

CENSUS ADVISORY GROUP

AG (10) 22 Quality Assurance Overview

Census Quality Assurance Update – autumn 2010

1. Introduction

1.1 Quality assurance of the 2011 Census estimates will ensure that outputs are fit for the many purposes for which the data are used. It is also an objective for differences between census estimates and estimates from other sources to be fully understood. These other sources include the mid-year population estimates and administrative data.

1.2 This paper provides an overview of preparations for the quality assurance of 2011 Census data. It covers:

- Engagement with users,
- Development of quality assurance checks,
- Independent review of methods,
- Decision making and assurance processes.

2. Engagement with users

2.1 A range of engagement activities are being run to ensure that users have confidence in the approach to quality assurance. These activities are aimed at (i) making best use of local knowledge and (ii) ensuring that users have an understanding of the methods used in producing census estimates.

QA Studies

2.2 A number of Local Authority (LA) users have been working with ONS on QA studies to identify local data sources of potential use in the quality assurance of census results and providing intelligence on local populations.

2.3 An initial set of ten LAs were involved in a Pilot Study running between February and April 2010. An additional thirty LAs have subsequently been involved in the QA Studies from August to October.

2.4 As part of this work LAs have provided a range of locally held datasets including Council Tax, Electoral Registration and Houses in Multiple Occupation. Datasets were assessed by ONS for their potential use in census quality assurance. A summary of this analysis was returned to each LA.

2.5 Users involved also provided findings from their own research into their local populations and its characteristics. This research included results from local matching studies. Research provided will be referred to during the quality assurance process where required.

2.6 Findings from the studies will be published by the end of 2010. This will include recommendations on what local sources are of most use. The final report will also include a request for the most useful local sources from all LAs, referring to March 27th 2011. Council Tax data with exemption and discount code information has been identified as particularly useful.

QA Advisory Groups

2.7 The QA Pilot Studies established effective partnerships between ONS and expert local authority users. ONS were keen to continue to involve these experts in the development of the quality assurance approach and to maintain a user perspective. A QA Advisory Group was established in August 2010 for this purpose.

2.8 Initial papers sent to the group covered the methodological tutorials and proposals for analysis of 'early extract' data. Meetings are held by correspondence only to minimise the burden on users. A summary of the comments received are returned to all members, along with a response from the quality team.

2.9 Papers for subsequent meetings include how students and ethnicity will be checked.

2.10 A face to face event is currently being considered for early in the New Year.

Methodological Tutorials (Focus on...Completing the Count)

2.11 A series of tutorials are being carried out in November 2010 to explain the census coverage assessment and quality assurance methods. The seminars, referred to as 'Focus on...Completing the Count', are being held in London (twice), Newport and Manchester.

2.12 The target audience of the tutorials is local authority representatives who need to understand how the census estimates for their local area were generated and explain it to other people in their authority, for example finance directors.

2.13 Promotion of the events has been through Census Liaison Manager (CLM) monthly updates and also be promoted via the Census Regional Champions (CRCs). The tutorials have proved popular with more than 150 users booked to attend.

3. Development of Quality Assurance Checks

3.1 Central to the quality assurance of 2011 Census estimates is comparison to alternative estimates of the population and its characteristics. Comparator datasets used for this purpose include patient registration and the school census.

3.2 There are a number of issues around comparator data which mean that they will not provide a precise estimate of that population being measured by the census. This imprecision will vary geographically as well as by age and sex. As a result the QA will not be checking that the census replicates the precise estimates from alternative sources. Rather the QA will check census estimates against pre-defined tolerances around each comparator.

3.3 A series of checks are being developed with associated tolerances. A summary of the checks currently underdevelopment is provided below, along with the source(s) against which they will be compared.

QA Check	Comparator Dataset
1. Age and Sex	<ul style="list-style-type: none"> • Patient Register • Mid-year Population Estimates • School Census • Central Information System
2. Household Number and Average Size	<ul style="list-style-type: none"> • Council Tax • Address Register • Patient Register • Communities and Local Government household estimates
3. Ethnicity	<ul style="list-style-type: none"> • Population Estimates by Ethnic Group • Integrated Household Survey • School Census • Independent Schools data from Department for Education
4. Students	<ul style="list-style-type: none"> • Higher Education Statistics Agency • Further Education Student Numbers from Business, Innovation and Skills
5. Armed Forces (Home/Foreign)	<ul style="list-style-type: none"> • Defence Analysis Statistics Agency • US Armed Forces
6. Migration (Internal)	<ul style="list-style-type: none"> • Patient Registration
7. Migration (International)	<ul style="list-style-type: none"> • Patient Registration • International Passenger Survey • National Insurance Numbers
8. Fertility Rates	<ul style="list-style-type: none"> • Registered births • Census estimates
9. Mortality Rates	<ul style="list-style-type: none"> • Registered deaths • Census estimates
10. Sex Ratios	<ul style="list-style-type: none"> • Census estimates

4. Independent Review of Methods

4.1 The National Statistician has appointed a review team to conduct an independent review of the methodology to assess and adjust for coverage in the 2011 Census and quality assure the results. The review will be conducted between October 2010 and January 2011 with publication of the report in early February.

4.2 Professor Ian Plewis (Manchester University) is leading the review team which also consists of Professor Ludi Simpson (Manchester University) and Dr Paul Williamson (University of Liverpool).

4.3 As part of the review users are being asked to comment on the proposed methods. LA Comments are being compiled by a number of Local Authority groups - London Councils, Core Cities, the Local Government Association, and the Welsh Local Government User Group. Members of census advisory groups have also been invited to send any comments to the review team. Users were asked to feedback to the review team directly on:

- Whether there are particular population groups at risk of underestimation,
- Whether the QA process is making use of the most relevant datasets to adequately assess plausibility,
- Where the most significant risks are with the methods.

5. Decision Making Process and Quality Assurance

5.1 A range of evidence will be used to assess the quality and plausibility of census estimates. This includes comparisons against a range of sources, demographic analysis, field and processing diagnostics, profiles of each area and summaries of research carried out by local authorities themselves.

5.2 ONS has recently been establishing how this evidence will be reviewed and how decisions will be made. In keeping with the 2001 Census approach it is intended to set up a QA panel to agree the census estimates of population for each LA.

5.3 Building on the 2001 approach, two further panels will be used in the decision making process. The three panels to be used will be:

1. QA panel - an internal Panel (plus Welsh Assembly Government representation) which will assess Census population estimates at LA / regional / national levels and recommend acceptance / rejection or further research
2. High level/external sub panel - a group of internal, UK and independent external reviewers providing expertise and guidance on the emerging national picture and any adjustments applied, and endorsing the progress of the main QA panel
3. Internal QA steering group - An informal steering group set up to focus on difficult LAs and provide a steer to the QA team on supplementary analysis required prior to estimates going to the main QA panel, thereby reducing the burden on the main QA panel

5.4 The high level panel will meet on a six to eight week basis. It will comment on the emerging national picture, advise on emerging issues and endorse key decisions made by the QA Panel. It will challenge any areas of concern and commission additional analysis from the QA team and invoke contingency options where necessary.

5.5 External experts will be asked to sit on the high level panel. This will include academics with statistical and demographic expertise. Users with experience of population statistics for groups of LAs will also be invited.

5.6 At the end of the process the National Statistician will sign-off the final census estimates prior to publication as part of an executive panel including senior management across ONS.