

Initial View on 2021 Census Output Content Design

Response to consultation

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Executive Summary

The Office for National Statistics (ONS) invited views on our “Initial View on 2021 Census Output Content Design” from 28 February to 23 May 2018. This consultation outlined our initial proposed design of 2021 Census outputs and the dissemination channels for England and Wales. This report contains our response to the user feedback we received in the public consultation.

Our vision is for flexible, timely and accessible census outputs. We want to make as many data available at the lowest geographic levels and as easily as possible, so users can access the data they need, whilst protecting confidentiality. The main benefits of the census will only be realised by users having access to high-quality statistics, released free at the point of use and as speedily as possible.

Overall, users agreed with our proposed output content and approach for disseminating 2021 Census data.

There was strong support for our strategy to disseminate census data via a flexible dissemination system and the associated statistical disclosure control approach. A total of 88% agreed or strongly agreed they would prefer to access data via a flexible dissemination system than wait for tables. There was also a need to obtain census data via a single point of access and have an option for downloading large volumes of data via an Application Programming Interface (API).

Users expressed a clear need for receiving data about income, especially at lower geographies to help users with analysis and service delivery. There was also an overwhelming need for timely and accessible origin-destination data.

We’ll continue to develop the products we outlined in the consultation. It is our intention to adopt the flexible dissemination system for census outputs and utilise its benefits beyond census and for other datasets. We’ll aim for a fully functioning flexible dissemination system to be available before census day to allow user familiarisation with the interface. We’ll also continue to develop the statistical disclosure control methods and seek external assurance.

This consultation focused on the technical aspects of census outputs. We’re currently developing our analytical programme, which will support the release of 2021 Census data. As outlined in the publication “Help Shape Our Future: The 2021 Census of Population and Housing in England and Wales”, ONS will provide analysis rather than just data tables to support communities in understanding their needs. The aims of these analyses are to provide the most relevant and insightful commentary for these communities, to better understand their needs and inform policy and service delivery. This will be done through analysing the full range of census topics alongside other relevant data sources to comment on particular themes, such as health.

Most importantly, we’ll continue to closely engage with users and communities throughout the duration of the design and dissemination of outputs and the analytical programme. This is to ensure we’re able to deliver products that meet needs.

Introduction

The Office for National Statistics (ONS) invited views on our “Initial View on 2021 Census Output Content Design” from 28 February to 23 May 2018. This consultation outlined our initial proposed design of 2021 Census outputs and the dissemination channels for England and Wales.

Our vision is for flexible, timely and accessible census outputs. We want to make as many data available at the lowest geographic levels and as easily as possible, so users can access the data they need, whilst protecting confidentiality. The main benefits of the census will only be realised by users having access to high-quality statistics, released free at the point of use and as speedily as possible.

Our initial view was based on:

- the evaluation of the design and delivery of 2011 Census output content
- our current understanding of user need and knowledge of potential technological and methodological solutions
- our current understanding of costs involved to develop and implement possible outputs and dissemination system
- our aspirations for using administrative data to improve and supplement outputs

Our consultation covered all aspects of 2021 Census outputs, including our plans for a flexible dissemination system to access the majority of census data and the approach for statistical disclosure control (which safeguards confidentiality). We also set out our plans for specialist products (including microdata and origin-destination products), geography (grids and parishes) and our aspirations for using administrative data to improve and supplement outputs.

This report contains our response to the user feedback we received in this public consultation.

There were 196 responses to the consultation, with more than half of these from local authorities. We’ve considered the responses users provided against the following criteria: **accessibility, flexibility, timeliness, user acceptability** and **public confidence**. We also looked at the type of work being undertaken by users when considering the responses.

Overall, users agreed with our proposed output content and approach for disseminating 2021 Census data.

Flexible dissemination system

For 2021, we are proposing to disseminate census data through a web-based flexible dissemination system. This will allow users to create their own datasets by selecting the geography, population base and variables they require. The statistical disclosure control will be applied dynamically as part of the request. This will make the results of the census more accessible to users and delivered faster and more flexibly. The intention is for users to be able to access at least the same level of detail in variables, geographies and population bases as they could for the 2011 Census.

A total of 88% of respondents either agreed or strongly agreed that they'd prefer to access data via an online flexible dissemination system sooner after census day, rather than wait for ONS to develop tables. Users considered earlier, more timely access to census data and not waiting for ONS to produce tables to be beneficial, especially when requiring data about specific population groups. Users were generally satisfied with the proposed statistical disclosure control approach.

We're pleased with the mainly positive response users have provided, but we recognise this approach may not satisfy all users.

We're continuing to develop the flexible dissemination system to ensure it meets user needs. This includes:

- developing the statistical disclosure control methodology and seeking assurance of our methods from a wide range of experts – the UK National Statistician is continuing to support this work
- developing guidance for users to explain the statistical disclosure control methodology and how to use the data
- seeking a solution to build the flexible dissemination system within the ONS IT architecture and developing the user interface on the ONS website
- continuing engagement with users to further understand the specific functionality and design elements that are preferable and aim to incorporate these into the flexible dissemination system design
- ensuring the flexible dissemination system provides the option to access data in Welsh, where applicable
- aiming to have a fully functioning version of the flexible dissemination system on the ONS website before the release of 2021 Census estimates
- providing access to an ONS Application Programming Interface (API)
- stress-testing the flexible dissemination system before its launch to ensure it can withstand the expected volume of users

We'll also continue to provide a service for creating bespoke or commissioned outputs that have not been included in standard output products following the 2021 Census. We'll apply the same statistical disclosure control methodology as all other standard outputs.

It's our intention to utilise the benefits of the flexible dissemination system beyond outputs from 2021 Census. Its application will allow users to access wider ONS data, including outputs based on administrative data.

Our aim is to release the initial findings within 12 months of the census, and all data within 24 months. We'll release the main national and local results, to a pre-announced timetable, as speedily as possible. These results will be complemented by a range of other outputs which we'll make available online, over time, as they're completed.

Disseminating high volumes of aggregate data

Users told us there was a preference to obtain census data via a single point of access, and a need for downloading large volumes of data. We've many users who already use APIs in their work and would value this functionality to reduce the time and money required to import data into their systems. It would also increase the accessibility of census data.

We intend to work closely with users to understand their requirements for the delivery of high volumes of aggregate data and develop an API that meets their needs. The range of data available through the API would be same as provided through the flexible dissemination system and user interface on the ONS website.

We're aiming to produce an API in advance of the dissemination of census data to allow the timely delivery of data and give users the chance to embed this in their systems.

We'll also provide guidance to enable users to understand and fully utilise the API and promote its availability.

Using administrative data to improve and supplement outputs

To complement the release of census data, we intend to create outputs where census data will be enhanced by integration with data from other sources. Users indicated a clear need for these outputs and the highlighted benefits these outputs would bring to their work.

Income

A total of 78% of respondents stated they would be most interested in receiving data about income derived from administrative data. Income data at lower geographies would assist users with their analysis and service delivery, particularly in understanding social inequalities, deprivation, social exclusion, travel patterns and health in local authorities.

Over the last three years, we've developed personal and household total income estimates for small geographic areas based upon administrative sources. We'll be continuing to develop these estimates, with a view to develop census-type income data that can be integrated with the data collected in the 2021 Census. This would potentially enable multivariate analysis of total individual and household income for small geographic areas through cross-tabulation of income with a range of census variables.

In December 2018, we'll publish Admin Based Income Statistics (ABIS)¹. These statistics will follow on from the Income Research Outputs published in December 2016² and October 2017³. These new Admin Based Income Statistics will be defined as experimental statistics. As such, we'll seek feedback on the ABIS with a view to improving the statistics in terms of coverage, quality and coherence to meet user needs.

Housing

Users also provided us with feedback on their need for data about property size and a more detailed breakdown of type of property. This data would enable a better understanding of housing stock and inform neighbourhood planning.

¹ <https://www.ons.gov.uk/census/censustransformationprogramme/administrativedatacensusproject/administrativedatacensusresearchoutputs/populationcharacteristics/adminbasedincomestatisticsenglandandwalestaxyearending2016>

² <https://www.ons.gov.uk/census/censustransformationprogramme/administrativedatacensusproject/administrativedatacensusresearchoutputs/populationcharacteristics/researchoutputsincomefrompayeandbenefitsfortaxyearending2014>

³ <https://www.ons.gov.uk/census/censustransformationprogramme/administrativedatacensusproject/administrativedatacensusresearchoutputs/populationcharacteristics/researchoutputsincomefrompayasyouearnpayeandbenefitsfortaxyearending2016>

The most comprehensive housing data currently available to ONS is provided by the Valuation Office Agency (VOA). We'll be continuing to seek access to administrative data on housing and to build knowledge about the quality of these data. We're using the VOA data to explore:

- mapping property types collected in the census against information provided by VOA data and other administrative sources
- assessing the quality of VOA data on property size (both number of rooms and floorspace), which could support research into overcrowding and quality of life
- if it can be used as a source of information on property age

Microdata

Microdata are samples of unit-record data for whole households and individuals. They include some associated census characteristics, but no information that could identify a household or individual. The responses to the consultation indicate microdata samples are being used for research and analysis across a range of sectors and themes. However, we're aware there's still a large proportion of respondents to the consultation who did not use the microdata samples after 2011 Census.

We'll continue to provide access to microdata samples for users following the 2021 Census and widely promote their benefits. We've already created a microdata working group. This is so we can work closely with users of these products to develop a specification that meets their needs, including the variables to be included and need for UK harmonisation. The design of the public microdata sample will not enable individuals to be identified. For the safeguarded and secure samples, the access arrangements in place will restrict users from publicly identifying individuals included in the sample.

Origin-destination

Origin-destination (flow) data produced following the 2011 Census show the flows of people from one place to another.

We're pleased to hear from users about the great value of this product for service design, informing policy and analysis. A total of 72% of respondents reported having worked with a least one origin-destination product. We're aiming to release origin-destination data earlier than we did following the 2011 Census to ensure maximum usage and relevance of the data.

Historically, it's been difficult to find a suitable statistical disclosure control methodology that protects the confidentiality of the data, but allows data to be available to meet user needs. We're now exploring using a statistical disclosure control methodology for this product that aligns with our overall approach for 2021 Census outputs.

We've already created a working group to ask for feedback on our proposed statistical disclosure control methodology. Through this group and other engagement, we'll develop this product, including exploring further the geographies and variables users require in the origin destination data. We also intend to provide clearer metadata and guidance around using the origin-destination products. We intend to publish publicly available origin-destination data through the ONS website and further explore the design of the user interface allowing access to this data.

In parallel we are researching the potential of using mobile phone data to estimate commuting flows. We published our first report on this in 2017⁴.

Geography – Parishes and grids

We asked users about two geography products (parishes and grids) that we produced for the 2011 Census, to understand the user need for these data in the 2021 Census and help inform our future research.

Geography: Parishes

Users told us there's been an increased importance placed on parish-level statistics since the 2011 Census, especially due to the requirement for data to inform Neighbourhood Plans. We'll continue to publish population statistics on parishes following the 2021 Census.

We've started working with Ministry of Housing, Communities and Local Government, to explore the possibility of creating a new statistical geography consisting of parish groups. This would be derived from the administrative geography of civil parishes. We can then explore whether we'll be able to release population estimates for all grouped parish councils using best-fitting from Output Areas. We'll continue to engage with users to understand the acceptability of the grouped parish council approach.

Geography: Grids

Users provided several examples where grid-based statistics have been or would be beneficial to their work, for example when used alongside environmental or to negate the effects of irregular administrative boundaries.

We plan to produce estimates on one-kilometre grid squares as we did in 2011. In addition, we want to demonstrate to users how estimates produced on this geography could be useful to research and analysis. We're currently undertaking

⁴ <https://www.ons.gov.uk/census/censustransformationprogramme/administrativedatacensusproject/administrativedatacensusresearchoutputs/populationcharacteristics/researchoutputsusingmobilephonedatatoestimatecommutingflows>

research to establish an appropriate projection system to use, the variables available, and whether nested grid squares could be provided for areas that meet certain population thresholds.

ONS Geography will be holding a public consultation in 2019 to further explore user needs for geography products and services we provide following the 2021 Census.

Metadata

In 2011, we provided a range of documents about the information contained within the data tables and supporting information about the quality of outputs and the definitions used.

The responses to the consultation clearly indicate the importance of providing metadata that's easily accessible to all users. A total of 86% of respondents had used the 2011 Census User Guide, which contained the information need to understand and use statistics from the 2011 Census. However, they also demonstrated there's no consensus view on how we should provide supporting information to users.

We'll ensure all supporting information is published alongside outputs and is sufficiently promoted. We aim to carry out further user research and consider the needs of different user types to inform our planning and design of metadata. We'll consider the different ways in which metadata can be provided in terms of location, quantity and detail. This includes how we'll provide metadata through the flexible dissemination system and when using an API and Geographical Information System (GIS) software. We'll also commit to providing a Welsh translation of metadata, where required.

Wider analytical uses of census data

We're currently developing our analytical programme, which will support the release of 2021 Census data. A total of 63% of respondents had read the analysis and commentary published alongside the 2011 Census data. Most users preferred to read the description of key outputs via the statistical bulletins and also highlighted the importance of visualisations.

We intend to provide analysis, commentary and visualisations to help support the release of 2021 Census data. We'll build on previous analytical products and provide more detailed analysis and insight. We want to support communities to understand their needs and inform policy and service delivery. This will be done through analysing the full range of census topics alongside other relevant data sources to comment on particular themes, for example health.

We're working towards making our census data and analysis as engaging and accessible to as wide a range of audiences as possible. We're also aware the 2011 Census analysis and commentary was difficult to find. We've improved the design and functionality of the ONS website, which users should find easier to navigate.

We'll outline our plans for this closer to the release of 2021 Census data.

UK Harmonisation and UK Statistics

ONS has a responsibility for disseminating 2021 Census statistics for the UK, where data collected permits this to be done. A total of 64% of respondents said that being able to access UK data was either important or very important to their work. Further, 86% of respondents stated they would expect to access data about each UK country through a single website.

We've already started work with our colleagues in Scotland and Northern Ireland to enable the harmonisation of variables and timely dissemination of UK data. Our preferred option for doing so is via a single point of access for users. We're working to ensure a technological solution is available to allow this to happen. We'll be conducting further user research to identify the variables, geographies and population bases required in our UK releases and how users would expect to access UK data.

International comparability of 2021 Census results

The consultation responses illustrate the importance to users of being able to compare UK estimates to international datasets, particularly in the changing European and global political and economic climate. We recognise the importance of producing UK-level data that's internationally comparable.

A large part of the UK-level data produced in 2011 was required by European Union (EU) census legislation. We'll need to review our exact approach as the outcome of the EU withdrawal negotiations become clearer, but there are some clear advantages of producing the UK-level census statistics required by the EU.

We'll continue to meet our international commitments to supply census data to the United Nations Statistical Commission following the 2021 Census.

Next steps

We'd once again like to thank everyone who gave us their views by responding to the consultation. The evidence you've provided is invaluable to help us to identify the user needs for 2021 Census outputs and prioritise our future research. We'll continue to develop the products we outlined in the consultation and closely engage with users throughout the duration of the design and dissemination of outputs. This is to ensure we're able to deliver products that meet their needs and address user concerns. The final design and content of 2021 Census outputs and overall dissemination approach will be driven by statistical and technical methodologies, but, most importantly, user needs.

We'll also continue to work closely with our colleagues at the National Records of Scotland and Northern Ireland Statistics and Research Agency to ensure comparability of results, where possible.

If you'd like to give us more feedback, please contact the 2021 Census Outputs and Dissemination team at census.outputs@ons.gov.uk or visit [our webpages](#).