

Scotland Census 2011 - Microdata

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30 June 2016

Overview

- ▶ What is Microdata?
- ▶ Brief history & improvements
- ▶ Methodology
- ▶ Scotland's Products

Overview

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What is Microdata?

- ▶ Microdata are small samples of data from the 2011 Census.
- ▶ Contain various characteristics of the records selected in the sample.
- ▶ Designed to protect confidentiality of respondents (Household or Individual).

History of Microdata

- ▶ First used in a census context in 1991.
- ▶ Known then as Sample of Anonymised records (SAR's)
- ▶ Available on [UKDS](#) as part of end user licence data.

Improvements to Microdata

- ▶ Nested samples led to more secure data.
- ▶ Greater level of detail.
- ▶ Introduction of a public use teaching file.

Methodology – how to create Microdata

- ▶ Simple random samples of Census data
- ▶ Stratification
- ▶ Sample sizes
- ▶ Geography

Scotland's Microdata Products

- ▶ 1% Public Use Teaching file
- ▶ 5% Safeguarded files (Scotland level & grouped council area).
- ▶ 10% Secure files (household level and individual level).

Census Results[Census Releases](#)[Results at a Glance](#)[Analytical Reports](#)**Microdata**[Microdata Teaching File](#)[Secure Microdata Files](#)[Safeguarded Microdata Files](#)[Origin Destination Statistics](#)[Alternative Populations](#)[Revisions and Corrections](#)[Commissioned Outputs](#)[Other Census Sources](#)[Census Data Explorer](#)[Supporting Information](#)[Using Census Data](#)[Scotland's Census 2021](#)**Microdata**

Microdata are small samples of data for whole households and individuals, which include some associated census characteristics but no information that could identify a household or individual.

Microdata products enable researchers to look at combinations of characteristics that are not generally available from the standard census tables, and to perform different types of analyses not possible from standard tabulations.

National Records of Scotland (NRS) is committed to making data available as widely as possible and is responsible for maximising the benefits from Scotland's Census 2011. As part of this it has released several different microdata products which seek to strike a balance between detail and security, allowing a flexible tool set for casual users as well as professional researchers. Three levels of microdata have been released for the 2011 Census:

[Microdata Teaching File](#)

This file contains anonymised records on a limited set of variables for a random sample of 1 per cent of people in the 2011 Census output database for Scotland.

[Secure Microdata Files](#)

The secure microdata files consist of random samples of 10 per cent of people and 10 per cent of households in the 2011 Census output database for Scotland.

[Safeguarded Microdata Files](#)

The safeguarded microdata files consist of two random samples, each of 5 per cent of people in the 2011 Census output database for Scotland.

Teaching file

- ▶ 1 per cent sample of the population.
- ▶ Universally available under the open government licence.
- ▶ 18 variables overall, low level of variable detail and no geographic breakdown.
- ▶ Primarily used for teaching purposes.

Teaching file – variable detail

Variable Name	Number of Categories	Variable Values
Record_Number	Unique reference ID	Unique reference ID
Region	1	S92000003
Residence_Type	2	C. Resident in a Communal Establishment P. Not resident in a Communal Establishment
Family_Composition	6 (also X)	0. Not in a family 1. Married/same-sex civil partnership couple family 2. Cohabiting couple family 3. Lone parent family (male head) 4. Lone parent family (female lead) 5. Other related family X. No code required (residents of a communal establishment)
Sex	2	1. Male 2. Female
Age	8	1. 0 to 15 2. 16 to 24 3. 25 to 34 4. 35 to 44 5. 45 to 54 6. 55 to 64 7. 65 to 74 8. 75 and over
Marital_Status	5	1. Single (Never married or never registered a same-sex civil partnership) 2. Married or in a same sex-civil partnership 3. Separated, but still legally married or still legally in a same-sex civil partnership 4. Divorced or formerly in a same-sex civil partnership which is now legally dissolved 5. Widowed or surviving partner from a same-sex civil partnership

Safeguarded files

- ▶ 2 files available – 5% Regional (Scotland) file and 5% grouped council area file.
- ▶ Intermediate level of detail and geography down to grouped council area's.
- ▶ 267,000 records and up to 82 variables.
- ▶ Available for use from the UK Data Service (users must have an end user licence).

Secure files

- ▶ 2 files available – 10% Individual file and 10% Household file.
- ▶ Highest level of variable detail available .
- ▶ Geography down to council areas.
- ▶ Highest levels of access limitations – files can only be accessed through ONS' Virtual Microdata Laboratory (VML) by an “approved researcher”.

Disclosure control

- ▶ Confidentiality of respondents very important.
- ▶ Microdata do not contain personal identifiers (e.g. names, addresses).
- ▶ Additional tests were carried out to protect against identification.

Supplementary documents

- ▶ Microdata user guide
- ▶ Sample codebooks
- ▶ Quality document
- ▶ Additional variable metadata

Notes of caution

- ▶ Relative simplicity of Microdata products
- ▶ Selecting a population base
- ▶ Sampling error
- ▶ Non-sampling error (e.g. coverage error, processing error)

Uses of Microdata

A variety of projects have used safeguarded microdata already, including:

- ▶ Teaching material for Social Statistics.
- ▶ Analysis on comparing survey data & census data on Religion.
- ▶ PhD research on the impact of online advertising.

Other UK products

The Office of National Statistics (ONS) and the Northern Ireland Statistics and Research Agency (NISRA) have also produced similar teaching ,safeguarded & secure microdata products.

They have been designed with similar methodology to Scotland – this would allow for a UK wide Microdata to be accessible.

How to access?

- ▶ Teaching file: Can be downloaded from the [Scotland Census website](#).
- ▶ Safeguarded files: available for download from the [UK data service](#)
- ▶ Secure files: can be accessed via the [virtual microdata laboratory](#) (VML) managed by ONS.
- ▶ NRS are currently working on options to bring the Secure Microdata files to Scotland, with the Bio quarter being a potential location.

Useful Links

- ▶ Scotland Census website:
<http://www.scotlandscensus.gov.uk/microdata>
- ▶ UK Data service: <https://census.ukdataservice.ac.uk/get-data/microdata>
- ▶ ONS website:
<https://www.ons.gov.uk/census/2011census/2011censusdata/censusmicrodata>
- ▶ NISRA website:
<http://www.nisra.gov.uk/census/2011/results/specialist-products.html>

Further information

- ▶ All data available at: <http://www.scotlandscensus.gov.uk>
Sign up there for our e-newsletter
- ▶ Enquiries: statisticscustomerservices@nrscotland.gov.uk
- ▶  @NatRecordsScot

Any Questions?