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2021 Census Statistical Outputs Strategy

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CENSUS OFFICE FOR NORTHERN IRELAND



Northern Ireland
Statistics and Research Agency

Gníomhaireacht Thuaisceart Éireann
um Staitisticí agus Taighde

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2021 Census Statistical Outputs Strategy

1. Introduction

This section outlines Census Office's strategy for producing and disseminating the statistical outputs from the 2021 Census.

The strategy seeks to produce statistical outputs from the 2021 census in line with the Code of Practice for Statistics, so that users of the data, and citizens, can have confidence the statistics are "of public value, are high quality and are produced by people and organisations that are worthy of trust". It will result in statistical outputs that:

- Meet user requirements and will be both timely and flexible;
- Are disseminated to a pre-arranged timetable;
- Are safe, and are seen to be safe, in terms of maintaining confidentiality of census information held in relation to individuals and households;
- Are trusted by users and the public;
- Are produced through robust processes and to a high quality; and
- Provide value for money in terms of ease of access and use.

More specifically, Census Office are considering statistical outputs that:

- Include the development of a flexible dissemination system, which will allow users to access data to build tables that meet their specific needs;
- Provide for a number of headline, pre-planned tables;
- Include a Commentary and Analysis section in Statistical Bulletins and Press Releases;
- Include short stories and infographics that focus on particular population characteristics or subgroups; and
- Include metadata in all outputs to inform users.

The content of the strategy to date has been developed through consultation work undertaken after the release of 2011 Census statistical outputs and with users from 2016 to 2018. As such, the strategy reflects the current thinking in terms of optimising the 2021 Census statistical outputs to maximise the benefits to users.

A further consultation with users is planned for October 2021. The final design of the 2021 Census statistical output content will be subject to available resources, feasibility, testing, and feedback from users to this consultation.

2. Conduct of the 2021 Census in the UK

The Registrar General for Northern Ireland, the UK National Statistician and the Registrar General for Scotland released a [Statement of Agreement](#) in October 2015 on the conduct of the 2021 Censuses. In this document they indicated an intention to conduct the next census simultaneously across the UK. A similar agreement was developed for the 2011 Censuses that is believed to have enhanced the extent of harmonisation across the UK. However due to impacts of the global COVID pandemic, the National Records of Scotland moved the census in Scotland to 2022. The impacts of this move for UK statistics are still being evaluated.

A census is taken under the [Census Act \(Northern Ireland\) 1969](#). The necessary subordinate legislation, relating to the specific requirements for the census in Northern Ireland, requires legislative approval.

Each census within the UK is autonomous; however, the three Census Offices will aim to work in unison to ensure that the 2021/2022 Censuses are successful in providing high quality population and housing statistics for the UK, meeting the needs of users and any international requirements.

3. Harmonisation

The 2021 Census outputs will constitute consistent, coherent and accessible statistics for the UK, individual countries and geographic areas where it is possible and appropriate to do so.

Following the decision to move Scotland's Census to 2022, NISRA will work closely with the ONS and NRS to manage the dissemination of UK-wide census results where feasible.

For questions and topics that are comparable across the UK, NISRA will liaise with the other Census Offices to agree a set of common definitions and classifications to be used, with the intention of publishing consistent census outputs across the UK. Where possible, these will be based on international standards. This will ensure that the United Kingdom meets its international obligations in terms of the production of census statistics.

Similar to Scotland, the Government of Ireland decided to postpone the Census of Population of Ireland by one year to April 2022. NISRA will work with the Central Statistics Office (CSO), Ireland, to provide, where possible, key statistics for the island of Ireland. Specifically, CSO and NISRA plan to produce an Ireland and Northern Ireland census report after the completion of the censuses by both offices, similar to the published [report on the 2011 Census](#). An [agreement](#) has been signed by both the CSO Director General and the Registrar General for Northern Ireland on consultative arrangements for the 2021 Census. This continues the long working relationship that exists between the two Census Offices on the island of Ireland.

4. User Consultation

In 2015, Census Office began consulting with users on the conduct of the 2021 Census in Northern Ireland and delivered a number of public events to discuss topics for the next census. A [report on the Topic Consultation](#) was published in August 2016.

Census Office engaged further with users in 2018, with a consultation on the initial strategy for the 2021 Census Outputs. [Results](#) from this consultation were published in February 2021.

Census Office will continue its engagement in the future:

- A further consultation on the proposed design of the 2021 Census statistical outputs is planned for October 2021;
- Following the release of 2021 Census data, users will be asked to reflect on the utility of the data; and
- Through the continued work with the [Demographic Statistics Advisory Group \(DSAG\)](#).

The information gained through these activities will be carefully considered to further develop the Outputs Strategy. In particular, the strategy seeks to make the best use of the dissemination resources available to NISRA whilst making full use of the knowledge available through our joint work with the ONS, NRS and the CSO.

5. Vision for 2021 Census outputs

Our key objective is to get the greatest value possible from the census data, ensuring that it is easily accessible and provides the right content to meet the user requirements, whilst being mindful of the need to protect confidentiality and achieve value for money.

Census Office intends to build on the success of the 2011 Census in Northern Ireland. Consequently, the key strategic objectives from 2011 which have been retained for 2021 are:

- To provide high quality, value for money and fit-for-purpose statistics that meet user needs. They will also be consistent in format and content, and comparable across the UK as far as is possible in accordance with published timetables;
- To maximise overall response rates and minimise differences in response rates in specific areas and among particular population sub-groups;
- To protect, and be seen to protect, confidential personal census information; and
- To secure public and user confidence in the final results and deliver them in a timely manner.

The high level strategic aims outlined above, coupled with the undertakings given in the Statement of Agreement (between the Registrars General for both Northern Ireland and

Scotland and the National Statistician), play an integral part in shaping NISRA's vision for the 2021 Census statistical outputs in Northern Ireland. Importantly, the vision builds on the key lessons learnt from the 2011 Census and demonstrates that Census Office has worked closely with its key users both within Northern Ireland and from further afield.

Census Office aims to:

- Produce the 2021 Census outputs using recognised international classifications and, in the absence of these, UK based classifications such as Standard Industrial Classification of Economic Activities, Standard Occupational Classification and National Statistics Socio-Economic Classification;
- Implement a Statistical Disclosure Control policy that is, as far as possible, common across the UK;
- Ensure that census outputs are widely accessible;
- Provide a single point of access to 2021 Census results through a dedicated website, meeting the common needs of users and incorporating the flexibility for users to create their own products that have been appropriately protected from a statistical disclosure control perspective;
- Optimise e-dissemination by making a core set of tables containing key statistical outputs, to be specified in 2021/22, freely available on-line. This will involve working collaboratively with the other UK Census Offices in order to harmonise the outputs where possible;
- Provide population and household estimates by summer 2022 for the first phase of 2021 Census outputs;
- Provide access to comprehensive metadata that is released along with the corresponding output products and facilitates understanding of the information;
- Publish commentary and analysis of key statistics in accordance with the UK Statistics Authority Code of Practice;
- Produce a limited number of statistical bulletins and press releases where there is a requirement or a clear user need to do so;
- Create short stories and infographics to highlight the key findings of census outputs;
- Consider and respond to user requirements for specialist products, such as origin and destination, alternative populations and bulk downloads in a variety of formats using open data standards;
- Deliver an efficient customer service function, to respond to user queries and produce bespoke tables as and when required; and
- Continue to support specialised services such as the samples of anonymised records (microdata including secure, safeguarded and teaching files) and the Northern Ireland Longitudinal Study (NILS), all of which play a pivotal role in the vital research that the census supports.

6. Data Confidentiality

As stated above in the key strategic objectives, there is a requirement to protect individuals, households and businesses from being identified in any 2021 Census published table using Statistical Disclosure Control (SDC) methods. Targeted record swapping was the primary method of disclosure control in 2011 and Census Office propose to use this method again in 2021. The technique involves assessing individuals or households with rare or unique characteristics and swapping those at risk of identification with a similar individual or household from another area.

Census Office are also currently considering the development of a flexible dissemination system which will allow users to create their own tables. It is crucial that SDC methodology is incorporated into this product to protect against disclosure, especially disclosure that occurs when tables containing similar information are compared (differencing). To facilitate the introduction of a flexible dissemination system, Census Office will introduce a further, post-tabular SDC method known as 'cell key perturbation', which is based on a variant of the Australian Bureau of Statistics (ABS) methodology.

Cell key perturbation will be applied to the individual cells in each table. It should be noted that this methodology can lead to slightly different estimates depending on the structure of the table. However, the advantage of applying this additional level of statistical disclosure control is the more flexible and timely release of 2021 outputs.

For more information please refer to ['Statistical Disclosure Control Methodology for 2021 Census'](#).

7. 2021 Census Outputs Geography

In 2001 NISRA released census outputs for a range of administrative and statistical geographies. This included small levels of geography known as Census Output Areas and Super Output Areas which, due to their hierarchical nature, were used to create larger geographies such as Wards and Local Government Districts.

By and large the same geographies were used again in 2011, allowing users to directly compare data from both censuses. This use of the same geographic base for reporting the 2001 Census and the 2011 Census, the 1992 local government boundaries, was unusual; the 1971, 1981, 1991 and 2001 Censuses were each reported on a separate set of local government boundaries.

In 2015, following the revision of local government boundaries, a new set of Local Government Districts, District Electoral Areas and Electoral Wards were introduced. Census Office is bound to use an output geography based upon the current Local Government Districts. Consequently for 2021, to efficiently and safely meet this requirement, Census Office has concluded that the output geography must be revised. This is in line with the view expressed by respondents in the previous user consultation.

2021 Census data will therefore not be made directly available for the old 1992 local government boundaries.

For 2021 Census outputs a new small area statistical geography will be produced, consistent with the revised local government boundaries. This new geography, like the current, will consist of two similar geographic levels like the SOA and SA levels. This revised geography offers the ability to: improve and update the homogeneity of the areas with respect to housing tenure and accommodation type; improve the alignment of areas by removing intersections with building/property footprints, especially those built since 2001; and allow better alignment with landscape features such as roads, railways and rivers, due to new GIS techniques.

Census Office will continue to produce a 2021 Census Grid Square product. This will allow users to compare data for every census since 1971. Also, due to the high demand for statistics about towns and villages, Census Office will use Settlement Development Limits (SDLs) provided by the Department for Infrastructure to produce 2021 Census Statistics at settlement level. This will be based on an approximation from grid square statistics.

Census Office is looking into additional methods to produce estimates of outputs for alternative geographies. It is planned that this would allow an element of flexibility with outputs if any further changes to administrative geographies occur before a future census is taken.

A discussion of the need to revise Census geographies is available at on the [NISRA website](#).

8. Variable comparability over time

It is important to many users that census outputs are comparable over time. This was further reinforced by the [findings of the 2021 Census Topic Consultation](#) for Northern Ireland. To meet this user need, NISRA endeavour to ensure that questions and supporting information being developed for the 2021 questionnaire will be consistent with previous censuses where possible to allow comparisons over time.

9. Quality measures

In keeping with its high level strategic aims, NISRA's Census Office will develop and implement measures to ensure the quality of the census. Measures include:

- [Quality Assurance Strategy](#) to ensure that the 2021 Census outputs are fit for purpose and released in a timely manner.
- 2021 Census Coverage Survey to primarily estimate the undercount error in the census.
- 2021 Census Quality Survey to provide insight into the overall quality of the information being reported through the census.
- Consideration of the impact of COVID-19 on 2021 Census statistical quality. Our expectation is that the pandemic will present challenges to the data captured by some questions. For example, travel to work, and some populations who may no

longer be present, like overseas workers and students. Work is underway with the ONS and NRS to find possible solutions to these challenges. This will also be considered as part of the 2021 outputs consultation in October 2021.

10. Dissemination

In disseminating the 2021 Census results, emphasis will be placed on responsiveness to users' requirements on content, format and means of access, and on high standards in the production of statistics whilst meeting the requirements of the Code of Practice.

A core set of pre-defined tables, similar to the standard tables in 2011 ([Key Statistics](#), [Quick Statistics](#), [Detailed Characteristics](#) and [Local Characteristics](#)), will be freely available online in an open data portal based on the PxStat system. This PxStat based system will allow for an element of flexibility within each of the pre-defined tables, with users able to filter using the variables in the table and/or particular geographic areas (if the table includes geographies) to best suit their needs.

Alongside the pre-defined tables, Census Office plan to introduce a safe and secure flexible dissemination system. To achieve this, we are working with the Office for National Statistics (ONS) to develop an interactive table builder that will allow users to define their own tables, with the flexibility to select the geography, population base, and variables required.

Both of these systems will be available through a single point of access: the NISRA website.

Users who require more specialist products such as microdata (including Secure, Safeguarded and teaching files) may be able to access these via secure mechanisms such as the NISRA Research Support Unit (RSU), dependent on user requirements.

NISRA propose to publish the first outputs by summer 2022 and the majority of all other standard releases by summer 2023. These plans will be published in further detail in early 2022.

11. Conclusion

The Outputs Strategy seeks to build on the positive initiatives introduced through the 2011 Census. The questionnaire content has been informed through the consultation work undertaken in conjunction with users and through collaborative work with the other UK Census Offices.

Importantly, the strategy seeks to deliver on the aims that are implicit in both the Registrar General's agreement and the high level strategic aims for the 2021 Census.

Whilst challenging, the strategy seeks to improve the user experience by providing a single point of access to all census outputs and developing a flexible dissemination system that meet the needs of users.

The strategy also recognises the importance of (a) implementing robust and authoritative quality assurance procedures in order to ensure that the outputs are fit for purpose, (b) informing users in advance of exactly what outputs will be delivered and to what timetable, and (c) incorporating flexibility for users to create their own products.

This strategy provides a framework for planning and development that enables Census Office to prioritise future work. This will be reviewed following the 2021 outputs consultation and as the project progresses.

The overall design of 2021 Census output content will be evaluated against the following criteria:

Criteria	Description
Accessibility and Flexibility	<p>This covers the users' ability to easily locate and access 2021 Census data, including access to commissioned tables, safeguarded and secure products, metadata and a commentary to help users understand and interpret any published data.</p> <p>This criterion also includes access to the proposed flexible dissemination system that will allow users to develop tables to meet their specific needs as soon as the data are available.</p>
Timeliness of Release	<p>This is a measure of the punctuality of the release of census outputs and includes the release of specialist products (e.g. microdata and origin and destination). Census outputs should be produced as soon as possible after Census Day.</p>
Public Confidence	<p>This covers ensuring that data are seen to be anonymised and appropriate statistical disclosure controls have been implemented. This includes ensuring that the methods used to produce outputs are transparent and fully communicated to users.</p>
User Acceptability	<p>This covers testing the functionality of output solutions against user requirements. This can be assessed through this consultation process and from any other feedback provided.</p>