Article

Population statistics research update: June 2018

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1 . Introduction

This article describes the research and development conducted and planned for our standard population statistics outputs as at June 2018. To help you find the information you need quickly, the article includes a description of each project, followed by an update paragraph on progress for ongoing projects included in our February 2018 research update.

We welcome your comments on our proposed work and any suggestions for other research and development that would increase the value of our statistics to you.

2 . Internal migration

The largest element of population change at the local authority level is internal migration – that is, people moving from one local authority in the UK to another. The methods for estimating internal migration were significantly improved in 2013 when the availability of new Higher Education Statistics Agency (HESA) data allowed a simpler and more reliable approach to be adopted for estimating migration of students. This further research has three main aims, which are detailed in this section.

Assessing whether the Personal Demographic Service (PDS) data source is an appropriate replacement for the Patient Register (PR) data source when the latter is discontinued

The PR data source currently used in producing the internal migration estimates is due to be discontinued in 2018. We are quality assuring the PDS data to ensure that they are appropriate for producing the estimates, with a view to using the PDS data fully for the mid-2018 population estimates.

Update: June 2018

This work has been paused for the last few months while we have focused on implementing other improvements to the estimates. We hope to restart this work from July 2018.

Developing improved models for the destination of students after they graduate

The current methodology is thought to be an improvement on the previous method in that it is much more accurate in estimating migration of higher education students to their place of study. However, there is still scope for improving methods for estimating the destination of students who move within the UK after leaving higher education.

At present, we assume that a student who does not update their PR record upon leaving higher education will either stay in the local authority in which they lived while studying, or return to their previous address within the UK as recorded on the PR. The assumed probability of moving to their previous address increases with time.

We have developed an alternative approach of applying an origin-destination matrix to these students. This distributes the students who do not update their PR record when leaving higher education across local authorities, with probabilities specific to each origin and destination local authority.

Update: June 2018

The alternative, improved approach is being implemented for the 2017 (and subsequent) mid-year population estimates in June 2018.

Improving estimation of migration moves within the year

As described previously in this section, the current methodology uses NHS Central Register data to adjust the initial estimates, to allow for moves of people who were only present at either the start or the end of the year, but not both. We have investigated an alternative approach of directly identifying these moves, for example, by linking the start-year and end-year population stocks file with registrations of births and deaths.

Update: June 2018

This work has shown that this alternative approach did not improve the quality of the estimates, so for future estimates we plan to use an approach broadly similar to the one in current use. More information on this work was provided in the Mid-year population estimates methodology update paper.

3 . Population characteristics

We recognise the continued user interest in population estimates by ethnic group, so our research is continuing to develop methods and assess the quality and usefulness of the research outputs. As this research is ongoing, we have not yet made a decision on whether we have an appropriate method to produce a regular output. We will continue to provide updates as this research progresses.

Update: June 2018

Recent publications include Research Outputs: Ethnicity estimates from survey and administrative data, 2015. We are keen to get your feedback on these Research Outputs and the methodology used to produce them, including potential improvements and uses of the data. Please email your feedback to Pop.info@ons.gov.uk, stating the title of the output in your response.

4 . Household projections for England

We announced in January 2017 that we were taking responsibility with immediate effect for the production and publication of the household projections in England, previously produced by the Ministry of Housing, Communities and Local Government (MHCLG – formerly the Department for Communities and Local Government). We hope that this transfer of responsibility will further develop the consistency between the household projections and the national and subnational population projections (SNPPs), and allow us to produce them with increased efficiency.

Update: June 2018

The 2016-based household projections for England are provisionally due to be published in September 2018. Our aspiration is that future rounds of household projections for England will be published at the same time as, or shortly after, the SNPPs. This has not been possible for the 2016-based round due to the additional research we have been carrying out to review the methodology.

We have held further meetings of the Household Projections Collaborative Group to discuss and evaluate proposed changes to the methodology, based on analysis using the 2014-based SNPPs. In contrast to what was proposed in the household projections consultation, we are likely to be retaining a two-stage approach for projecting the number of households, with overall numbers of households projected in the first stage and household type breakdowns projected in the second stage.

On 20 June 2018 we published a research update to outline our proposed methodology for the 2016-based household projections for England in advance of the September 2018 release. The methodology will follow a similar approach to that used for the SNPPs in the publication 2016-based subnational population projections for England: changes to methodology and source data. As part of this update we will be inviting views on the household type breakdowns and potential variants users would find most helpful.

5 . Gender identity

Work on gender identity is being conducted jointly by the Population Statistics and Census teams within Office for National Statistics (ONS). Information on our work on this topic is provided on our gender identity page.

The 2021 Census topic consultation identified a need among a number of data users for information about gender identity for policy development and service planning; especially in relation to the provision of health services. The Gender identity topic report (PDF, 728.4KB) on the consultation findings provides further information and can be found on the gender identity page.

As we do not currently collect data on gender identity on any of our social surveys, research and testing work will inform our position on this topic. The Gender identity research and testing plan (PDF, 798.6KB), on the gender identity page, sets out the work we will do to help us determine how to meet user needs for information on this topic.

On 13 January 2017 we published the Gender identity update article. This addresses our commitment to review the Trans Data Position Paper, which we published in 2009. The update outlines developments around the topic of gender identity. It covers:

- legislation

- the Women and Equalities Committee Transgender Equality inquiry

- data collection and question development worldwide

- our research, testing and findings so far

- the next steps and future work we will be undertaking

Update: June 2018

We have continued to engage with data users about requirements for gender identity information. We have also been undertaking further research and testing, considering how to collect this information in addition to sex.

A further update on the gender identity work will be published later in 2018.

6 . Migration statistics transformation

In May 2018 we published an update of the Migration Statistics Transformation Programme.

As we set out at the [Population and Public Policy forum](#) in September 2017, the context for our work is changing. Users are telling us that they need more information on the impact migrants have while they are in the UK, including the sectors in which they work, the communities they live in and the impacts on public services such as the NHS and schools. Furthermore, there is a changing policy context, largely because of the UK exiting the EU; we therefore need to be able to inform decision-makers over the near term, but also develop the data sources to ensure future policy and implementation are informed by robust evidence.

We therefore have plans to transform the information that the Government Statistical Service (GSS) produces on migration over the next two years to meet the changing user needs, and which will begin to put administrative data at the core of evidence on migration in 2019.

Full details of the work plan and its timeline are set out in the [Migration statistics transformation update: May 2018](#) .

The next release will be on 16 July 2018. This will include the latest information on Long-Term International Migration (LTIM) based on the IPS, as well as a broader overview of migration trends based on an integrated assessment of all the sources available.

7 . National population projections: mortality assumptions

Assumptions on future mortality rates are one of the inputs into the national population projections (NPPs). We have been working with the University of Southampton (UoS) to investigate whether a model-based approach can produce appropriate projected rates.

At present, mortality assumptions in the NPPs are produced using a combination of a statistical model and expert advice from the ONS Demographic Analysis Unit and a representative of the Government Actuary's Department. This research has investigated modelling mortality improvement rates using a generalised additive model, with separate models for infant mortality and old-age mortality. The model would allow some expert opinion to be incorporated by adjusting or constraining certain model parameters.

The proposed approach presents a number of advantages when compared with the current method: for example, it makes fuller use of available data and is more transparent and efficient. However, there are also possible disadvantages – there is a risk of inconsistency with previous projections and the model may be more difficult to explain to users.

Update: June 2018

The mortality assumptions for 2016-based NPPs were produced using the current ONS method as the model-based approach required further testing and development. We have resumed this development work and will assess the results of the model against the published results from the 2016-based NPPs.

We aim to complete this work by the end of 2018 in order to make a decision, in consultation with experts and key users, about whether or not to transition to the new mortality assumptions model for the 2018-based national population projections, which are due to be published in 2019.

8 . Transforming the population statistics system

As part of the wider Administrative Data Census research, we are currently investigating the potential for a flows-based approach for producing population estimates to derive components of population change (births, deaths and migration flows). This approach is different from the current stock-based approach, based on anonymously linking person records on administrative datasets to construct a Statistical Population Dataset (SPD), from which to produce estimates of the population by sex and age for each local authority in England and Wales.

More recently we have also produced population estimates to output area level using the same approach. These admin-based population estimates form part of our wider set of Administrative Data Census Research Outputs. The Research Outputs are not official statistics on the population, nor are they used in the underlying methods or assumptions in the production of official statistics. They are published as outputs from research into a methodology different to that currently used in the production of population statistics.

The new flows-based approach is looking at using all available admin data sources to derive the components of population change (flows), to continuously update the usually resident population rather than producing an independent stock estimate of the population each year. As we already have good administrative data on births and deaths, research is currently being conducted on producing estimates of people moving both to and from the UK and within the UK using available administrative data sources. The availability of good quality indicators of "activity" in the administrative data sources will help produce these estimates and is a core part of the work. "Activity" can be defined as an individual interacting with an administrative system, for example, for National Insurance or tax purposes, when claiming a benefit, attending hospital or updating information on government systems in some other way.

User feedback has highlighted the importance of understanding more about the dynamics of population change. Ultimately, we are interested to learn more about how migrants interact with public services and what combining these data sources can tell us about their travel patterns to and from the UK, their use of education and health services, and their impact on the economy.