over to distribute the population estimates for the 90 and over age group into single year of age up to and including 104, and a group aged 105 and over.

- The Kannisto-Thatcher Survivor Ratio Method gives rise to minor revisions to the age distribution within the aged 90 and over category as new information on actual deaths becomes available. Accordingly, in each release slightly revised estimates for the 90 and over category are provided for the period mid-2001 to the latest mid-year.

- As the KT method relies on death registrations from previous years, it underestimates in conditions of decreasing mortality and overestimates the population if their mortality is rising over time. Therefore, estimates of the very old are constrained to the published MYEs for those aged 90 years and over; this means that while the MYEs determine the total population size, the KT method determines the distribution of the population at different ages.

[1] The Survivor Ratio Method for Estimating Numbers at High Ages, Thatcher R, Kannisto V, Andreev K, 2002. Link to paper - http://www.demographic-research.org/Volumes/Vol6/1/. The Demography of Centenarians in England and Wales, *Population Trends 96* pp5-12, Thatcher R, 1999.

2. Relevance

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

The estimates of the population aged 85 and over contributes to the production of population projections and life expectancy statistics for Northern Ireland, all of which are of policy interest because of the implications for pensions and the delivery of front line services for the older population such as housing, transport and health care. The single year estimates for those aged 90 and over for Northern Ireland also feed into the Estimates of the Very Old for the United Kingdom, produced by ONS.

Historically, mid-year estimates were produced on a single year of age basis up to and including, age 84. For those aged 85 and over aggregate statistics were produced, as single year of age estimates were considered to be less reliable for this age group due to the small number of people involved. In 2010 NISRA responded to an increased demand for more detailed population estimates for those aged over 85, producing single year of age mid-2009 estimates for those aged 85-104 using the internationally recognised Kannisto-Thatcher Survivor Ratio Method.

Following the release of 2011 Census figures, mid-year population estimates for the years 2001 to 2011 were revised. One outcome of this revision was to extend the age range of population estimates to provide single year of age estimates up to age 89, with aggregate statistics for ages 90 and over. The Kannisto-Thatcher Survivor Ratio Method was then subsequently used to distribute the population estimates for the highest age group (90 and over) into single year of age, up to and including 104, and a group aged 105 and over.

After the revision of the mid-year estimates and the increase of single year of ages from 0-84 to 0-89, a decision was made to keep the title of this publication as "Estimates of the population aged **85 and over**", rather than changing it to the "...population aged **90 and over**". As the publication still contains information on the age group 85 to 89, and 85 and over, this decision was taken so that it would be clear to users that the publication being released continues to provide the same information as in previous years, and that both the methodology and figures within it are consistent and comparable with previous publications.

The estimates of the population aged 85 and over publication includes:

- A statistical bulletin which provides descriptions of and commentary on the estimates.
- Statistical tables in flat and tabular format. Tabular format for population by single year of age and gender (85 and over), and population by single year of age and gender (all ages).
- An infographic highlighting the main trends in the data

3. Accuracy and Reliability

The proximity between an estimate and the unknown true value.

Estimates of the population aged 85 and over, are based on death registration statistics and are constrained to be consistent with the Northern Ireland mid-year estimates of those aged 85 years and over by sex.

The mid-year population estimates are produced using the components of change method and 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.

Any error in the 85 years and over census estimate is carried forward into the mid-year population estimates and will be reflected in the estimates of the population aged 85 and over. In addition to non-response, other possible sources of error in the census estimate for people aged 85 and over include inaccuracies in reporting of dates of birth (for example, proxy reporting by carers). A full quality assurance of the data sources which contribute to the mid-year population estimates is available from the Population Estimates and Projections QAAD.

Survivor ratio methods such as the Kannisto-Thatcher Survivor Ratio Method provide age-specific estimates of the population for those aged 85 years and over using data from death registrations. The main assumption in these methods is that all deaths are recorded and that the recording of information on age at date of death is sufficiently accurate and reliable.

Statistics on death registrations are collected through administrative sources maintained by the General Register Office (GRO). These data are considered very reliable for two reasons. First, there is a legal requirement to register a death and the certificate issued at registration is needed and used by the recipient. Second, administrative data are not subject to sampling error in the way that survey data are.

In the Kannisto-Thatcher Survivor Ratio Method, it is also assumed that international migration at the oldest ages is minimal so this component of population change can be ignored.

The survivorship ratio used is weighted over five years; this takes into account variations in the cohort size at each specific age and any cohort-specific fluctuations in mortality. Age-specific survivorship ratios are calculated using age-specific deaths data in both the denominator and, in a more complex way, the numerator. Registered deaths are a component of population change and are included in the mid-year population estimates. When creating mortality rates for the population aged 85 years and over, users should be aware that deaths data have been used to generate the estimates of the very old (the denominator in the calculation).

The estimates produced by the method are constrained to the official published mid-year population estimate of those aged 85 years and over. In effect this means that while the Kannisto-Thatcher Survivor Ratio Method determines the estimated distribution of the population aged 85 years and over, the accuracy of the overall

estimates produced using the Kannisto-Thatcher Survivor Ratio Method is dependent on the accuracy of the 85 years and over total in the official mid-year population estimates.

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.

Estimates of the population aged 85 and over for Northern Ireland are usually published annually in September each year. For a particular mid-year (30th June) they are available roughly 15 months after the reference date. The extra time taken to produce the estimates can be attributed to availability of the data sources and the time required to process the data, calculate the estimates and for quality assurance.

The publication of the population aged 85 and over estimates would be later than the planned date only if the input data used to calculate the estimates were not available, for example, if deaths data were unavailable or if substantial problems were encountered with the processing systems used to calculate the estimates.

In previous years, the pre-announced publication date has always been met (up to 2020). In the year following the release of census estimates, the population aged 85 and over estimates are published later than the usual September release date. This is due to the fact that a rebasing exercise is carried out to revise the population estimates time series in line with the most recent census estimates.

A one month pre announcement on all statistics is made on Gov.uk detailing the exact date of publication for the estimates of the population aged 85 and over. An example of which can be found on Gov.uk.

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.

Estimates of the population aged 85 and over for Northern Ireland 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 aged 85 and over 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 NISRA website hosts a data file in Excel format which can be downloaded. Associated metadata accompanies the data files which details information in relation to variables, timeframes, coverage and methodology.

Data can also be accessed in various other formats (xlsx, csv, JSON-stat, px) on the NISRA Data Portal. The Portal gives users the opportunity to view and filter data sets, plot interactive charts, save queries, create favourite datasets and widgets, access data in multiple formats and share results and automate processes using API queries.

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.

The Kannisto-Thatcher Survivor Ratio Method, used to produce the Northern Ireland estimates of the population aged 85 and over is an internationally recognised method used to provide more detailed breakdowns of the older population by age.

Similar information relating to England & Wales and Scotland are also released in September each year by the Office for National Statistics (ONS) and National Records of Scotland (NRS), respectively. While the titles for the releases for the separate UK countries differ slightly, the methodology used by all three statistical organisations to create these statistics are very similar, producing comparable results and allowing the estimates to be aggregated to produce estimates for the UK. A UK comparison paper analysing the comparability of these estimates between the four UK countries is hosted by ONS on their website.

For the Northern Ireland estimates of the population aged 85 and over a comparable time series is published back to 2001. Each annual set estimates are derived using the same methodological approach. A feature of the methodology used is that previous years' estimates may change when a new year of data is added. Estimates are constrained to the published mid-year population estimates for the 85 years and over age group for the reporting year and re-constrained for previous years as the series is updated. The population aged 85 and over estimates are therefore consistent with the mid-year estimates.

7. Trade-offs between output quality components

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

The Kannisto-Thatcher Survivor Ratio Method overestimates the population if their mortality is rising over time and underestimates the population if their mortality is falling. This is because the estimation process takes into account the mortality in previous years, which may not be the same as in the most recent year. The gap between the Kannisto-Thatcher 90 years and over totals and the official 90 years and over mid-year population estimate totals will always be largest for the most recent years. This is because there will be higher proportions of people still alive at ages 90 years and over in recent years, meaning the deaths data, which are used to calculate the Kannisto-Thatcher estimates, are less complete for the most recent years.

Estimates of the population aged 90 and over at single year of age are constrained to the aggregated number of males and females aged 90 and over produced in the mid-year population estimates, thus making them consistent. However, due to the different approaches used (i.e. cohort component method for mid-year estimates and Kannisto-Thatcher Survival Ratio method for estimates of the population aged 90 and over), the transition between the number of people aged 89 to 90 may not be as smooth as at other ages.

There is a trade-off between timeliness and accuracy in the production of the population aged 85 and over estimates. As the Kannisto-Thatcher Survival Ratio Method uses the most recent deaths data from the General Register Office (GRO), this can include some late registrations of deaths occurring in previous years (for example, deaths referred to a coroner can mean the date of occurrence of a death is not available until several months after the registration of that death). This means that, in order to allow these statistics to be available on an annual basis, previous years' estimates are revised with each publication. While this means there may be minor changes in previous years' figures, it also means the numbers are continuously improving and becoming more accurate.

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:

- 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.
- 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.

The estimates of the very old are produced primarily the Office for National Statistics who require them for the production of national life tables and national population projections.

Other users of the data include:

1. National and local government users,
2. Demographers,
3. Actuaries,
4. Medical researchers and
5. Others interested in longevity, population numbers, and/or past and projected age-specific mortality rates at the oldest ages.

9. 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

  E-mail: census@nisra.gov.uk

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