

2011 Census in Scotland: Population and Household Estimates – Quality Assurance Process

July 2013

Quality Assurance Process

Introduction

The 2011 Census population results go through a rigorous quality assurance process prior to their publication. This paper describes the quality assurance (QA) which has been carried out in preparation for the release of headline statistics for Scotland to date.

The census population figures are estimates determined mainly by the census count. However the final figures are higher than the census count because they include an estimate of the impact of under coverage of the population (such as people who were missed). In addition the process makes a relatively small adjustment for over coverage such as people counted more than once. The coverage estimation is based mainly on the results of the Census Coverage Survey (CCS) which National Records of Scotland (NRS) conducted. More details of the coverage adjustment process can be found at <http://www.scotlandscensus.gov.uk/documents/censusresults/release1c/rel1cmethodology.pdf>.

The aim of the QA is to identify where further adjustment might be required before the estimates can be finalised. For example, if there is evidence that something has gone wrong in processing or in the estimation process. The estimates published here have gone through a rigorous checking process which has been overseen by a series of working groups and panels. These groups and panels have reviewed the evidence and made recommendations on further adjustment work.

The Executive Level Panel looked at summaries of the evidence which had been compiled from the whole quality assurance process. On the basis of these and further examination of the data, they agreed on the estimates that have been published.

The membership and remit of the external Census Data Quality Advisory Working Group can be found at <http://www.gro-scotland.gov.uk/census/censushm2011/consultation-and-research/data-qual-advisory-group/index.html>

The membership of the Executive Level Panel is given in Appendix 1.

Release 1A

The quality assurance of the summary tables published in Release 1A (December 2012) followed the initial phase of the QA process and included looking at the following aspects:

- age by sex profile by council area compared with published mid-year population estimates and a range of comparator sources including NHS Central Register, Child Benefit, Customer Information Service data on older people¹ ;
- household numbers – compared to published household number estimates;
- fertility rates – using birth registration data from NRS;

¹ For more information on these comparators, see <http://www.gro-scotland.gov.uk/files2/stats/about/census-overview-comparative-sources-uksa.pdf>

- the inferred sex ratio distribution by age (i.e. the number of males per 100 females); and
- the pattern of response by age and gender.

The External Data Quality Advisory Group examined preliminary census estimates for Scotland and council areas. The advisory group provided comments on the QA process, the initial figures and also commentary on the emerging trends.

The census estimates were examined by the QA team in NRS using an agreed list of checks. The results of these checks, along with the comments from the External Data Quality Advisory Group, were discussed with an Internal Quality Assurance Panel, drawn from topic experts from National Records of Scotland. This group examined the issues highlighted in the quality assurance, and provided an assessment of the quality of the census estimates for each age-sex group. It suggested supplementary work to be carried out by the QA and coverage and adjustment teams in NRS, and identified where there were differences with comparator sources.

Release 1B

Prior to Release 1B (March 2013), additional quality assurance was carried out including the following aspects:

- household size - compared to published household size estimates;
- student numbers - compared to data on students from School Census, Higher Education Statistics Agency and Scottish Funding Council;
- armed forces numbers – compared to a range of other armed forces data;
- ethnicity; and
- international migration.

These checks resulted in minor changes to the census population estimates, and there were no differences to the rounded figures published in Release 1A .

The External Data Quality Advisory Group examined census population and household estimates for Scotland and council areas. They examined a number of small area estimates and provided explanations and commentary on the reasons for differences

For Release 1B, the internal panel concentrated on the household estimates, in relation to available comparators. This group examined the issues highlighted in the quality assurance, and provided an assessment of the quality of the census estimates for each council area. It suggested supplementary work to be carried out by the QA and coverage and adjustment teams in NRS, and identified where there were differences with comparator sources

Quality assurance packs on the census population and household estimates for each council area in Scotland are published as part of Release 1B. A range of quality assurance, evaluation and methodology papers will be published with later releases of census results.

Release 1C

Prior to Release 1C (July 2013), additional quality assurance was carried out examining the single year of age data for people over 80 years old in order to decide whether to publish data up to 90 years or up to 100 years. The data was compared with published data derived from mid-year estimates.

The External Data Quality Advisory Group did not discuss the single year of age estimates. For release 1C, the internal panel agreed to sign off the final counts by correspondence, as the differences between the rounded figures for release 1B and 1C were minimal.

Appendix 1

Executive Level Panel - membership

The Executive Level Panel will consist of:

Tim Ellis, Registrar General (Chair), National Records of Scotland (NRS)
Audrey Robertson, Head of Corporate Services, NRS
Amy Wilson, Head of Census Statistics, Census, NRS
Penni Rocks, Head of Census Operations, NRS
Kirsty MacLachlan, Head of Demography, NRS
Roger Halliday, Chief Statistician, Scottish Government
Eddie Turnbull, Head of Technical Strategy and Governance, eHealth, NHS
Scotland

This panel will approve the final population and household estimates for Scotland and for each local authority.