

CENSUS SECURE MICRODATA FILES

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User Guide

1 Introduction

1.1 Census Microdata

The 2011 Census Microdata products provide an alternative source of data to the standard 2011 Census releases, which consist of tables containing counts of how many people in one area have a certain attribute or attributes.

In contrast, microdata contain information from the individual respondents and households; this means that census microdata contains a rich source of data for researchers to use in their own analysis.

This data have been treated to protect the confidentiality of the respondents. Rather than data being delivered as tables of counts, data are stored in the same way as if the data had been collected by conducting a sample survey. Because a sample of cases is being made available, individual records contain limited information on a number of topics.

1.2 Secure Microdata Files

A variety of microdata products are available, balancing the level of detail in the data, the sample size and how to access the data.

The Secure Microdata Files represent the products with the highest level of detail and the largest sample size. As a result, they are also protected by the highest level of access limitation and are only available to Approved Researchers via the NISRA secure environment. Details of other microdata products can be found on the NISRA website.¹

¹ More information on other microdata products from the 2011 Census is available from:
<https://www.nisra.gov.uk/statistics/2011-census/results/specialist-products>



March 2015

Updated May 2017

The Secure Microdata Files consist of random samples of 10% of people or households in the 2011 Census output database for Northern Ireland. These include people classed as both usual residents and short-term residents.

There are two Secure Microdata Files:

The Individual file, which includes person-level data on 225 variables for over 180,000 individuals. The lowest level of geography available is Local Government District. Records include those resident in households and communal establishments; and

The Household file, which includes person and household level data on 212 variables for over 180,000 individuals within more than 74,000 households. This is a sample of ten per cent of all households and includes individual person-level records for each person living within those households. Where households contained no enumerated persons, records in the sample include only household-level data. The Household file allows linkage between individuals in the same family and the same household. Local Government District is the lowest level of geography available.

The Household and Individual files do not overlap and cannot be combined.

2 About the Secure Microdata Files

2.1 2011 Census

Census data are collected every ten years in Northern Ireland, as governed by the Census Act (Northern Ireland) 1969². Census Day for the 2011 Census was the

27 March 2011. Full information on how the 2011 Census in Northern Ireland was conducted is available on the 2011 Census page on the NISRA website.³

² The 'Census Act (Northern Ireland) 1969' is available from:

<http://www.legislation.gov.uk/apni/1969/8>

³ More information on the 2011 Census in Northern Ireland is available from:

<https://www.nisra.gov.uk/statistics/census/2011-census>



March 2015

Updated May 2017

The 2011 Census is the most complete available source of information on the population. However, despite efforts to reach everyone, no census is perfect and some people are inevitably missed. The Census database was adjusted to allow for such under-enumeration. Further information on how the 2011 Census was conducted and the treatment of missing data is available in the ‘Supporting Information’ section⁴ of the NISRA website.

2.2 UK Censuses and Microdata Products

The Northern Ireland Statistics and Research Agency (NISRA) is responsible for carrying out the census in Northern Ireland. Simultaneous but separate censuses took place in England & Wales and Scotland. These were run by the Office for National Statistics (ONS)⁵ and National Records of Scotland (NRS)⁶.

The 2011 Census Secure Microdata Files released by NISRA covers Northern Ireland only. Similar products for England & Wales are available from ONS. NRS have plans to produce similar products for Scotland.

2.3 Population Base

The Secure Microdata Files include data from the total Northern Ireland population, which includes usual residents, short-term residents and students living away from home during term time (categorised in the ‘population base’ variable).

The main population base for published statistical tables from the 2011 Census is the usual resident population as at Census Day, 27 March 2011. For 2011 Census purposes, a usual resident of the UK is anyone who, on Census Day, was in the UK and had stayed or intended to stay in the UK for a period of 12 months or more, or had a permanent UK address and was outside the UK and intended to be outside the UK for less than 12 months.

⁴ More information on how the 2011 Census was conducted and the treatment of missing data is available from:

<https://www.nisra.gov.uk/statistics/2011-census/results/supporting-information>

⁵ ONS website – 2011 Census: <https://www.ons.gov.uk/census/2011census>

⁶ NRS website – 2011 Census: <http://www.scotlandscensus.gov.uk/>



March 2015

Updated May 2017

If the data from the Secure Microdata Files are not filtered to include only usual residents, results may differ from published statistical tables. Many of the variables included in the dataset, however, contain values only for usual residents.

Students and schoolchildren in full-time education studying away from the family home were counted as usually resident at their term-time address. Basic demographic information only (name, sex, age, marital status and relationship) was collected at their non term-time (home or vacation) address. In the Secure Microdata Files, information collected at their non term-time address is available by filtering the Population Base variable to include only 'students living away from home during term time'.

Datasets including both 'students living away from home during term time' and 'usual residents' could thus include duplicate information on basic demographic variables for some individuals.

Therefore careful consideration should be given when choosing the appropriate population base for data exploration, and when comparing findings from the Secure Microdata Files with published reports.

Residents in communal establishments are included in the Individual Secure Microdata File but not the Household Secure Microdata File.

2.4 Geography

The lowest level of geography for the Individual and Household files is Local Government District.

2.5 Variables

Separate codebooks are available for the secure Individual file⁷ and the secure Household file⁸.

⁷ Person Codebook is available from:

<https://www.nisra.gov.uk/sites/nisra.gov.uk/files/publications/2011-census-results-secure-microdata-person-codebook.xlsx>



2.6 Availability

This data will be available within the NISRA secure environment in a number of formats including CSV.

2.7 Continuity between 2001 and 2011

There are some differences between the 2001 and 2011 Censuses, which may have implications for users. Full information on differences between the Census questions⁹ and definitions¹⁰ can be found in the ‘Supporting Information’ section of the NISRA website.

Information on the 2001 Census Samples of Anonymised Records (SARS)¹¹, the equivalent products to the 2011 Census Microdata, can be found on the UK Data Service website.

3 How were the samples drawn?

3.1 Sample size

Sample sizes have been chosen to be consistent with statistical disclosure control considerations and user requirements. The method by which the sample was chosen will remain confidential, as was the case for the 2001 Census SARS.

3.2 Stratification

Stratification enables the characteristics of a sample to be proportionally representative of the population by dividing the population into strata based on

⁸ Household Codebook is available from:

<https://www.nisra.gov.uk/sites/nisra.gov.uk/files/publications/2011-census-results-secure-microdata-household-codebook.xlsx>

⁹ ‘Comparability of the Census questionnaire in Northern Ireland between 2001 and 2011’ is available from:

<https://www.nisra.gov.uk/sites/nisra.gov.uk/files/publications/comparability-census-questionnaires-between-2001-and-2011.pdf>

¹⁰ ‘2011 Census Definitions and Output Classifications’ is available from:

<https://www.nisra.gov.uk/publications/2011-census-definitions-and-output-classifications>

¹¹ Further information on 2001 Census Samples of Anonymised Records (SARS) is available from: <http://census.ukdataservice.ac.uk/get-data/microdata.aspx>



key characteristics. Random samples taken from each stratum are then pooled to form the final sample.

The Secure Microdata File samples are stratified by Census Small Area within Local Government District. This method ensures good representation of data; the sample is more evenly spread, and is consistent with the user requirement for a multipurpose product that can be used for a wide variety of analyses. It also controls against extreme sample selection, ensuring for instance that an entire output area is not selected at random.

4 Confidentiality and Protection of Personal Data

Preserving the confidentiality of personal information provided by the public on their census questionnaires remains a top priority for the census.

Statistical disclosure control applied to 2011 Census data, including targeted record swapping and restriction of detail, additionally protects the attributes of individuals and ensures that there is always uncertainty surrounding any apparent attribute disclosure.

The Secure Microdata Files contain samples of 10% of people. **No personal identifiers (name, address, date of birth) have been included in any 2011 Census Microdata products.** However, due to the risk of disclosure, these products are only available to individuals who have been granted Approved Researcher status. Additionally, the data will only be available to access via the NISRA secure environment, a highly secure environment from which no data can be exported without specific approval.

5 How to gain access to the Secure Microdata Files

Access to the Individual file and the Household file will be available via the NISRA secure environment. Requests for an application form for accessing a secure microdata sample can be made by emailing rsu@nisra.gov.uk

Projects have to be approved and each variable requested has to be justified.



March 2015

Updated May 2017

Access to the Secure Microdata Files within the NISRA secure environment will only be granted to individuals with Approved Researcher status. This status will only be granted if the researcher is able to demonstrate that he/she:

- has the appropriate knowledge and experience necessary for handling potentially disclosive personal information;
- has provided satisfactory evidence supporting their application that illustrates their professionalism and technical competence to carry out the research proposal; and
- demonstrates a commitment to protecting and maintaining the confidentiality of the data during the creation of outputs and publications that arise during the proposal.

Additionally, the researcher must be able to demonstrate that their research serves one of the following public benefits:

- supporting the formulation and development of public policy or public service delivery;
- forms part of the programme of research covered by the National Data Strategy or otherwise supported directly or indirectly by the Economic and Social Research Council;
- supports an obligation of public law (e.g. Local Development Plans); and/or
- explores new statistical methods that can be used to produce statistics that serve the public good.

Further information and the relevant application forms are available from the Approved Researcher accreditation page on the NISRA-RSU website.¹²

¹² More information on approved researcher accreditation is available from:

<http://www.qub.ac.uk/research-centres/NILSResearchSupportUnit/Projects/ResearcherAccreditation/>



March 2015

Updated May 2017

6 Other Census products and getting more information

Further information from the 2011 Census on output products already published or planned for publication in the future can be found on the Northern Ireland Census 2011 Output Prospectus.¹³

For further information about census results please contact Census Customer Services.

Census Customer Services

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¹³ 'Northern Ireland Census 2011 Output Prospectus' is available from:
<https://www.nisra.gov.uk/publications/2011-census-output-prospectus>