

Final phase of the assessment of compliance
with the Code of Practice for Statistics

2022 Census in Scotland

Statistics producer: National Records of Scotland
Report by: Office for Statistics Regulation

The Office for Statistics Regulation

Statistics should serve everyone, helping enhance knowledge about every section of society and the economy, and people's place within them.

The Office for Statistics Regulation (OSR) provides independent regulation of official statistics produced in the UK. Official statistics are statistics produced by Crown bodies and other organisations listed within an [Official Statistics Order](#), on behalf of the UK Government or the devolved governments.

We aim to enhance public confidence in statistics produced by government by setting the standards that they must meet in [the Code of Practice for Statistics](#). We ensure that producers uphold these standards by conducting reviews of statistics against the Code. We also report publicly on system-wide issues and on the way statistics are being used, celebrating when the standards are upheld and challenging publicly when they are not.

Assessments

An assessment is a type of compliance review conducted to determine whether a set of official statistics can be accredited.

Under legislation, assessment is the only tool that allows OSR to grant accredited official statistics status (called National Statistics in the Statistics and Registration Service Act 2007). Accredited official statistics are official statistics that we have independently reviewed and confirmed to comply with the standards of Trustworthiness, Quality and Value in the Code of Practice for Statistics.

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Overview

The 2022 census in Scotland statistics, produced by National Records of Scotland (NRS), are published as accredited official statistics.

The census is one of the most important sources of data and statistics, informing decisions about almost every aspect of life within the UK. It gives users access to important information on the people and households of the UK and helps us better understand the places in which we live and work.

This report presents the findings of the third and final phase of our assessment of NRS's outputs for the 2022 census in Scotland, which we started in October 2025.

Why we did this review

On 13 September 2023, the Office for Statistics Regulation (OSR) [wrote to NRS](#) to confirm that the statistics on the 2022 census in Scotland could be designated as National Statistics (now referred to as [accredited official statistics](#)). This letter accompanied OSR's [Phase 2 report](#) on the census, which identified several areas that NRS needed to address in order to comply with the standards of [the Code of Practice for Statistics](#).

This review reports publicly on NRS's actions against the Phase 2 requirements, and assesses NRS's 2022 census outputs against the Code, with a focus on the extent to which the outputs have met user needs.

Highlighted findings

- NRS released the 2022 Census outputs for Scotland in an orderly and well-structured way, with an approach shaped by user feedback.
- Following quality challenges caused by lower-than-expected response rates during census data collection, NRS conducted rigorous quality assurance to understand and assure the reliability of the census results. Overall, the quality of the census outputs was communicated thoroughly and effectively, with appropriate attention given to communicating uncertainty. The performance of the census question on health conditions regarding learning disability data has provided lessons regarding the communication of quality issues.
- NRS has shown a clear commitment to meeting user needs through its Census 2022 outputs. NRS has taken a proactive and comprehensive approach to user engagement and in supporting users to understand and make use of the census statistics.

- NRS has taken clear steps to support the coherence and comparability of its outputs, including working with other UK census offices to produce UK-level estimates. NRS has informed users where cautiousness should be applied in comparing the 2011 to 2022 census statistics when question design and methodology differed.
- NRS has developed a range of innovative tools that have generally enhanced users' experience of using the 2022 outputs, although some features relating to data-zone level analysis and usability could be improved to support use.
- Overall, NRS has taken a thoughtful and systematic approach to enhancing statistical insights through its Census 2022 outputs. Its work demonstrates a clear focus on maximising the value of census data by enabling users to derive meaningful and relevant conclusions about Scotland's population.

Our judgement

NRS has met all the requirements set out in our 2023 Phase 2 assessment. NRS demonstrated a comprehensive approach to effective user engagement, clearly documenting quality and methods, collaboration with other census offices, and timely, accessible outputs. For these reasons, we confirm the designation of the 2022 census in Scotland statistics as accredited official statistics.

Users reported high levels of satisfaction with the 2022 Census outputs, reflecting NRS's open and collaborative approach. Strong public engagement and clear communication on quality were notable achievements, particularly given the challenges posed by the census postponement from 2021 and lower-than-expected response rates.

Looking ahead, we encourage NRS to build on this positive reception by carrying forward lessons from 2022 into the design and delivery of 2031 Census outputs. NRS should strengthen expert engagement, continue close collaboration with other UK census offices to support comparability, and enhance the functionality and accessibility of the Flexible Table Builder. We also recommend NRS work closely with local authority users who require data-zone-level data to ensure clarity, access and comparability. We have set out five recommendations for NRS to take forward in respect to these areas.

Next steps

NRS should aim to meet these recommendations within six months or demonstrate to OSR how the recommendations have been integrated into planning for Census 2031.

Recommendations

Recommendation 1: To continue to build on the positive user reception of its output delivery, NRS should carry forward the lessons learned from the 2022 census regarding user involvement in output design and delivery, and continue prioritising best practice when looking towards the 2031 census.

Recommendation 2: To ensure public confidence and maximise the value of future census outputs, NRS should engage more closely with expert users and special interest groups during question design and development. NRS should clearly communicate the impact of quality issues for use when and if these issues arise.

Recommendation 3: Building on the experience from the 2021/22 censuses and ahead of the 2031 Census, NRS should continue its close collaboration with other UK census offices to ensure coherent question design, shared learning, and transparent decisions, supporting UK-wide comparability while reflecting Scotland's distinct needs and managing user expectations in planning for the 2031 Census.

Recommendation 4: To help improve the Flexible Table Builder ahead of the 2031 census, NRS should engage with users to identify ways to increase its functionality and accessibility so that future outputs can be analysed and interrogated by the widest possible range of users.

Recommendation 5: Ahead of Census 2031, NRS should continue to work closely with key users across local authorities who require data-zone-level data, including to advertise access to bespoke services and to provide guidance on the comparability of outputs at data zone level between local authority areas.

Introduction

The statistics on the 2022 census in Scotland are accredited official statistics produced by National Records of Scotland (NRS).

The census is one of the most important sources of data and statistics, informing decisions about almost every aspect of life within the UK. It gives users access to important information on the people and households of the UK and helps us better understand the places in which we live and work.

Census statistics are a vital source of statistical insight for Scotland, providing a reliable understanding of the population's size, distribution and demographic characteristics. The Scottish census offers a robust snapshot of the nation and, alongside the censuses in England and Wales and Northern Ireland, contributes to a coherent UK-wide picture for 2021–2022.

Background to this assessment

The Office for Statistics Regulation (OSR) has conducted assessments of the 2021/22 censuses produced by the Office for National Statistics (ONS), the National Records of Scotland (NRS) and the Northern Ireland Statistics and Research Agency (NISRA). It is essential that the data and statistics from the censuses are reliable and provide valuable insights by meeting the rigorous standards of Trustworthiness, Quality and Value outlined in the Code of Practice for Statistics (the Code).

We have conducted our assessments of the censuses in three phases. In October 2019, we published our reports on [Phase 1](#), focusing on the planning and consultation activities undertaken by the census offices across the UK. In November 2021, we published our Phase 2 assessment reports for England and Wales and Northern Ireland, focusing on the strategies for developing and providing outputs. Our [Phase 2](#) for Census 2022 in Scotland assessment report was published in April 2023. This report included five requirements to which NRS was required to respond. Our Phase 3 assessment report for [Northern Ireland](#) was published in February 2025, and our Phase 3 report for [England and Wales](#) was published in June 2025.

This report covers the third and final phase of our assessment of the 2022 census in Scotland and completes our assessments of the 2021/22 censuses in the UK. On 13 September 2023, OSR wrote to NRS to confirm the designation of the 2022 census in Scotland statistics as National Statistics (now referred to as [accredited official statistics](#)). Our judgement was based on a range of evidence evaluated during phases one and two and NRS's commitment to ensure that the Census 2022 statistics for Scotland would be of high quality and meet the wide and varied needs of users of these data. This report therefore focuses on the extent to which NRS fulfilled its commitments from 2023 and met the needs of statistics and data users with the 2022 census in Scotland outputs.

Our approach

For this third and final phase of our assessment, we split our work into two strands:

- A review of NRS's 2022 census outputs against the Code, with particular consideration of the extent to which the outputs have met user needs.
- A review of NRS's progress towards any outstanding commitments it made in response to the requirements from our Phase 2 census assessment (as outlined in Annex 1).

This report was prepared by an assessment team composed of OSR statistics regulators. The team conducted desk research and engaged with key stakeholders and users to gather its findings. The report was then approved by the Regulation Committee on behalf of the Board of the UK Statistics Authority, on the advice of the Director General for Regulation.

Desk research

We carried out desk-based research, which involved reviewing the outputs over the course of autumn 2025 and winter 2025/26 to confirm their accessibility, means of dissemination and methodological information, as well as many of the supporting resources, reference materials and assurance mechanisms that NRS published alongside the outputs.

These findings were complemented by information that NRS shared with the OSR assessment team, which focused on the progress it had made against each of the requirements from our Phase 2 census assessment. We also conducted meetings with the NRS census team to discuss our findings and seek further insight. We thank NRS and its staff for their cooperation during this process.

User engagement

In developing this report, we spoke to users of the 2022 census outputs in Scotland. OSR conducted seven interviews with a range of users from Scotland's devolved government departments, local authorities, non-departmental public bodies and academia. These users included those with a statistical background, researchers, policy developers and non-expert interested stakeholders. The interview period ran from 3 November to 12 December 2025.

The information collected in this interview process complemented that gathered through written feedback from users of 2022 census outputs. OSR received six written responses after contacting known users of the statistics by email and advertising a request for feedback through NRS's Census 2031 e-newsletter on 15 October 2025.

Changes to the Code of Practice

OSR published the revised Code of Practice for Statistics (version 3.0) on 30 October 2025, with regulation under the new Code taking effect from that date. OSR expects producers to now be embedding the new Code. The requirements from Phase 2 have been assessed under the previous Code (version 2.1), reflecting the period in which NRS responded to the requirements. Further information can be found in OSR's [Transition Guidance](#) for producers.

Findings

Orderly release of outputs

NRS released the 2022 Census outputs for Scotland in an orderly and well-structured way, with an approach shaped by user feedback. NRS proactively announced updates to its timelines [via the census website](#) and continued to manage expectations throughout the release cycle.

NRS designed the schedule for the first outputs to prioritise early publication of headline figures, reflecting both user feedback from the 2023 [consultation for census outputs](#) and the importance of timely information following the postponement of data collection from 2021. An [outputs schedule](#) was made publicly available, and all information published could be accessed via the [website](#), with separate sections for releases such as the [topic reports](#).

Revisions and corrections to Scotland's Census 2022 data were published transparently on a dedicated [webpage](#). Users noted they appreciated the clarity of this approach, and all corrections followed the [Scottish Government Statistician Group's Revisions Policy](#), following the [Code of Practice for Statistics](#). Revisions Policy and the Code of Practice for Official Statistics.

Summary of census releases

The [first release of census data](#), published in September 2023, provided rounded population and household estimates at Scotland and local authority level, accompanied by commentary, comparisons with previous censuses and supporting information about NRS's [quality assurance](#) work.

The second release in May 2024 included unrounded population estimates by single year of age and sex, household estimates by size at all geographies down to output area, and rounded estimates of the population by household or communal establishment. Relevant analysis, supporting material and 2022 area boundaries were published alongside the data.

Topic data were then released between May and October 2024. Each topic release included single variable data tables, with accompanying metadata and commentary. Users generally welcomed the sequencing, although one user expressed a preference for an earlier education and labour market release due to its relevance for local decision making.

Following the topic releases, NRS continued to publish additional products, including Flexible Table Builder releases (with Release 2 published in March 2025), census maps and analytical reports to support policy development.

Overall findings

Throughout each phase of the release schedule, NRS promoted its outputs effectively through press notices, briefing materials, presentations and social media, with users consistently praising the clarity and timeliness of communication. [Email alerts](#) and ongoing engagement helped users stay informed about changes to the anticipated release schedule following postponement of data collection from 2021.

Overall, users were positive about NRS's management of the output release process. Clear communication during the release of outputs helped to maintain user confidence and trust in the statistics. **To continue to build on the positive user reception of its output delivery, NRS should carry forward the lessons learned from the 2022 census regarding user involvement in output design and delivery, and continue prioritising best practice when looking towards the 2031 census.**

Quality information and quality assurance

Quality and methodology information

Throughout the planning and dissemination of the 2022 census statistics, NRS demonstrated a strong commitment to ensuring, embedding and communicating quality. Users told us they valued the availability of topic-level [quality assurance reports](#), general quality information, and opportunities to engage directly with NRS and subject experts. This approach helped address concerns, also reflected in public and media commentary, about lower-than-expected response rates.

Users were broadly confident in the quality of the outputs, but they told us that communication about quality could, at times, have been more timely and better targeted. This was particularly relevant to the learning disability data, NRS stated that the census showed an unrealistically large increase in the number of people who had been recorded as having a learning disability. Users reported that the uncertainty around the unpublished headline figures left them unclear about how the alternative measures should be used. Users told us that more proactive communication, particularly early engagement with affected users, would have better prepared them for the implications of NRS not publishing a headline figure for the number of people with a learning disability. Users contrasted this with positive examples where NRS had worked with expert users to communicate methods and quality clearly, such as the veterans' topic, and felt that these approaches could have been adopted more widely.

OSR is satisfied that NRS met our Phase 2 requirement to reassure users about output quality. However, for 2031, NRS should aim to publish quality and methodology information in advance of outputs where possible so users have adequate opportunity to understand quality before publication, especially where specific question-design issues might affect interpretation.

Response rates and use of methods

NRS postponed Scotland's census from 2021 to 2022 due to the COVID-19 pandemic. Field collection ran from 28 February to 1 June 2022, with a response rate target of 94%. In early May, the overall return rate was 79.2%, which NRS deemed too low to move to the next programme stage. Following an extension approved by Scottish Government ministers, the return rate increased to 87.4%, and the [International Steering Group](#) described this as a "solid foundation". The final response rate on closure was 89.8%. Users recognised the challenge posed by these figures and understood why additional collection time was required.

The lower-than-expected response rate created statistical risks, requiring extensive estimation and adjustment. Users generally felt reassured by NRS's explanations of how uncertainty was handled, including use of the [Census Coverage Survey \(CCS\)](#), [OSR guidance on communicating uncertainty](#), and strengthened modelling approaches. However, user feedback on the learning disability question highlighted how methodological issues – particularly relating to question wording and category grouping – can significantly affect interpretation and question performance.

These issues reinforced for users the importance of clear methodological communication and robust question testing, especially for sensitive topics. Users also emphasised that such issues can have downstream implications, as the lack of reliable headline data on learning disability created a significant evidence gap that could not be filled by alternative data sources.

At national level, NRS achieved a confidence interval of $\pm 0.51\%$ (against a target of $\pm 0.4\%$), and all but one local authority was within the target of $\pm 3\%$ of the national response rate. Users told us that achieving results close to the intended quality targets provided reassurance, despite collection challenges and specific topic-level issues.

Quality assurance

Despite challenges with response rates, NRS delivered robust statistics through a comprehensive quality assurance process. OSR is satisfied with both the quality assurance process and how NRS communicated it. Users highlighted the topic-level quality materials and the published [2021 quality assurance strategy](#) as helpful tools for understanding how NRS safeguarded quality in a difficult operating context.

NRS employed a multi-layered assurance process involving collaboration with other UK census offices, input from international census teams, oversight from the International Steering Group and validation by analytical experts in Scottish Government. Users told us that this level of external scrutiny helped maintain their confidence in the census outputs.

NRS's integration of administrative data was particularly innovative and contributed to reducing uncertainty. Administrative sources, including the NHS Central Register and Electoral Register, were used to supplement CCS records, support adjustment,

quality-assure communal establishment estimates and reduce uncertainty in population estimates. Users welcomed the transparency around these methods, including in the [Quality Assurance of Administrative Datasets](#) publication.

The quality assurance process also revealed significant issues with the learning disability data. In the [topic report for health, disability and unpaid care](#), NRS noted that it had changed the way health conditions were presented on the census form in 2022, reducing the number of write-in responses to improve the overall quality of responses across categories. After identifying that responses in the learning disability category were implausibly high – largely due to question design and category confusion, in our view NRS made the correct decision not to publish the headline figure. Further information was provided in the [quality report](#). Users agreed that withholding unreliable data was the right approach but felt that communication could have been clearer and more targeted, particularly for organisations that rely heavily on these data for planning and funding decisions. Some users told us this gap was unbridgeable using alternative sources because of limitations in accuracy and timeliness. NRS has acknowledged user concerns and is reviewing the learning disability question for the 2031 census. Early results from the 2031 topic consultation indicate a continued need for health condition and disability data broken down by condition type. NRS intends to publish consultation findings in spring 2026.

Users also pointed to strong examples of good practice, such as NRS's collaboration with Scottish Government analysts to produce an [occasional paper](#) on the new veterans' question. This collaboration helped users understand the data, caveats and interpretation. Users suggested that adopting similar collaborative approaches for sensitive or complex topics – especially during question development – would have likely reduced the issues seen with the learning disability question. **To ensure public confidence and maximise the value of future census outputs, NRS should engage more closely with expert users and special interest groups during question design and development. NRS should clearly communicate the impact of quality issues for use when and if these issues arise.**

User engagement and supporting user needs

NRS has taken a proactive and comprehensive approach to user engagement and supporting users to understand and make use of the census statistics. NRS has shown a clear commitment to meeting user needs through its Census 2022 outputs. Its approach reflects the principles of the Code of Practice for Statistics, particularly in relation to value, by ensuring that data are relevant and capable of supporting informed decision-making. This has helped to maximise the public value of the census outputs.

NRS's efforts regarding user engagement have included directly engaging with users, seeking feedback through consultations, and making a wide variety of resources and information publicly available on its website. Users gave us overwhelmingly positive feedback regarding NRS's user engagement and the numerous methods it used to gain

user views throughout the development and release of the Census 2022 outputs. Notwithstanding resource constraints, NRS took a proportionate approach to increasing awareness of the data, thereby reaching a wide audience in Scotland.

In the [2022 framework document](#), NRS identified the need to complete a census of Scotland's population and prepare and publish demographic and other statistics for a range of users, including central and local government, medical research and the private sector. Within the same document, NRS identified its ethos as putting “people at the heart of what we do”, delivering a census in accordance with its organisational values. NRS has broadly met this ambition. Users told us that they are able to use the census outputs for a wide range of needs, including public policy, the allocation of funding and resources, the planning of delivery of public services, and equality monitoring and social research.

NRS has a good understanding of the key users of its census outputs, but also recognises the wider societal interest in census data as a record of Scotland’s national story. NRS engaged early with users to understand priority needs, using [consultations](#), surveys and stakeholder forums to shape the design, content and release schedule of outputs. This early engagement helped to manage expectations, particularly in the context of a complex census operation affected by external challenges (such as the Ukraine war, cost-of-living pressures, and COVID-19 still being in circulation). NRS was open about these challenges and clearly communicated changes to timelines, which has supported user trust.

The census roadmap outlined in the [general report](#) illustrates some of NRS’s methods for stakeholder engagement. These included [email alerts](#), social media posts, media briefings, press releases, webinars, workshops, one-to-one stakeholder meetings, stakeholder groups, custom presentations and conference attendance. These methods have broadened the reach of the census outputs and encouraged dialogue with a diverse set of users, from expert analysts to the general public.

NRS has made considerable efforts to align its outputs with identified user priorities. Through pre-release engagement and ongoing dialogue, it has demonstrated an understanding of the topics and levels of detail most important to users. The phased release of data has enabled timely access to key findings, while more detailed outputs have provided depth for advanced analysis. This balance has supported a wide range of uses, from high-level policy development to more granular research.

Feedback mechanisms have been visible and accessible, and NRS demonstrated that it [acted on user input](#) in refining outputs. When users had questions regarding outputs, there was consistent positive perception of NRS’s responses. The census team was described by several users as helpful, professional and proactive. Some users commented on how responsive the census team was when responding to queries and noted the quality of communication.

There remain, however, areas where user engagement could be strengthened further, such as regarding users of the learning disability data referenced above. Some users reported a need for more tailored support, particularly in navigating complex datasets and understanding quality considerations which impacted onward use. There is also scope for

NRS to deepen engagement with underrepresented groups to ensure that outputs meet the widest possible range of needs.

The [NRS Strategy 2025/26-2030/31](#) reflects an increasing commitment to transparency, accessibility and responsiveness, aligning with the expectations on user engagement set out in the Code of Practice for Statistics. To realise this ambition, it is important that NRS carries forward lessons on engagement activity to the planning and delivery of Census 2031.

Coherence and comparability

NRS has taken clear steps to support the coherence and comparability of the outputs, working with ONS and NISRA to produce UK-comparable statistics for 2021. NRS also proactively informed users where cautiousness should be applied in comparing the 2011 to 2022 census statistics when question design and methodology differed.

UK comparability

In the context of the comparability of the 2022 census to other UK censuses, the impact of the postponement compared to ONS's and NISRA's 2021 data collection posed a significant challenge. NRS worked closely with the other census offices to assess the impact on comparability, assessing each variable to understand broad comparability or whether comparability should be avoided. The final product, including advice and caveats when combining the UK-based censuses, was cascaded to stakeholders combined with signposting to where they can find data from each census office.

Responsibility for leading work on UK comparability sits with ONS. ONS identified a user need for UK census data which was unaddressed by the above approach to ensuring comparability. NRS, NISRA and ONS worked together, estimating 2021 census estimates for Scotland to allow for a broader 2021 UK estimate. This agreed methodology not only allowed for comparability between the UK censuses for 2021, but also created opportunity for a simple, linear interpolation between the 2011 and 2021 census for UK estimates. ONS [published the estimates](#), alongside [commentary](#) on methods, quality assurance, and strengths and limitations.

Beyond NRS's general webpage on [UK census data](#), which includes links to the above publications, links are also consistently provided to ONS's and NISRA's censuses on each [statistical report](#). Information on comparability was also included in the [metadata](#) of the census variables, highlighting differences in questions from which the data originated.

Through our user engagement, we found users were satisfied by the methodologies used across censuses and did not note any concerns regarding UK-wide comparability. We found users generally felt supported to make appropriate conclusions regarding comparability.

Generally, NRS demonstrated commitment to ensuring appropriate comparability across the UK censuses. NRS actively collaborated with ONS and NISRA to ensure users had access to UK-wide data, successfully mitigating the discrepancies caused by the delay to the 2022 census. **Building on the experience from the 2021/22 censuses and ahead of the 2031 Census, NRS should continue its close collaboration with other UK census offices to ensure coherent question design, shared learning, and transparent decisions, supporting UK-wide comparability while reflecting Scotland’s distinct needs and managing user expectations in planning for the 2031 Census.**

Comparability of 2011 and 2022 census data

Beyond the work that NRS completed with ONS and NISRA to allow for an interpolation between 2011 and 2022 UK census data, NRS also explained to users where comparability was not possible across Scotland’s historic censuses. NRS also explained the reasons for incomparability where appropriate in the topic reports.

For example, NRS explained within its publications where there had been a change in question design which affected the ability to compare findings between the 2011 and 2022 censuses. NRS evidenced this within the topic report for [ethnic group](#), where it explained to users that there had been a change in ethnic categories. Namely, ‘Roma’ and ‘Showman/Showwoman’ were added as options alongside the existing category of ‘Gypsy/Traveller’ in 2022. Within the report, NRS included a footnote that stated “The ‘Gypsy/Traveller’ numbers for 2022 are not fully comparable with those for 2011. Some people in the ‘Showman/Showwoman’ and ‘Roma’ ethnic groups in 2022 might have ticked ‘Gypsy/Traveller’ in 2011.” This information was complemented by a February 2025 report on [census findings related to Roma people](#) when it became apparent that enhanced guidance and insight for users would be beneficial.

Through communicating where there had been a change in definitions, question design or methodology, NRS proactively informed users of where comparability was possible and where it was not.

Presentation and accessibility

NRS published all of the census outputs and supporting materials on the dedicated [Scotland’s Census](#) website. This included easily navigable main sections to guide users to the [main 2022 reports](#) page and an [About the census](#) page, which included supporting information such as the general report, revisions and corrections, and links to previous census data. This enabled users to access all outputs and relevant supporting information through a single portal.

NRS had outlined its desire to embrace new technologies and methods where appropriate within [its design principles](#). During the discovery phase of designing the new outputs website in April 2020 (outlined in the [key milestones](#)), NRS conducted user research with a

range of stakeholders to support its understanding of what users needed in terms of the presentation of outputs on the new website.

A [Search census results](#) page contains links to various tools to allow users to explore census data, such as through the [Flexible Table Builder](#), [census tables](#), [census maps](#) and [area overviews](#). This suite offers an impressive variety of tools to suit a broad range of user types, from expert users to more casual users. On the whole, these tools have increased accessibility and general interaction with the census outputs, helping to unlock public curiosity in the statistics.

The Flexible Table Builder was a significant innovation that enabled users to build their own census tables for the first time, using almost all categories and breakdowns from the census data. Its aim was to maximise the utility, flexibility and adaptability of the census data, as millions of tables could be produced. This tool was purchased by NRS as an 'off-the-shelf' product, which limited the scope for NRS to make custom changes.

Users gave mixed feedback on the Flexible Table Builder during this assessment. Some found it easy to use and said that it enabled faster interrogation of the census outputs than ever before. The user guide and integration of on-screen support and signposting were welcomed. Other users, however, reported that the Flexible Table Builder was "clunky" to use and not as intuitive as desired. There were also consistent concerns regarding the aggregation of data-zone-level data in the Flexible Table Builder, which is explained in more detail in the [Enhancing understanding and insights](#) section of this report. NRS secured some positive changes to the tool as a result of feedback, such as new data loading rules and the ability to share and save tables. **To help improve the Flexible Table Builder ahead of the 2031 census, NRS should engage with users to identify ways to increase its functionality and accessibility so that future outputs can be analysed and interrogated by the widest possible range of users.**

NRS published the 2022 census outputs in a way that considers the needs of its different users. The outputs, which include supporting statistical reports and data tables, cover a multitude of topics and varying breakdowns. Main statistics tables and reports are presented in a clear manner, and any accompanying text is well written, using plain English to reach a broad audience of users for the headline-level data. The reports provide comprehensive but accessible written summaries of the main findings of the census, offering users important commentary and context. In its reports, NRS has made particularly effective use of quotations from census staff to draw attention to key findings from the census outputs.

NRS has an [accessibility statement](#) on the Scotland's Census website, which is also included in the Flexible Table Builder tool. This includes information on how to use reader software, change colours and zoom into sections without undermining comprehension. There is also the option to request alternative formats and guidance on PDFs. While giving appropriate consideration to the needs of those with disabilities, NRS has acknowledged that not all accessibility limitations can be overcome through these methods. Examples of non-compliance, with appropriate justification, are presented transparently.

Enhancing understanding and insights

Overall, NRS has taken a thoughtful and systematic approach to enhancing statistical insights through its Census 2022 outputs. Its work demonstrates a clear focus on maximising the value of census data by enabling users to derive meaningful and relevant conclusions about Scotland's population.

NRS has delivered a broad suite of outputs that support insight across a range of topics, including demography, education, health, ethnicity, religion, housing and the labour market. The combination of high-level summaries and detailed datasets allows users to explore patterns at both national and local levels. This approach has strengthened the ability of most users to interrogate the data and draw nuanced conclusions about Scotland's population and communities.

Accompanying commentary and contextual information provided with each of the [main topic reports](#) have provided helpful guidance in understanding key trends and changes since the previous census. Clear, accessible descriptions of main messages have been provided alongside suitable data visualisations across all reports, thereby helping users to understand key takeaways and supporting them to make appropriately informed decisions. Where necessary, the reports provide definitions and information about non-response and any uncertainty around the figures. Links are provided to a range of supporting documents, such as methodology, quality assurance and associated outputs.

NRS provides a supplementary statistical service through a [commissioned table service](#) for Scotland's Census 2022 data where customer requirements cannot be met by the Flexible Table Builder. Users valued NRS's attention to these bespoke requests, including offering meetings to refine the user requirement. An [index of tables](#) has made previously commissioned tables available to the public. For users who require more specialist products, such as the safeguarded and secure microdata sets, safeguarded microdata has been made available via the [UK Data Service](#) and the Secure Microdata via the [Virtual Microdata Laboratory](#) managed by ONS and at the Scottish National Safe Haven.

Importantly, NRS has been transparent about data quality and methodological considerations. It has clearly communicated the strengths and limitations of the data, including the impact of collection challenges, enabling users to interpret findings appropriately. This openness supports trust and allows users to engage critically with the insights presented.

Looking towards opportunities to further enhance statistical insights following the 2031 census, additional synthesis across topics and more integrated narratives could help users to better understand cross-cutting themes. Further development of analytical outputs that highlight emerging trends and policy implications would also enhance value.

Insights and comparability at data zone level

NRS publishes data for a range of standard lower-level geographies through static tables and the Flexible Table Builder. These include data zones, intermediate zones and electoral wards. In conducting user engagement with local authorities for this report, a consistent theme emerged of issues in using and comparing data from the 2022 census at data zone level. This was despite NRS making bulk data available for data zones in response to an identified user need, primarily from analysts working in local authorities.

Due to suppression, whereby data are removed or hidden to protect privacy or for data quality purposes, some users are not able to readily access data at a data zone level. Such data are often required to inform local decision-making and funding allocation. Users were faced with two main options: use multiple iterations of the Flexible Table Builder to collate data; or request bespoke data through contacting NRS. With the former option, users often faced quality issues due to discrepancies in aggregated data obtained through multiple uses. For the latter option, some users were unaware of the ability to request bespoke data from NRS. This has highlighted concerns about a potential lack of consistency or comparability at data zone level between local authorities.

Due to Statistical Disclosure Control rules applied to the Flexible Table Builder, whereby combination of variables and geographies are restricted to protect privacy, users are not able to readily access some data at a data zone level through the tool. Such data are often required to inform local decision-making and funding allocation. Users were faced with two main options: use multiple iterations of the Flexible Table Builder to collate data; or request bespoke data through contacting NRS. With the former option, users noted that they were aware of slight differences when adding sub-totals together due to Cell Key Perturbation, making this option more difficult to present and explain. For the latter option, some users were unaware of the ability to request bespoke data from NRS. This has highlighted concerns about a perceived lack of consistency or comparability at data zone level between local authorities. **Ahead of Census 2031, NRS should continue to work closely with key users across local authorities who require data-zone-level data, including to advertise access to bespoke services and to provide guidance on the comparability of outputs at data zone level between local authority areas.**

Annex 1: Actions that NRS has taken in response to the Phase 2 assessment requirements

In 2023, [NRS responded publicly](#) to OSR’s Phase 2 assessment report, which included five requirements for NRS to action ahead of this Phase 3 assessment report. On that basis, National Statistics (now accredited official statistics) status was awarded to NRS’s outputs for the 2022 census in Scotland. The below table outlines the actions that NRS has taken since that time and OSR’s evaluation of whether the requirements have been met. It also highlights where NRS can make any further improvements.

Requirement	Evidence provided by NRS on actions taken since 2023 in response to the requirements	OSR’s evaluation of evidence
<p>Requirement 1: NRS should publish information and assurance for users so they can understand the expected quality of census data. This should be communicated in an accessible and timely way ahead of outputs. NRS should be open about how its users’ needs will be met or how it plans to address any unmet needs.</p>	<p>NRS published information on enhancements to the methodology for producing census outputs in June 2023, ahead of the first 2022 census outputs in September 2023.</p> <p>NRS published a quality assurance report at the same time as each main census publication. Therefore, it was not possible to provide this information ahead of the accompanying outputs.</p>	<p>Requirement met. Information on methodology published ahead of outputs in June 2023, including the use of key performance indicators on accuracy, helped users understand the anticipated quality before outputs were first released. Quality assurance reports provided alongside outputs were comprehensive. Users were generally confident in NRS’s communication of how well the outputs would meet their needs. Time constraints required Statistical Quality Assurance to be done in parallel to outputs. While NRS was unable to meet the precise timeliness of the requirement to provide quality information ahead of outputs, key quality information was provided to users alongside outputs. We did not hear any concerns from users regarding this approach; it therefore did not undermine the overall assessment that the requirement has been met.</p>

<p>Requirement 2: NRS should be transparent about its approach to public engagement with regard to its confidence in data quality. NRS should review its communication and engagement plans, prioritising users where concerns over data quality are greatest and where there is most risk from inaccurate census estimates.</p>	<p>NRS involved local authorities in a series of quality assurance (QA) panels prior to the first 2022 census outputs. More information on these panels was published in the QA report accompanying first outputs.</p> <p>NRS published information on plans to form QA panels in August 2022. These involved topic experts from NRS, ONS, Scottish Government and Transport Scotland, with one panel running for each topic release.</p> <p>NRS published the statistical quality assurance strategy on the Scotland's Census website. This document outlines why statistical quality assurance, quality control and quality management are important for the 2022 census. It sets out the approach to statistical quality assurance, and explains how the strategy will evolve.</p> <p>Contact details were provided to users to contact NRS who wanted to get in touch regarding the QA process.</p> <p>NRS held stakeholder webinars in June 2023 on quality prior to publishing first outputs from the Scotland's Census which provided information about the work that has been carried out to deliver high-quality statistics. This came alongside a presentation in June 2023 which was promoted among stakeholders to provide information on the work conducted to produce high-quality census outputs.</p>	<p>Requirement met. Overall, NRS has made clear efforts to be transparent in its public engagement on data quality, particularly with key stakeholders and specialist users, and has actively communicated its methodologies and confidence in the census outputs. The statistical quality assurance strategy clearly outlined how quality would be assessed, and this materialised through generally effective communication of quality across the outputs. The variety of methods NRS used to engage with a range of users were effective.</p> <p>NRS's engagement has a strong emphasis on specialist or institutional users, but the evidence suggests less targeted outreach to general public audiences or groups beyond formal committees that may also have concerns about data quality. NRS may want to consider this as part of planning for Census 2031.</p>
<p>Requirement 3: NRS should ensure that, when it publishes statistics on trans history or produces demographic breakdowns by sex, these are accompanied by clear information on the definitions and guidance used to produce those statistics. NRS should explain the</p>	<p>NRS took several measures in addressing Requirement 3 regarding the publication of statistics on trans history or producing demographic breakdowns by sex. The measures taken by NRS included:</p> <ul style="list-style-type: none"> • A clear definition of trans status of history when publishing the main sexual orientation and trans status or history release. • The sexual orientation and trans status or history quality assurance report included more information on trans status, including data comparing to results from the 	<p>Requirement met. NRS has met Requirement 3 by publishing trans history and sex breakdown statistics with clear definitions, explanations of how the data were collected, and quality assurance documentation. Guidance on interpretation in the context of previous censuses and other UK census data through detailed topic reports was also provided. The context and history surrounding the new question and its performance were presented sensitively. OSR received</p>

<p>coherence and comparability of its statistics from the 2022 census with those from other censuses, especially given the differences in guidance for the census sex question.</p>	<p>England and Wales 2021 Census, information on trans status or history by English-language proficiency and data on trans status or history by sex.</p> <ul style="list-style-type: none"> • Information was provided in the first release of census data on the sex question along with a link to the sex question guidance provided to census respondents. • Detailed estimates for each of the 27 trans status or history coding framework categories have been published to allow users to explore this data in more detail. 	<p>no specific user feedback around the performance of this question or the information which NRS has made publicly available during this assessment process. NRS informed OSR that the data are still being used, indicating that users are satisfied with the information provided. Some feedback on this topic has been provided to NRS during the 2031 topic consultation, which we expect to be integrated into planning for the next census. We also expect NRS to continue to follow our guide for collecting and reporting data about sex and gender identity in official statistics.</p>
<p>Requirement 4: NRS should ensure that supporting documentation, guidance and information on data quality, including bias and uncertainty, is communicated in its outputs. This information should be refreshed and added to as its programme of outputs is delivered. For known areas of user interest, for example for data on sex, NRS should provide detailed information on quality indicators, such as the outcomes from its quality assurance processes, in assessing census estimates against other data sources.</p>	<p>NRS published a quality assurance report at the same time as each main census publication. This contained detailed information on quality, and any data issues which users should consider when interpreting census data.</p> <p>Advice for users making comparisons between population groups was published to help users understand census data. Tips were provided to users to help them avoid making incorrect conclusions based on these comparisons.</p> <p>Information comparing census results to other sources, including the mid-year population estimates and administrative-based population estimates, was published to allow users to easily compare census data with these key sources of population data. This was intended to increase confidence in the quality of the data, including for sex.</p> <p>Age-standardised data, including for Census 2011, were published for the health, disability and unpaid care topic. This allowed users to more easily compare differences between groups with different age profiles.</p> <p>COVID-19 impacts were communicated in the QA report for education, labour market and travel to work. The effect</p>	<p>Requirement met. NRS has broadly met the intent of the requirement by publishing comprehensive quality information alongside census outputs, producing topic-specific quality assurance reports, including peer review panels and coherence assessments with other data sources, including uncertainty and interpretative guidance in initial and future output releases, and refreshing its statistical quality assurance strategy as outputs progressed. The impacts of the pandemic on collection and response have been communicated well, alongside advice for users on making comparisons between population groups.</p> <p>Regarding data on learning disability in Scotland, quality concerns resulted in a noticeable gap for users who had been expecting clear and useable outputs. However, within the extremely broad range of topic areas and outputs, NRS's overall commitment to providing supporting documentation, guidance and information on data quality is impressive and has been received well by users.</p>

	<p>of COVID-19 was more pronounced for some data published in this release, for example in travel to work data. Evidence from other sources was used to illustrate this and allow users to consider this when interpreting the census results.</p> <p>Detailed quality information on imputation rates for each applicable census variable was published, allowing expert users the opportunity to interrogate this key measure of data quality.</p>	
<p>Requirement 5: NRS should take further steps to communicate plans and provide more-detailed information to users of UK census data in Scotland. NRS should continue to work together with the other census offices to explain any impacts on UK census data quality and describe where user needs may or may not be met as a result.</p>	<p>NRS worked with ONS and NISRA to assess the impact on comparability due to the difference in census dates (following NRS's pushback due to COVID-19). Each variable was assessed to determine whether they were still broadly comparable or if comparisons were to be avoided. Wording was agreed across the three census offices, including wording to be shared with stakeholders alongside advice on combining the results. Signposting was included towards where users can find data from the respective census offices. Links to ONS and NISRA were included on each statistical report published by NRS. Information on comparability was also included in the metadata for census variables. This highlighted any differences in questions which the data was derived from.</p> <p>ONS identified a user need for UK census outputs which was not met by its, NRS's and NISRA's existing approach to comparability. NRS and NISRA worked closely with ONS to provide UK census estimates. The outputs estimated 2021 census estimates for Scotland to produce a 2021 estimate. The methodology was agreed between the three census offices, simple linear interpolation between the 2011 and 2022 census. All three offices worked closely on the methodology, and supporting information was published alongside estimates – including details on methods, QA and strengths and limitations of the data. These were published on the ONS website. NRS</p>	<p>Requirement met. NRS has taken several important steps toward meeting Requirement 5, especially in terms of continuous collaboration with ONS and NISRA on UK census data issues, creating structures (like the UK census data working group) to help coordinate user engagement at the UK level, and working with ONS to include information about impacts on UK census data quality in its published documentation. Responsibility for leading much of this work sits with ONS, and our assessment of NRS's activity on UK outputs aligns with our Phase 3 reports of the 2021 census in England and Wales and Northern Ireland. The UK census estimate outputs were published in June 2025 and were received positively by users. OSR received no user concerns about UK-level outputs or UK comparability while conducting this assessment.</p>

	also has a webpage with info on UK census data, linking to the ONS publication.	
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