



Scotland's Census

Shaping our future

A' dealbhadh ar n-àm ri teachd

Scotland's Census 2022

Statistical Quality Assurance - Validation of Population Estimates

Quality Assurance Panels

August 2022

Contents

1. Introduction	2
2. Purpose	3
3. Methodology	3
4. Membership	4
5. Topics covered	5
6. Glossary	5

1. Introduction

Scotland's Census 2022 will produce population data for Scotland at national and sub-national levels. These data will cover a range of topics for individuals and households. The census data undergoes a number of statistical processes that form the overall census data journey. These processes cleanse the census data to remove multiple and false responses, identify the missing and inconsistent responses and fix these by replacing them with valid values from a donor record, and use information from the Census Coverage Survey to adjust the census results and produce estimates for the whole population. We will perform rigorous quality assurance procedures during each of these processes within the census data journey. More information about the census data processing methodology and our quality assurance strategy is available on our [website](#).

At the end of the data processing journey, but prior to statistical disclosure control and publication, the Validation of Population Estimates (VoPE) process is a final validation check. This process will compare census data with existing data, identifying any areas where census estimates differ significantly from prior data. At this point in the quality assurance process of the 2022 Census, data are expected to be of high quality and few errors are expected. Where discrepancies do arise these will be verified so that the difference is adequately explained and if not, investigated further. Further information on the VoPE methodology is available on our [website](#).

As part of the VoPE process, we are planning to hold a series of quality assurance panels to enable the census population and household estimates, and the estimates for every output variable, to be reviewed by external panel members. This paper sets out our plans for these panels, including purpose, methodology, membership and topics covered.

2. Purpose

The quality assurance panels will contribute to our overall quality assurance of the census estimates, providing an additional level of assurance of their accuracy. Panel members will provide this by drawing on their in-depth expertise and knowledge when analysing the census estimates. Any inconsistencies identified by our quality assurance panels will be investigated further and a decision will be taken on whether any action is necessary to address these potential inconsistencies.

3. Methodology

We will securely share census estimates with a select group of people with specific expertise who can provide additional quality assurance. Access to the data will be limited to named individuals in a controlled and secure way and individuals will be required not to share the data more widely or retain the data after the feedback period has ended.

We will share indicative early census population estimates with each QA panel. These data will have been through most stages of the census data processing journey: they will be estimates of the population following the estimation and adjustment processes that estimate the total size of the population and create additional records for parts of the population that may have been missed. Estimates will all be rounded. Where possible, we will also share comparator data, for context.

The data will be accompanied by a user guide detailing our SQA strategy, information on the rest of the Validation of Population Estimates quality assurance checks and on the comparator data sources and a FAQ section and glossary. Each QA panel member will be provided with a feedback form for sharing their feedback on each dataset shared and will have limited time in which to do so.

By sharing early indicative census estimates, we are hoping to take advantage of expert insight backed up by evidence that we may not have had access to for our own quality assurance procedures. For example, local authorities may be able to compare estimates to a local data source such as a database of users of a local service or they may have insight into the location and capacity of a new hall of residence or unexpected population movement due to COVID-19. We are most interested in insights backed up by evidence and will be keen to understand the data sources used. Panel members are not obliged to provide feedback but are

encouraged to do so. If a panel member finds no discrepancies and is happy with the estimates, this information would also be useful to us.

We will investigate further when evidence-backed feedback indicates that the census estimates could be improved. Discrepancies may be explained by differences between the census and alternative data sources, for example a different reference date between sources may mean they are not directly comparable. We will, therefore, consider carefully whether to take any action based on the feedback received, but we may choose not to do so. Feedback received will be summarised and reported in the quality assurance reports that will be published following each release of census data.

4. Membership

Before first outputs, we will organise quality assurance panels to review the population and household estimates from the census. We will arrange an overall population and household panel that will review data for the whole of Scotland; this will include NRS statisticians who produce statistics on a regular basis on these topics and academics with relevant expertise.

We will also arrange quality assurance panels made up of local authority representatives focusing on checking population and household estimates within each local authority area. Specifically, we will be seeking feedback from local authorities on the population and household estimates of their areas. We will be providing secure, controlled access to local census estimates to each local authority and asking each authority to assess these data against local data sources and evidence they have access to, to augment our own quality assurance checks. By offering local authorities the opportunity to provide feedback on census population estimates for their area, we aim to obtain additional assurance that census data are robust and fit for purpose.

Following first outputs and the publication of rounded population estimates at Scotland and local authority level, Validation of Population Estimates will continue validation of census estimates for all topics. We will solicit feedback and insight from further QA panels made up of experts from within the Scottish Government and National Records of Scotland as well as academic topic experts. We will securely share subsets of the census dataset relevant to each panel and take advantage of

expert knowledge of population subgroups and topic areas. As above, we will seek insight corroborated with evidence and these insights will help determine whether further adjustments are needed or whether the data are ready to be signed off for publication.

5. Topics covered

We will begin with our Scotland level and local authority QA panels and then proceed to cover all remaining topics covered by the census. As the release schedule for the topic-based estimates is finalised, we will be guided by it to set the timings of our later panels. At the moment, we anticipate holding seven topic panels with census variables grouped into the following topics: 1) Ethnic group, national identity, language & religion, 2) Married status, sexual orientation & trans status, 3) Health, disability & unpaid care, 4) Housing, 5) Labour market & travel to work, 6) Education and 7) Veterans.

6. Glossary

Term	Definition
Council Area (Local Authority)	There are 32 councils (local authorities) in Scotland, the administrative units of local government.
Comparator data	2011 definition A range of data was used to help quality assure 2011 Census estimates. These data included administrative sources (such as the number of people registered with a doctor) and other official NRS products (such as the mid-year population estimates).
Household	<ul style="list-style-type: none"> • One person living alone, or • A group of people (not necessarily related) living at the same address who share cooking facilities and share a living room or sitting room or dining area. <p>A household may also be:</p>

	<ul style="list-style-type: none"> • a person or a group of people living in sheltered housing or very sheltered housing (irrespective of whether there are other communal facilities), • a person or a group of people living in a temporary or mobile structure (for example a caravan, mobile home or boat) on any type of site that is their usual place of residence.
National Records of Scotland (NRS)	National Records of Scotland (NRS) is responsible for planning and carrying out the census in Scotland.
Outputs	All numbers, tables, graphs, maps and text that show or describe the results of the census. This includes all supporting information and metadata.
Quality assurance (QA)	Quality assurance (QA) is about identifying, anticipating and avoiding the problems that can arise from our data inputs or the methods and processes we use to calculate statistics.
Statistical Disclosure Control (SDC)	All methods applied to census outputs to protect the privacy of personal information. It includes making small changes to data, controlling access to data, and controlling the level of detail that is available to census data users.
Validation of Population Estimates (VoPE)	The VoPE process compares census data with existing data sources in order to verify that the census data are expected given the comparator data. This process focuses on geographic areas, population groups and topic areas where there are inconsistencies or need for further analysis.