

Assessment of compliance with the Code of Practice for Statistics

2021 Censuses in the UK – Preliminary findings

*(produced by Office for National Statistics,
National Records of Scotland and Northern
Ireland Statistics and Research Agency)*

2021 Censuses in the UK Assessment process

The Office for Statistics Regulation (OSR) is carrying out an assessment of the UK Censuses produced by the Office for National Statistics (ONS), the National Records of Scotland (NRS) and the Northern Ireland Statistics and Research Agency (NISRA). The assessment will allow the Office for Statistics Regulation to recommend whether the Census outputs should be designated as National Statistics, in accordance with the requirements of the Statistics and Registration Service Act 2007, when they are first released.

The UK Censuses allows users – including government, local authorities, academics, commercial businesses and the general public – access to important data and statistics on the people and households of the UK. These data and statistics must be of high quality and be of public value to meet the standards set out in the Code of Practice for Statistics. The purpose of the assessment is to review whether these standards have been met.

This report covers the preliminary phase of the assessment – covering the extent to which Census offices' planning, engagement and development activities are compliant with the Code, as well as reflecting on the suggestions which came out of the Phase 3 assessment report for Census 2011. Some aspects of Census offices' plans and preparations are in the early stages and the preliminary findings from this assessment give an early view to inform future progress with Census planning. A subsequent assessment report, which we will aim to publish in summer 2021, will cover compliance with the remaining practices of the Code, to include, for example, provisional assessment of plans for the publication of the various Census outputs.

We also expect to carry out a review, which will start in late 2023 and will involve an assessment of the Census outputs in light of users' views.

The assessment team will be in ongoing conversations with ONS, NRS and NISRA throughout and where appropriate may publish additional materials in the interim.

As part of the main reporting phases we will engage with users and other stakeholders about their views on Census plans, progress and outputs. These form an important part of our judgment about the compliance of Census data and statistics with the Code. As with Census offices, we would welcome an ongoing dialogue with users or stakeholders as we move toward Census day and beyond. If you would like to contact the assessment team, please email regulation@statistics.gov.uk.

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Introduction

- I.1 The Census is one of the most important sources of official statistics, informing decisions about almost every aspect of life within the UK. It is of fundamental importance in allocating billions of pounds to local areas by the UK government and devolved administrations, as well as grants to voluntary sector organisations. The Census helps every person in the UK get a better understanding of the places in which they live and work.
- I.2 The real value of the Censuses will be realised on the release of Census outputs. Census offices will have to deliver high quality data and statistics in a variety of forms to support the wide range of different uses required. It is essential that the data and statistics from the 2021 Censuses produced by the Office for National Statistics (ONS), the National Records of Scotland (NRS) and the Northern Ireland Statistics and Research Agency (NISRA) are reliable and provide valuable insights, meeting the rigorous standards of trustworthiness, quality and value outlined in the Code of Practice for Statistics¹.
- I.3 This first assessment report outlines our preliminary findings from our assessment to date. The report considers to what extent the planning, engagement and development activities undertaken by the three Census offices in preparation for the 2021 Census are compliant with the Code. Its preliminary findings provide an early indication for each Census office to help inform future progress with their planning and development as they move towards Census day in March 2021.
- I.4 This report identifies areas of strength in which we are encouraged by progress made by Census offices to date, or with their future plans. It also highlights some of the main risks we have identified within the planning and development work undertaken by each Census office and recommend some areas for Census offices to focus on as a priority in their plans.
- I.5 Census offices have published reports^{2 3 4} on how their plans and progress to date align with the standards of the Code. We welcome this transparent approach in making a public statement about their commitment to the Code.
- I.6 These reports present evidence and examples of how each Census office has considered suggestions raised in OSR's assessment of the 2011 Censuses in the UK: Phase 3⁵. We are content that Census offices have built on the positive findings from this report. Where suggestions made for the 2011 Census are also relevant to the 2021 Census these have been brought forward into findings within this preliminary report.
- I.7 This report is structured around four main themes relating to 2021 Census activities to date, relating to different aspects of trustworthiness, quality and value. These themes are:
 - a. User engagement and question development
 - b. Methods, data and quality management
 - c. Census outputs and dissemination
 - d. Planning, management and ways of working

¹ <https://www.statisticsauthority.gov.uk/code-of-practice/>

² <https://www.ons.gov.uk/census/censustransformationprogramme/census2021outputs/nationalstatisticsaccreditation/howtheofficefornationalstatisticsisensuringthe2021censuswillservethepublic>

³ [https://www.scotlandscensus.gov.uk/documents/census2021/How the National Records of Scotland is ensuring Census 2021 is trustworthy high quality and of value to users.pdf](https://www.scotlandscensus.gov.uk/documents/census2021/How%20the%20National%20Records%20of%20Scotland%20is%20ensuring%20Census%202021%20is%20trustworthy%20high%20quality%20and%20of%20value%20to%20users.pdf)

⁴ <https://www.nisra.gov.uk/sites/nisra.gov.uk/files/publications/how-nisra-is-ensuring-that-census-2021-will-serve-the-public.pdf>

⁵ <https://www.statisticsauthority.gov.uk/publication/special-assessment-of-the-2011-censuses-in-the-uk-phase-3-office-for-national-statistics-national-records-of-scotland-and-the-northern-ireland-statistics-and-research-agency/>



- I.8 Against each theme we consider the extent to which we think Census offices are managing and progressing plans in the area well, what more they might need to do, and in some cases whether it is too early to make a judgment.
- I.9 The three pillars of trustworthiness, quality and value will be considered throughout this report and underpin all judgments we make during the assessment process.

Findings

- F.1 This report identifies a range of preliminary findings from the assessment of 2021 Censuses in the UK, which require action on behalf of Census offices to improve compliance with the Code of Practice for Statistics. These actionable findings are reproduced below:
- F.2 Some users have reported difficulties in locating certain documents on the Census offices' websites. The design and navigation through these websites vary notably between Census offices and may provide a barrier to the easy access of information for users. **Census offices should consider the accessibility of research and other Census information on their websites and consider aligning website design and content where possible to provide a common user experience.**
- F.3 There has been much public debate relating to proposals for Census questions and the question development process across Census offices. Census offices must ensure their actions and decisions are visibly taken with the honesty, integrity and independence necessary to deliver data and statistics that are of high quality and serve the public good. **Census offices should be open and transparent on their decision-making processes and in their decisions on Census questions and guidance, particularly in relation to any areas of contention.**
- F.4 We consider that there should be more focus on the needs of Census users at a UK level, in three areas:
- i. Census offices could benefit from working together more closely to better engage with users and stakeholders of UK Census data and statistics who have views and insights that are relevant across Census offices. UK Census users and stakeholders may be unnecessarily overburdened if they are required to submit multiple feedback or consultation responses on similar topic areas across Census offices. **Census offices should consider how best to engage with users and stakeholders of UK Census data and statistics users and coordinate activities as appropriate.**
 - ii. Published plans, research and topic reports from the individual Census offices are not always sufficiently clear on how country-specific proposals then relate to UK users' needs and about the impact of these decisions on the availability of on harmonised UK data. **Census offices should be clear about the impact of country-specific decision making for UK Census data and statistics and work together to provide greater transparency around their plans and decision making in meeting the needs of users interested in UK Census outputs.**
 - iii. Proposals from Census offices on Census questions will be subject to relevant legislative processes in finalising arrangements for Census in 2021. **Census offices should provide users, stakeholders and decision makers with information on harmonisation of Census questions and the impact on outputs at UK level to help inform users and support decision making.**
- F.5 Census offices have a work programme scheduled to establish and evaluate the data sources that will be used to support Census activities. In some cases, we are not fully assured that the necessary conversations with all the various data suppliers are taking place to inform the understanding of the nature, operational context and overall quality of the sources to be used. **Census offices should build their awareness of the relative strengths and limitations of any administrative, commercial or other data sources used in the production of Census outputs, by regular engagement with suppliers. This should be undertaken on an ongoing basis and as part of a normal way of working.**
- F.6 Census offices are developing their quality management approaches and developing various methods to support Census operations, data processing and outputs. This includes addressing potential biases between online and paper collection modes. However, the

timing for publication of methodology documentation and quality assurance arrangements is unclear. **Census offices should make information on the methodology and quality assurance arrangements available to users at the earliest opportunity.**

- F.7 Users told us that they were unclear at what points certain decisions will be made or when certain information will be made available. While planning documents are published, there is no easily accessible high-level plan of key Census milestones. **Census offices should provide users with an indication of future Census milestones – including future user engagement opportunities, publication of further research or reporting, and legislative milestones – to provide an added level of transparency and support trustworthiness and public confidence.**
- F.8 Use of internal review, audit and other independent measures to evaluate the effectiveness of processes is important across all three Census offices and provides additional safeguards. **Census offices should be clear to users what assurance mechanisms are in place and be open about identified areas for improvement in a way that is a proportionate and accessible to users.**
- F.9 We expect Census offices to act on these findings as part of enhancing the public value, quality and trustworthiness of the data and statistics from 2021 Censuses in the UK. We encourage Census offices to work collaboratively to address the findings. We expect Census offices to report back to us by May 2020, providing an update on progress.
- F.10 The UK Statistics Authority will decide whether to confirm the National Statistics designation, based on OSR's advice, prior to publication of Census outputs in 2022; Census offices' actions to address these findings will inform that advice.

Theme 1: User engagement and question development

- 1.1 A successful Census will result in data and statistics that are of sufficient quality, meet the needs of users and support a range of decision making, research and analytical purposes. To be able to deliver this, Census offices must involve and engage with users and stakeholders throughout the Census development. Census offices must understand uses of the Census data and statistics, the needs and priorities of users, and keep users up to date and manage expectations on progress and planning. User engagement serves a variety of purposes and informs various aspects of Census development.
- 1.2 This report theme particularly highlights question development as it is timely to reflect at this point on how Census offices have approached the development of Census question proposals and specifically how users have been engaged with throughout the process. Lessons learned in relation to this may be applicable in the future for other aspects of Census development.

Engagement

- 1.3 The Census is a significant undertaking and of significant importance in the provision of data and statistics on the population of the UK. All three Census offices have undertaken extensive engagement programmes with a wide variety of users and stakeholders that reflects the nature of the exercise. Where any gaps in user engagement have been identified, Census offices have sought to rectify any failings in their approach to consultation or engagement. A variety of channels have, or will be, utilised to promote, engage, and gain insight and feedback from users including dedicated twitter accounts, newsletters, advisory group minutes, open events, formal consultations, targeted user meetings and dedicated websites.
- 1.4 Users, stakeholders and interested parties can find information on Census plans for 2021 and research outcomes such as topic reports from Census offices' websites. Each Census office website has a different layout and some users have reported difficulties in locating certain documents. Census offices have been considering their web services. For example, NRS has engaged with users about the design and accessibility of its website, both for accessing 2011 Census data and for 2021 Census documents, at its outputs event in June 2019. When the 2021 Census outputs are released, Census offices should ensure the statistics, data and supporting information are easily accessible to users. However, accessibility of plans and information on progress and development are relevant now and as we move towards Census day itself. **Census offices should consider the accessibility of research and other Census information on their websites and consider aligning website design and content where possible to provide a common user experience.**
- 1.5 Each Census office has a responsibility and focus on its own Census user and stakeholder base. The assessment team has attended a number of events aimed at wider Census users, local authorities – as both users, data suppliers and integral players in Census operations – and other stakeholders or special interest groups. These events seemed well attended and Census offices created an environment of open debate and discussion. This served to provide attendees with a platform to hear and understand plans and progress on Census and to share concerns or issues with a range of Census teams.
- 1.6 We have seen much positive collaborative working between Census offices in many areas. However, when we consider user engagement, further benefits could be achieved from working together more closely to better engage with users and stakeholders of UK Census data and statistics. UK Census users and stakeholders - including academics, commercial

organisations, and groups who have a particular interest in certain questions and topic areas – have views and insights that are relevant across Census offices.

- 1.7 We have heard from some of these users that they are less likely to engage with the other two Census offices depending where they are based, and while we sometimes see attendance from other Census offices at user events, Census offices could do more to encourage engagement from this wider audience. We also consider that UK Census users and stakeholders may also be unnecessarily overburdened if they are required to submit multiple feedback or consultation responses on similar topic areas across Census offices. **Census offices should consider how best to engage with users and stakeholders of UK Census data and statistics users and coordinate activities as appropriate.**
- 1.8 Census offices not only engage with users to understand their needs but are also planning and beginning to engage with the wider public to communicate key messages for Census respondents. Messages around expectation for online completion and associated data security arrangement for example will be an important feature in meeting expected response targets. NISRA is basing its branding around ONS's plans and will be adapting marketing campaign materials for a Northern Ireland audience. This approach is a good example of collaborating and sharing resource and expertise to achieve common goals.
- 1.9 There is increasing coverage and interest in the Census from the media, raising the profile of the 2021 Census. For example, in early August there were news reports linked to ONS's Let's Count programme⁶ which teaches children in schools about the 2021 Census and Census rehearsal. Aimed primarily at schools in England and Wales Census rehearsal areas, primary schools can register for the Let's Count education programme. Not only is this a strong example of promoting the importance of Census and data and statistics to young people, the press coverage would raise visibility of the Census with the wider public.
- 1.10 ONS has told us that it intends to develop the Let's Count programme using data from 2021 Census to support teaching and learning; two separate programmes will be run for primary and secondary schools. This would supplement the provision of the microdata teaching file⁷, which is an educational tool to support the teaching of statistics and geography at GCSE and higher levels.

Question development

- 1.11 Census offices continue to undertake a range of work linked to the Census questions and associated guidance. From feedback following Census 2011 and topic consultations, Census offices have assessed the user need for amendments or additions to Census questions. They have set out clear criteria for judging where there should be changes to Census topics including other available data sources, comparability with previous Censuses and UK comparability.
- 1.12 Ultimately the decisions on Census questions will be taken by the respective parliaments. However, Census offices in providing proposals on Census questions must offer a clear evidence base for those proposals. This evidence will be based on question research and informed by question testing and further consultation from users and interested parties. Much of this information is published by Census offices in topic reports on their websites.
- 1.13 There has been much media attention and public debate relating to proposals for Census questions and the question development process across Census offices; we have received feedback from several groups who have a particular interest in certain questions and topic areas during the course of this assessment. The importance of the Census reflects the strong views from users, with often differing opinions and viewpoints. For example, in relation to the development of sex and gender identity/transgender status Census questions and related guidance, some users consider there has been a lack of transparency in relation to some aspects of the question development and testing

⁶ <http://www.ichild.co.uk/tags/browse/445/Lets-Count--The-Census>

⁷ <https://www.ons.gov.uk/census/2011census/2011censusdata/censusmicrodata/microdatateachingfile>

processes and continue to raise concerns on how the quality of Census data will be affected given the proposals being developed. Census offices must ensure their actions and decisions are visibly taken with the honesty, integrity and independence necessary to deliver data and statistics that are of high quality and serve the public good. **Census offices should be open and transparent on their decision-making processes and in their decisions on Census questions and guidance, particularly in relation to any areas of contention.**

- 1.14 ONS and NRS will submit their proposals for Census questions to respective parliaments at the end of 2019. Given the political position, the relevant timing of the legislative process for the 2021 Census in Northern Ireland is not confirmed. In previous Censuses there have always been some questions which are not harmonised across Census offices. We consider that greater transparency is needed on the harmonisation or otherwise of current proposals for new and existing Census questions and related guidance, the impact on UK data and statistics, and the justification for any differences between countries. During this assessment we were told by ONS's harmonisation team about plans to release information in relation to the sex and gender identity/transgender status question in autumn 2019. We welcome this development and would encourage the release of information across the range of Census questions and guidance at the earliest opportunity. **Census offices should provide users, stakeholders and decision makers with information on harmonisation of Census questions and the impact on outputs at UK level to help inform users and support decision making.**

Theme 2: Methods, data and quality management

- 2.1 The three Census offices are employing professional judgments about the method of collection, preparation and analysis of Census data in ways designed to ensure that users expressed needs will be met. Census offices are seeking to innovate to employ the best available methods and to use recognised standards and definitions to enable cross-UK harmonisation, wherever possible. They are also preparing for comprehensive public-facing testing to take place in October 2019.
- 2.2 In order for the Census outputs to fit their intended uses, they need to be based on appropriate data and methods. The Census rehearsals taking place from October 2019 will provide a key opportunity to test Census end-to-end processes, to learn lessons and make improvements based on rehearsal findings. Census offices have further work to do to assure themselves that the administrative data used for sampling, quality assurance and Census outputs are complete, reliable and suitable for their intended purposes.

Census data collection

- 2.3 Census offices are seeking to use online collection as the primary mode of data collection, aiming for upwards of 60-80 per cent of respondents completing online – with varying ambitions for online completion across the offices. This aims to bring benefits such as reducing respondent burden, enhancing data quality through in-built validation checks, and enable faster processing of Census data and statistics. NRS and ONS are separately developing technologies and procedures to be able to deliver Census online. NISRA's planned adoption of ONS online questionnaire software, data collection technology and initial processing systems should support an efficient and uniform approach to data collection and data processing.
- 2.4 There are many aspects of delivering a mixed-mode Census that Census offices are taking into account in order to achieve the benefits of a largely online approach while ensuring data quality is upheld throughout. For example, Census offices have told us that their approach of developing and testing the online questionnaire in tandem with the paper version is leading to mutual improvements in the utility of both collection instruments, with each drawing on positive elements from the other.
- 2.5 Census offices are developing approaches to predict the continued use of paper Census forms for certain groups, including those who may have internet access limitations. Census offices are also preparing detailed field work planning to support households, communal establishments and individuals that are the most likely to have difficulty in completing the Census online. Strategies are currently being developed in the separate Census offices to support these respondents and secure Census returns from these groups. We also note that work is continuing across the three Census offices on effective methods for securing responses from homeless households.
- 2.6 The 2011 Census was available to complete online, but uptake was at a lower level than planned for in 2021 (between 15 and 20 per cent across the three Census offices). While Census offices have undertaken further testing of online completion in 2017, current plans for large-scale rehearsals from October 2019 to test end-to-end procedures will be vital in considering planned data collection methods, both online, paper, and other assisted approaches. These should lead to additional data collection and operational improvements for the 2021 Census. Some aspects of testing at rehearsal which will be essential for the successful running of the Census include:
- i. While the 2011 Censuses had an online collection element, it is not yet clear whether Census offices' online collection systems in 2021 will be sufficiently robust for the

higher volumes of response that are being aimed for. We would expect Census offices to carry out extensive operational stress testing of the systems in advance of census day to ensure that they are fit-for-purpose.

- ii. The increased volume of online submissions in 2021 increases data security risks and the potential for data privacy breaches. Initial privacy impact assessments have been completed, and we expect the security arrangements that will be used by the offices to be effective in safeguarding the information that will be collected online in 2021.
- iii. Online completion. We have seen evidence of plans for advanced procedures to protect respondent confidentiality during online data collection and for dissemination through disclosure control measures and coordination of these approaches across Census offices.

- 2.7 The rehearsal will provide the fullest opportunity for Census offices to carry out end-to-end process testing and share what they have learned. Each of the three offices plans to take a slightly different approach in the extent and timing of the various aspects of the rehearsal. For example, the scope of the rehearsal that NRS is carrying out is smaller, and ONS and NISRA are varying the start dates of the coverage survey follow-up stages, with ONS carrying out its coverage survey straight after the main rehearsal period, and NISRA in early 2020. We encourage Census offices to maximise shared learning for rehearsal and implementing improvements to data collection and processes for the 2021 Census.
- 2.8 While online data collection developments should bring many benefits, extensive testing and contingency planning for online collection will be required across the three Census offices. Following the Census rehearsals, it will important for Census offices to share and learn lessons from the rehearsals with each other and publicly, in an accessible and proportionate way, and at the earliest opportunity.

Administrative and other data sources

- 2.9 Administrative and other data sources will support the operational delivery of the Censuses, processing and quality assurance of data, and in some cases used within Census outputs. For example, address registers used for inclusion in Census collections, commercial data from Ofcom may be used to identify areas of limited internet access, and NHS register data used to quality assure population numbers at lower level geographies. ONS is also looking at how other data sources can be used in conjunction with Census data to produce integrated data and statistics. This is part of an ONS programme of work to transform the way that population and migration statistics are produced. The programme aims to put administrative data at the core of ONS's evidence on international migration and population to better meet the needs of its users. This is an integral part of work over the next four years, ahead of ONS making a recommendation in 2023 on the future of population and housing censuses in England and Wales.
- 2.10 Census offices have shared plans for securing administrative data but do not yet have a full picture of the data sources that will be available. There have also been delays in ONS securing access to the range of administrative data sources planned for use in quality assurance and outputs. It is currently unclear whether ONS will obtain access to all the data sources it requires, either at all, or in time to carry out the necessary review and quality assurance of each source. Utilising administrative and other data sources will be a key feature for improvement and innovation in Census and more widely for all official statistics. In an OSR review published in September 2018, *Joining Up Data for Better Statistics*⁸, we highlighted "...data linkage should be a vital component of the official statistics landscape. Value is being squandered because this is not currently the case."
- 2.11 We have seen examples of strong working relationships between Census offices and some data suppliers to determine the suitability of administrative data sources and develop an in-

⁸ <https://www.statisticsauthority.gov.uk/publication/joining-up-data/>

depth understanding of the strengths and limitations of the data. This has been particularly evident at NISRA, with regular communication channels and a detailed supplier understanding of data requirements and statements of requirements having been developed. In ONS, data sharing arrangements and data preparations are centralised as the use of administrative data is a cross-office priority. ONS told us that its Census teams are therefore able to learn from administrative data projects carried out across the office.

- 2.12 In order to ensure the appropriate use of administrative or other data sources, Census offices must have a clear understanding of the reliability and suitability of these sources. For example, our engagement with the Valuation Office Agency (VOA) highlighted possible quality issues with using VOA data to replace the previous number of rooms question used in the 2011 Census in England and Wales. This is because the data for the number of rooms are only formally updated when a property is sold, so additional rooms for properties that have been developed but not sold since, would not be reflected. VOA informed us that a marker is placed on such properties ahead of their sale which may provide an indication of the extent of this. ONS has explored this issue alongside others relating to the overall quality and coverage of the VOA data as explorative research and stated in its Census White Paper⁹ that overall, it believes the advantages of using VOA data for number of rooms outweigh the potential disadvantages. ONS informed us that a change in definition is likely to be the area of most concern to users¹⁰ and indicated that further research on this topic is due to be published in spring 2020.
- 2.13 NISRA should also consider whether it may face similar challenges as it plans to take a similar approach using valuation data from its Land and Property Services (LPS) department. Whereas ONS intends to use valuation data for total number of rooms, NISRA intends to use valuation information for both number of bedrooms and total number of rooms. NISRA should demonstrate that using administrative data will produce robust results for number of bedrooms.
- 2.14 Across the three Census offices there are limited published materials on the use and suitability of other data sources as part of Census processing and outputs. ONS published some documents¹¹ in 2017 regarding the suitability of data sources as part of its Administrative Data Census Project¹². ONS told us that in addition to its research regarding the use of VOA data for the number of rooms, it plans to publish various research outputs setting out its assessment of the suitability of data sources and question design proposals to demonstrate their appropriateness for intended uses.
- 2.15 The use of a variety of administrative data sources also increases the potential for further analyses, which may increase understanding of the quality of Census estimates because of alternative ways to link or analyse existing data. Such further analyses may lead to the perception of incoherence between different outputs. It will be important for Census offices to consider strategies to ensure coherent messaging around the quality of Census outputs and further potential analyses of the related administrative sources, bearing in mind that such issues might become apparent only later.
- 2.16 ONS and NRS told us about their plans for securing additional data sources to support Census processing, quality assurance, and outputs. ONS told us that as an office it has a good understanding of the administrative data that it holds and has excellent connections with its data suppliers, but it does not yet have a full picture of all the sources that will be used. While a work programme is scheduled to take this forward, we are not fully assured

⁹<https://www.gov.uk/government/publications/the-2021-census-of-population-and-housing-in-england-and-wales>

¹⁰<https://www.ons.gov.uk/census/censustransformationprogramme/questiondevelopment/housingcommunalestablishmentsandvisitors/estimatingthenumberofroomsandbedroomsinthe2021censusanalternativeapproachusingvaluationofficeagencydata>

¹¹<https://www.ons.gov.uk/census/censustransformationprogramme/administrativedatacensusproject/datasourceoverviews>

¹²<https://www.ons.gov.uk/census/censustransformationprogramme/administrativedatacensusproject>

that ONS and NRS are having the necessary conversations with all the various data suppliers, or that they have the relationships needed for informing their understanding of the nature, operational context and overall quality of the sources to be used. **Census offices should build their awareness of the relative strengths and limitations of any administrative, commercial or other data sources used in the production of Census outputs, by regular engagement with suppliers. This should be undertaken on an ongoing basis and as part of a normal way of working.**

Methods and quality

- 2.17 The three Census offices are working closely together on methods developments such as harmonised question design and statistical disclosure control (SDC), in line with a statement of agreements between the three offices¹³. Census offices are engaging positively with a range of expert groups and utilising peer reviews with statistical colleagues and academics on methods developments. The proposed Census methods and processes are being informed by national and international best practice and there is evidence of the three offices learning lessons from international developments and set-backs. We have also seen evidence of ongoing discussions between Census offices and some users in the context of trade-offs in producing outputs to a level of quality that will meet their needs and the need to ensure non-disclosive outputs.
- 2.18 Census offices have told us of their ambitions to implement and build upon quality assurance arrangements that were used successfully in 2011, for example in 2011 NRS established a Census Data Quality Advisory Group, made up of representatives from local authorities and other external stakeholders. This group played a role in the quality assurance of the results from the Census using their local knowledge and expertise. NRS plans to form a similar group for the 2021 Census.
- 2.19 Currently there is little information available from Census offices' websites on methods and quality management, although we are aware that approaches are being discussed with Census users and stakeholders at events and roadshows. In particular we note that:
- i. There is currently little information available about potential biases between online and paper collection modes in 2021, although the Census rehearsal offers opportunities to explore this further. Census offices must investigate the effects of changing to primarily online for data collection and how any mode bias will be handled. This is significant for the consistency of submissions made though each mode used in 2021, and for the comparability of 2021 results with those from previous Censuses.
 - ii. Census offices are currently developing approaches to secure responses from hard-to-reach groups, such as the homeless living in temporary accommodation and rough sleepers. Information on the methodology proposed and quality assurance arrangements that will be undertaken should be made available at the earliest opportunity.
 - iii. Given the current uncertainty about the exact administrative sources that will be available for ONS to use in 2021, there is limited information about the methods that may be used to produce integrated outputs from those sources. ONS should look to make such information publicly available and seek to collaborate with subject matter experts and seek peer review of methods proposal.
 - iv. There is currently limited information available about the overall quality management approach being taken by each Census office to ensure appropriate levels of quality for Census outputs. While it is apparent that effective approaches

¹³<https://www.ons.gov.uk/file?uri=/census/censustransformationprogramme/legislationandpolicy/theconductofthe2021censusesintheuk.pdf>

employed for 2011 are likely to be employed again, the timing for publication of methodology documentation and quality assurance arrangements is also unclear.

- 2.20 Census offices are developing their quality management approaches and developing various methods to support Census operations, data processing and outputs (including integrated outputs where Census data and administrative data are linked). The timing for publication of methodology documentation and quality assurance arrangements is unclear. **Census offices should make information on the methodology and quality assurance arrangements available to users at the earliest opportunity.**

Theme 3: Census outputs and dissemination

- 3.1 The real value of the Censuses will be realised on the release of Census outputs. Census offices will have to deliver high quality data and statistics in a variety of forms to support the wide range of different uses required. Lessons should be learned from the previous 2011 Censuses, and Census offices have a great opportunity to innovate and improve on the dissemination methods used and the range of outputs provided for users.
- 3.2 Planning for outputs has begun with Census offices engaging with users to understand their needs. Census offices have communicated their overall ambitions and timescales for the first release of statistics and through new flexible dissemination tools. This report reflects the earlier stages of the development for outputs and dissemination methods. We expect progress to continue in these areas, and at this stage we have not suggested any actionable findings for Census offices. During this assessment users have shared their views with us on Census outputs and we have a number of reflections that Census offices should consider as work in this area continues.

Range of Census outputs

- 3.3 Different Census users will require different Census outputs to appropriately meet their needs; from high-level statistics and specific topic analysis reports, where Census offices have the opportunity to provide additional insight, to access to Census microdata for expert users to facilitate further research.

Flexible and timely dissemination

- 3.4 Findings from the evaluation of the 2011 Census included improvements to the timeliness of outputs being delivered. Census users also told us, when reflecting on 2011 Census outputs, that Census offices' publication plans were released too late for them to properly plan and prepare for their use of 2011 Census data and statistics. Census offices also did not publish what users expected and it was delivered later than anticipated. It would be beneficial for users to have early sight of Census offices' plans for outputs and tables and the likely timescales for release. This would enable users to prepare for their own work programmes and give them opportunity to feedback into planned activity. Census offices should also clearly communicate any changes to these plans as they are known so that Census users are kept well informed.
- 3.5 Census offices have highlighted their intentions to make Census data and statistics available at an earlier stage than in previous Census years. There are two features of the 2021 Census which may result in improvements to timeliness. The first is the ambition for a considerably increased proportion of Census returns submitted online; it is hoped that completion in this manner may improve data quality through up-front data validation and result in the faster processing of data. The second is the development of a flexible dissemination tool which will allow users the ability to create their own outputs, no longer depending on Census offices producing set tables for publication.
- 3.6 ONS told us about its considerations on the appropriate release of Census data. It may be possible for users to access Census data using the flexible dissemination tool before Census offices can release topic analyses, which would provide users with additional insight and support appropriate interpretation of the data and statistics. We have been encouraged to hear of these considerations regarding the trade-off between better timeliness and access to data and statistics and the need for clarity and insight to support user interpretation of Census outputs. Census offices should seek to strike the right balance, take account of the needs and views of users and seek the advice of the GSS

Good Practice Team in adopting an appropriate solution. We will continue to explore this trade-off issue with Census offices as plans for Census outputs progress.

- 3.7 The users we have spoken to have welcomed the possibility of accessing data and statistics using a flexible tool. Users are keen to see how the development of the flexible dissemination tool progresses and are interested in the opportunities to test the functionality of the new system to familiarise themselves with the tool before its release with 2021 Census data. Census offices might consider testing or making the new flexible dissemination tool available to users using synthetic data, or previous Census results, with the intention that users can get familiar with the tool in advance of the 2021 Census outputs being published.
- 3.8 Some users have raised concerns around less expert users' understanding of the implications of statistical disclosure control methods on table totals. This is one example of how appropriate guidance and caveating will be provided in a flexible dissemination environment to ensure appropriate use. Census offices, when considering guidance and caveating for the flexible dissemination tool should also consider a recommendation from our phase 3 assessment of Census 2011¹⁴ – “*We suggest that each statistical producer implement ways of informing users of substantive revisions alongside the statistics in the context of the developments in online dissemination*”.
- 3.9 The timeliness of UK-level Census outputs will be dependent on the ability of each individual Census office to produce its own high-quality data and statistics. Census offices have told us about aims to enable users of UK Census data to access UK level data from one place. Census offices should be aware of how any differences in timescales or delays to delivery of its own outputs will impact on UK data users and provide clarity about which UK level Census outputs will be available when, and through which channels, at the earliest opportunity.

Integrated outputs

- 3.10 ONS, as well as producing Census outputs based on data from the main Census collection, is exploring opportunities for data analyses which incorporate additional administrative data sources held by other government departments to enable the production of multivariate, small area outputs on themes, such as number of rooms and income. This is an opportunity to add greater value and insight to the Census and reflects a wider ONS ambition to transform its provision of population and migration statistics through a greater use of administrative data. ONS has released some research from its work in this area to date¹⁵ and is working with topic experts to develop appropriate methods to support this approach.
- 3.11 ONS's ambition is to gain National Statistics designation for these outputs as well as its core Census releases. We will continue to engage with ONS in the later stages of this assessment when more detail is known about the various data sources and their suitability for use in integrated census outputs. As part of ongoing development, we expect ONS to continue to engage with users and collaborate with other government departments, data suppliers and experts in this area. In particular, we consider it would be beneficial to publish and invite feedback on methods development research and reports for wider input from academic, research and scientific communities. As previously discussed (para 2.15), it will also be important for Census offices to consider strategies to ensure coherent messaging around the quality of Census outputs and further potential analyses of the related administrative sources.

¹⁴<https://www.statisticsauthority.gov.uk/publication/special-assessment-of-the-2011-censuses-in-the-uk-phase-3-office-for-national-statistics-national-records-of-scotland-and-the-northern-ireland-statistics-and-research-agency/>

¹⁵<https://www.ons.gov.uk/peoplepopulationandcommunity/populationandmigration/internationalmigration/articles/updateonourpopulationandmigrationstatisticstransformationjourneyaresearchengagementreport/2019-01-30>

Microdata, metadata and guidance

- 3.12 Census offices plan to make microdata – datasets containing random samples of anonymous individual records – available to users for research purposes. As with Census 2011, Census offices plan to make available different levels of data, ensuring suitable data governance arrangements are in place. For Census 2011 there were 3 main data access arrangements in place:
- i. Open Teaching File – a 1 per cent sample, available through UK Data Service¹⁶ without registration.
 - ii. Safeguarded Data – a 5 percent sample, with restricted access only available under licence.
 - iii. Secure data – a 10 per cent sample, with access to data tightly controlled through Secure Research Service¹⁷.
- 3.13 Whether users are accessing data through flexible tools or any other route, rich metadata will be required to support their use. Users shared with us their need for improved metadata compared with what was available for the 2011 Census outputs and we are aware Census offices have been engaging with users to understand their needs around such requirements. The intention to provide data via a flexible dissemination route further increases the need for accessible metadata and guidance to ensure appropriate use of Census data and statistics. We encourage Census offices to think innovatively about how they might achieve this.
- 3.14 Previously, Census offices have made ad hoc requests for analyses they have received for bespoke data and statistics publicly available for other users. We welcome this practice and would expect to see it continued for the 2021 Census results, alongside a user defined approach.

Clarity, accessibility and maximising public value

- 3.15 The value of Census outputs will be determined in part by the accessibility of outputs and the clarity and insight that Census offices can provide to users. We would expect Census offices to carefully consider the accessibility of their Census outputs and for the Census outputs to meet a range of users' needs, from those in the general public to academics and topic area experts.
- 3.16 Census offices all have a responsibility at a UK level, as well as nationally, and should be working towards providing clarity and accessibility of UK Census data and statistics. Census offices should work together to guide UK Census users towards the outputs they need and advise them on the limitations of particular analyses if comparing across the UK or when combining to produce a UK-wide Census figures.
- 3.17 Census offices should also seek to maximise the public value of Census data and facilitate its reuse. For example, we welcome NISRA's plan to follow up the main Census outputs for Northern Ireland and the UK with a joint publication with the Republic of Ireland's Central Statistics Office of the Ireland-Northern Ireland Census (as in 2014), which we see as a strong example of maximising the public value from the Census.
- 3.18 The innovation and improvement work being undertaken as part of Census development will have a range of benefits to other business areas, across the GSS and beyond, particularly in terms of innovations in survey data collection methods and the potential for administrative data to play a much larger role in the future of UK population and migration statistics. Census offices should seek to share their experiences, both in terms of the challenges faced, and the successes achieved, to maximise the opportunity for wider

¹⁶ <https://census.ukdataservice.ac.uk/>

¹⁷ <https://www.ons.gov.uk/aboutus/whatwedo/paidservices/virtualmicrodatalaboratoryvml>

learning and innovation from the 2021 Censuses, across a range of sectors and both nationally and internationally.

Theme 4: Planning, management and ways of working

- 4.1 The importance of how ONS, NRS and NISRA are planning and managing their work programmes to deliver a successful Census is vital in providing users with the confidence that they can and will meet the standards of the Code. Census offices should be open in their progress, take users' views into account in their planning and development work, and work collaboratively to meet common goals; in doing so they can demonstrate their trustworthiness to users of their Census data and statistics.

Planning and management

- 4.2 Each Census office has published its overarching plans^{18 19 20} for the 2021 Census, setting out proposals for how the Census will be conducted covering question topics, how data will be collected, processed and published, confidentiality and privacy, and the relevant legislative processes involved.
- 4.3 While planning documents are published, there is no easily accessible high-level plan of key Census milestones. Some users told us that they were unclear at what points certain decisions will be made or when certain information will be made available, for example, Census output publication plans. Users also told us that it sometimes takes a long time for Census offices respond to feedback or requests for information. We consider that, in part, this is due to the scale of Census activities and answers are not possible until later in the programme. It may help users to understand response time from Census offices if forward plans were made clear to users.
- 4.4 Census offices should publish easily assessable information on future Census milestones, with timeframes where possible, highlighting key decision points, opportunities to feed into decision making or when new information may become available. While we understand that it may be challenging for Census offices to be specific on timeframes at this stage, we consider that **providing users with an indication of future Census milestones – including future user engagement opportunities, publication of further research or reporting, and legislative milestones – to provide an added level of transparency and support trustworthiness and public confidence.**
- 4.5 All three Census offices have evidenced work planning, risk management, and programme governance. For example, NRS, and Scottish Government audit teams concerned with the Scottish 2021 Census programme, have shared with us the challenges and issues that NRS is facing and working to manage and resolve. These include procurement issues, concerns over effective decision making through project governance structures and contingency planning arrangements. We very much welcome NRS's openness with us about these issues and are pleased to note that recently, this situation appears to have been improving. We also note that NRS maintains a positive relationship with the various audit functions.
- 4.6 During the course of this assessment NRS has evidenced plans for mitigating actions and implemented improvements, including a new governance structure. Nevertheless, there remains a delivery risk for Census outputs in Scotland and we welcome the ongoing dialogue with NRS as it continues to manage these risks. We also acknowledge that within planning, development and decision making for the 2021 Census, where Census offices'

¹⁸<https://www.ons.gov.uk/file?uri=/census/censustransformationprogramme/legislationandpolicy/helpshapeourfuturethe2021censusofpopulationandhousinginenglandandwalesenglishlanguageversion.pdf>

¹⁹ https://www.scotlandscensus.gov.uk/documents/census2021/Plans_for_Scotlands_Census_2021.pdf

²⁰ <https://www.nisra.gov.uk/sites/nisra.gov.uk/files/publications/2021-census-northern-ireland-proposals-document.pdf>

ambitions are for predominately online Census completion, there can be tensions between digital and statistical priorities.

- 4.7 We note that the seniority of the statistical leadership role in NRS is at a lower grade relative to that in the other Census offices. Census outputs are one of the most important sources of official statistics, and each Census represents a significant and complex programme. While it falls outside the direct remit of our assessment, we would encourage the Scottish Government and NRS to review the seniority of this role, and would be happy to input into their discussions.
- 4.8 Use of internal review, audit and other independent measures to evaluate the effectiveness of processes is important across all three Census offices and provides additional safeguards. We note, for example, Census offices have contracted an independent security review²¹ of the three Censuses covering lower level information security controls, governance, risk assessment and management, security operations and security assurance.
- 4.9 Census offices should act quickly and effectively to address issues on Census processes identified through internal review, audit or other independent review activities. The trustworthiness of Census offices is reinforced by ensuring that they have effective business processes and appropriate resources to support their statistical functions. **Census offices should be clear to users what assurance mechanisms are in place and be open about identified areas for improvement in a way that is a proportionate and accessible to users.**
- 4.10 We have seen some detailed planning for the upcoming Census rehearsal later in 2019 and Census offices have told us about their considerations in selecting rehearsal areas to test procedures in risk areas for example poor internet connectivity in rural areas or hard-to-reach groups such as students. NISRA, for example, is proposing a paper-first route in certain areas and a centralised, office-led approach to achieving response from communal establishments which will aim to build links with these establishments before Census day, rather than training all census field-force staff in how to obtain responses from communal establishments.
- 4.11 Outcomes of the Census rehearsal will be vital in the next stages of planning and development and we would expect to see Census offices adapting and learning from the outcomes across the three offices. For example, the rehearsal will give an insight into the success and barriers to achieving a digital first Census in 2021, and this learning should be shared and incorporated into contingency planning. Census offices need to ensure Census data can still be collected if plans for delivering the Census online are not fully realised; rehearsal may give further insight into risk areas, such as respondent behaviour or technical or system issues. Given the slightly different approaches being employed it will be important for Census offices to share lessons learned with each other in order to maximise benefits of the rehearsal and effectiveness of Census procedures.

Ways of working

- 4.12 In October 2015, a statement of agreement²² between the National Statistician and the Registrars General for Scotland and Northern Ireland was published. The agreement details the conduct of the Census and states that while each country will be autonomous in their decision making on the three separate Censuses, they will aim to work collaboratively to achieve a success census that meets the needs of users, providing harmonisation across outputs and procedures. An update²³ on progress towards meeting this agreement

²¹ [https://www.scotlandscensus.gov.uk/documents/census2021/Census_2021_IAR_-_Public_report_v1_\(1\).pdf](https://www.scotlandscensus.gov.uk/documents/census2021/Census_2021_IAR_-_Public_report_v1_(1).pdf)

²² <https://www.ons.gov.uk/file?uri=/census/censustransformationprogramme/legislationandpolicy/theconductofthe2021censusintheuk.pdf>

²³ <https://www.ons.gov.uk/file?uri=/census/censustransformationprogramme/legislationandpolicy/theconductofthe2021censusintheukupdatenov16.pdf>

was published in November 2016. Similarly to November 2016, ONS will lead on providing a joint update on progress against the agreement over the coming months.

- 4.13 We have seen much evidence of collaborative working between the three Census offices through joint working groups and decision making at UK Census Committee level, all of which include membership across the offices. In particular, we note the close working relationships between ONS and NISRA in relation to survey design and processing developments, between NRS and ONS in relation to harmonised question development and between NISRA and the Central Statistics Office (CSO) in the Republic of Ireland in relation to planning for Ireland-Northern Ireland Census outputs. It is apparent that Heads of Profession for Statistics and senior Census staff promote a culture of collaboration with the other Census offices. This is something to be celebrated and fostered, particularly over the next few years when there is the potential for cross-UK Census collaboration to take place in an increasingly politicised context.
- 4.14 Beyond cross-Census office working – in relation to planning, development and decision making – we have seen strong collaboration with other international Census offices, academics and topic experts, use of peer review and advisory groups, as well as internal and external audit groups. NISRA co-hosted the International Census Forum with CSO in September 2019, which provides an open and collaborative environment for Census offices from around the world to share Census related knowledge and experience.
- 4.15 While we have seen good examples of collaborative working in respect of Census offices developing country specific approaches, Census offices also have responsibilities for producing Census outputs at a UK level and that data and statistics meet UK Census users' needs. Published plans, research and topic reports from the individual Census offices are not always sufficiently clear on how these country-specific proposals then relate to UK users' needs and about the impact of these decisions on the availability of on harmonised UK data. **Census offices should be clear about the impact of country-specific decision making for UK Census data and statistics and work together to provide greater transparency around their plans and decision making in meeting the needs of users interested in UK Census outputs.**

