

Census Rehearsal Evaluation

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Introduction

Scotland's Census 2021

The census is the only official count of every person and household in Scotland and the only questionnaire of its kind to ask everyone the same questions at the same time. For more than 200 years, the census has reflected the society in which we live, a snapshot in time of who we are as a nation, and how we live and work together. Crucially, the census still remains the best way to gather vital information that helps improve the lives of those living in Scotland. By providing this information, public, private and third sector organisations are able to plan and better deliver public services for all in Scotland.

National Records of Scotland has been working over several years to deliver the next census, on Sunday 21 March 2021. This will be the 22nd census to take place since 1801 and the 17th to be managed independently here in Scotland.

Given we are now firmly into the digital century, as part of the digital first approach across the public sector, next year's census will be the first one to be conducted primarily online. However, those that wish to complete a paper questionnaire will still be able to do so. It is vital that all households are enabled to complete a census return.

Scotland's Census Rehearsal 2019

Delivering a successful census for all is not a straightforward exercise. That is why, as part of our work to achieve this, National Records of Scotland carried out a major public rehearsal exercise that tested some of the systems and services that will be used in next year's census.

The rehearsal took place between 7 October and 7 November 2019, using a reference day of 13 October, and was conducted in three local authority areas; namely parts of Glasgow City, Dumfries and Galloway and Na h-Eileanan Siar. These areas were selected to allow National Records of Scotland to test approaches in rural, urban and diverse communities.

Participation in the rehearsal was on a voluntary basis. Over 72,000 households were contacted with nearly 18,500 responding. The rehearsal was an important milestone for Scotland's Census 2021, and its success has allowed us to gain vital insights on the operation of the systems and processes used to gather census information, helping us to discover what works and where improvements are required. National Records of Scotland recognises this could not have been achieved without the goodwill of those that participated in the rehearsal, particularly members of the public and our external partners and stakeholders and we would like to thank them for their help with this important work.

The overall scope of the rehearsal was split into 11 Key Learning Areas, which included testing:

- the usability of online and paper census questionnaires;
- the public-facing telephone helpline;
- some elements of census communications and help for the public; and
- census ICT systems and operational processes.

Although many of the proposed questions for Scotland's Census 2021 were used for the rehearsal, **it did not set out to primarily or explicitly test the language used in the questions**. The rehearsal did not run a test of the Census Coverage Survey (which is a survey that takes place after the main Census has been completed and is used to help measure the quality of the Census), nor the count and listing of communal establishments (e.g. student halls of residence, care homes, hospitals etc). Testing of the field force (the workforce that are hired to help us conduct the census across Scotland) was also not within the scope of the rehearsal.

This report provides a summary of the key findings of Scotland's Census Rehearsal 2019. It also outlines the next steps for National Records of Scotland to undertake to ensure the successful delivery of Scotland's Census 2021.

Summary

The rehearsal highlighted that the majority of the approaches National Records of Scotland are proposing to use to contact citizens and collect data were feasible and worked as expected. It also provided further evidence that there are a relatively small number of aspects of our approach that require additional improvements, the majority of which were already known to us and are tied into our post-rehearsal work schedule.

The rehearsal also provided further reassurance that our chosen approaches in many respects worked well. For example, initial contact materials and reminder letters worked well to increase returns, elements of our local engagement and marketing strategy tested strongly, and the overall design and functionality of the online and paper questionnaires allowed the public to complete returns and deliver usable data for our systems.

The rehearsal did importantly identify some new areas of improvement for National Records to take forward. These included the need to:

- make improvements to how we collect address information;
- make improvements to some online question routing;
- review the timing and tailoring of reminder letters; and
- improve the provision of management information.

Key Learning Areas

Ahead of the rehearsal, National Records of Scotland identified 11 Key Learning Areas to report on. The following tables provide a summary of those learning areas, including the key findings from the rehearsal and the further work required for each:

1. Feedback on the real world usage of the census systems.

Key Findings	Next Steps
<ul style="list-style-type: none">• Returns were gathered from rural, urban and diverse communities across Scotland.• The quality of data collected was good.• User feedback was successfully captured - web analytics, telephone helpline and communications.• Handling of addresses in the online system identified some flaws in usability.	<ul style="list-style-type: none">• Data coding was largely correct but some areas for improvement were captured (both for online and paper coding) and will be implemented prior to the census in 2021.• Improvements to how people search for addresses will be made so respondents are able to add addresses if they are not found in lists.

2. Improve and refine the requirements for our testing and live services; in particular the paper/online split, the need for manual coding, the uptake of telephony support and how response rates vary.

Key Findings	Next Steps
<ul style="list-style-type: none"> • 18,500 households responded, of which 84% returned online. • The process to gather management information was largely manual and an automated process will be required for Scotland’s Census 2021. • Whilst most responses were online (as above), a large amount of the Contact Centre’s work focused on requests for paper questionnaires. • Analysis of response rates broadly followed expectations. 	<ul style="list-style-type: none"> • Development of functional Management Information system required. • Development of an automated approach to respond to requests for paper questionnaires.

3. Capture authentic user data to establish whether the pattern of data captured corresponds to the anticipated pattern of data posed by the 2021 questions and their implementation online.

Key Findings	Next Steps
<ul style="list-style-type: none"> • Broader public debate on some sensitive question topics requires layout of questions and associated guidance to be considered. • Some question routing inconsistencies meant that in a small number of cases the journey through online completion could avoid expected routing and validation functionality. • Routing through the questionnaire didn’t fully work for those completing for persons aged under 16. • Functionality regarding predicative text for job titles, place of study and work address needs improvement. • Some error messages during online completion were incorrect. 	<ul style="list-style-type: none"> • Further minor development of question layout and guidance to reflect broader stakeholder requirements. • Fixes required to ensure routing and validation functions are as required. • Job titles functionality to be improved. • Error messaging during online completion to be improved. • Analysis of whether there is a difference in the responses for those who return paper forms compared to those who respond online.

4. Feedback on the usefulness of the guidance and helpline support as a means of supporting the ‘digital first’ approach to the census.

Key Findings	Next Steps
<ul style="list-style-type: none"> • There was no user feedback stating that guidance was unclear. • There was clear and positive impact of initial contact materials and reminder letters - with a clear spike in response rates. • Contact advisors were able to support completion online. 	<ul style="list-style-type: none"> • Looking at support hubs in communities to provide assistance to enable completion online. • 'Wave of contact' model to be further developed. This is the planned sequence of contact with the public from the initial contact letter through to non-response follow up by the field force.

5. Validate real world usage and behaviour / performance of all of the technical components for elements of census collection.

Key Findings	Next Steps
<ul style="list-style-type: none"> • Majority of address lists were correctly produced and disseminated within the scheduled timeframe. • All interfaces between Census Collect systems functioned well throughout rehearsal with no major issues or disruptions to service. 	<ul style="list-style-type: none"> • Address functionality to be improved. • Further engagement required with systems providers to resolve minor deficiencies with data interfaces to ensure consistency.

6. Test how well the support processes put in place by National Records of Scotland (including 3rd party suppliers) have been integrated to provide an efficient customer service.

Key Findings	Next Steps
<ul style="list-style-type: none"> • Translation services worked sufficiently well for Rehearsal. • Incomplete address files for some households in Na h-Eileanan Siar. • Process of handling daily incident issues were tested and proved to work within Rehearsal context. • DCOMS (a tool for managing interactions with each address in Scotland and tracking census returns) worked well for Contact Centre staff with only relatively minor problems. 	<ul style="list-style-type: none"> • Further engagement required with translation contractors to iron out small deficiencies. • Full address records to be tested using various formats. • Business processes for handling incidents to be tested with new suppliers as required and scaled for the census in 2021. • Assessment of capacity to deliver 24/7 IT and Security provision is taking place.

	<ul style="list-style-type: none"> • Further tests planned for Operations and Security.
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7. Demonstrate that we can protect our respondents' data.

Key Findings	Next Steps
<ul style="list-style-type: none"> • Security monitoring systems were sufficient for rehearsal but will require further development for the census in 2021. 	<ul style="list-style-type: none"> • Development of agreed approaches with key suppliers to assure monitoring of the security of systems and data. • Intention to further implement a Security Operating Centre capability to assure monitoring, breadth of coverage and depth of analysis.

8. Develop our working practices with Local Authorities, especially in relation to communications, marketing and supporting respondent completion.

Key Findings	Next Steps
<ul style="list-style-type: none"> • Digital stakeholder pack for the three Local Authority rehearsal areas helped promote engagement. • Shared messages through key stakeholders to reach marginalised communities and individuals worked well. • Encouraging stakeholders to support and promote rehearsal through their digital channels and social media took time but was effective. 	<ul style="list-style-type: none"> • Stakeholder engagement to be scaled up on national level for the census in 2021 (with the support of a public relations agency). • Alignment of central and local focused media engagement important. • Boosting of Facebook and Twitter presence to continue.

9. Validate or amend our testing approach for future phases of Scotland's Census 2021 programme.

Key Findings	Next Steps
<ul style="list-style-type: none"> • Testing approach was robust and thorough, leading to few incidents in rehearsal as a result. 	<ul style="list-style-type: none"> • Testing strategy has been refreshed with learnings from rehearsal, with minor improvements being made. • Testing to be extended to cover new services. • Will be part of the work taken forward to test areas not included in Rehearsal. Learning from other UK census bodies (ONS and NISRA) will also be incorporated.

10. Provide experience to staff on all of the stages leading up to and involved in running a live census operation.

Key Findings	Next Steps
<ul style="list-style-type: none"> • Approach to signing off / authorising decisions within National Records of Scotland created some blockages and increased pressure across Scotland's Census 2021 programme. • Readiness 'to Go' decisions created significant pressure. 	<ul style="list-style-type: none"> • Increase effectiveness and efficiency of governance and authorisation approach. • Clearer awareness and engagement of the necessary authorising and assurance work that is required for security, risk management, governance and decision making processes across Scotland's Census 2021 programme. • Recruitment of a manager to support moving from the Test to Live environment.

11. Understand how respondents will want to interact with our public assistance and communications channels.

Key Findings	Next Steps
<ul style="list-style-type: none"> • Contact centre telephone help line worked well. • Boosting of census content on Facebook and Twitter worked well. 	<ul style="list-style-type: none"> • Increase internal communications and support to staff working within NRS in the run-up to the census in 2021. • Ensure the continuation of close links and sharing of information between the Communications team and the Contact Centre. • Develop a programme of community engagement. • Stakeholder engagement plan needs to be adequately resourced to be scalable on a national level for the census in 2021. • Employ public relations agency to support our work. • Work with NISRA and ONS to develop a communications strategy and scenario plans to support

	resilience in face of a significant incident.
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Key Findings

Overall Return Rate

Figure 1: Census Rehearsal 2019 Returns

Type of Return	Number of Returns	Percentage of Returns
Paper	3,000	16%
Online	15,500	84%
Total:	18,500	

Over 72,000 households were contacted during Scotland's Census Rehearsal 2019, with nearly 18,500 households responding. The overall return rate was 25%, with the majority of those responses online. Given that there was no follow up by field workers, the overall return rate of 25% was in line with the National Records of Scotland expectations. However, it must be noted that whilst it is encouraging that the overwhelming majority of returns were online, the rehearsal was voluntary and the areas covered by the rehearsal were not designed to be representative of the population of Scotland. It was not the intention of the rehearsal to undertake a statistical analysis of the responses but to test systems and services that would be used. It cannot be assumed that the response rates and patterns achieved in the rehearsal would be representative of the outcome at a national level in 2021.

Figure 2: Overall Completed Return Rate by Area - Census Rehearsal 2019

Local Authority	Overall Return Rate	Overall Return Rate
Dumfries & Galloway	36%	25%
Na h-Eileanan Siar	34%	
Glasgow City	17%	

Figure 2 broadly reflects our understanding of the general willingness of areas to take part in a rehearsal and the known levels of digital exclusion in those areas.

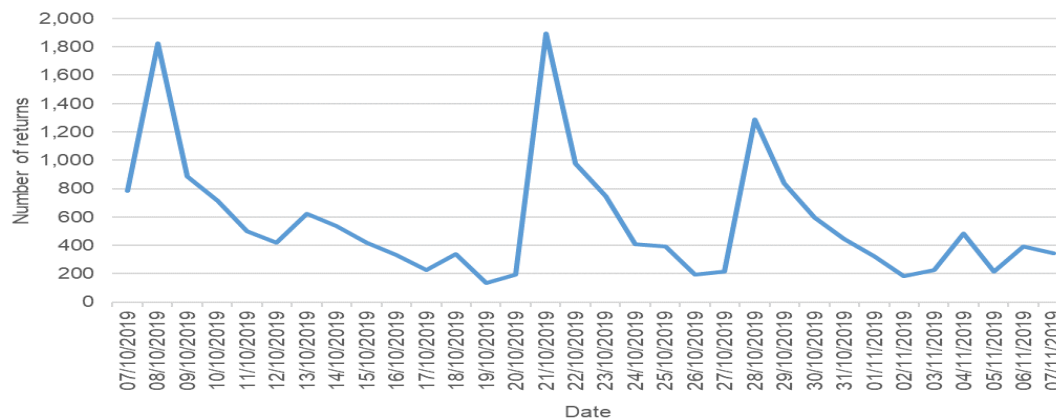
In addition, the rehearsal also allowed National Records of Scotland to look at how long it took respondents on average to complete the online questionnaire. The results suggest that one person living alone took on average 17 minutes to complete the online questionnaire (provided they saw and responded to every question). End to end completion time did not vary significantly depending on whether a respondent had a long-term health condition or not.

Initial Contact Materials and Reminder Letters

The rehearsal showed that the process of distributing contact materials, including the effectiveness of the initial contact letters and reminder letters, worked well.

The impact of the initial contact letters and two waves of reminder letters can be demonstrated by the peaks of returns seen in *Figure 3*.

Figure 3: Daily number of returns - Census Rehearsal 2019



The timeline for when contact materials are sent out is being reviewed to ensure that there is sufficient time for the public to respond before reminders are sent out to households who have not yet responded.

As a result of lessons learned from the rehearsal, further work is also being carried out to tailor the letters to improve the recipient experience.

Communications and Marketing

The primary objectives of the communications campaign for Scotland's Census Rehearsal 2019 was to encourage online completion wherever possible. This included practical arrangements such as an on-call rota for out-of-hours enquiries, public relations, social media content, stakeholder engagement and publicity.

It was decided as part of the scope of the rehearsal that the communications campaign would be conducted in-house by National Records of Scotland's Census communications team. The local nature of the rehearsal meant that the full range of activities required for a national campaign were not all tested. The campaign was successful overall in terms of outputs.

Increased resources to support stakeholder and community engagement, and a mass marketing and publicity campaign, will be used to support the delivery of the census. Further work will be done to build crucial stakeholder and community relationships to promote engagement with the census across Scottish society.

In addition, even more so than for the census in 2011, our presence and engagement on social media will be crucial. The rehearsal showed that "post boosting" on both Facebook and Twitter, content generation and the sharing of this by stakeholders on their social media channels, was successful.

This approach could be replicated for the census without significantly increasing resource, although the time taken to contact stakeholders to encourage this on a national basis must be taken into account.

Whilst the overall approach to media announcements and activities during the rehearsal was a success, it did identify areas of development to ensure that we successfully deliver Scotland's Census 2021. For example, the rehearsal demonstrated that any delays to media activities can mean the opportunities for local coverage, which will be vital to the success of our engagement strategy, can be lost due to deadlines being missed.

We have procured a public relations agency as an additional resource to help us deliver our strategy, and this will help us generate mass coverage of the census across all platforms and stage targeted interventions in areas with lower completion rates.

Questionnaires, Data Capture and Processing

The rehearsal provided an additional opportunity to gather evidence to help inform the final recommendations on the question set for Scotland's Census 2021. In particular, it acted as a test for the online presentation of the question set, particularly those questions which were either new or significantly revised.

Whilst the rehearsal intentionally did not test the questions themselves, some analysis of the data confirms that the new and revised questions performed effectively. There were no serious flaws in the quality of the data obtained (except where there were previously anticipated issues with functionality in rehearsal), nor any indication that their inclusion had any significant adverse effect on the overall level of returns achieved. The information provided by respondents generated summary profiles which were in line with expectations.

Evaluation of data capture and coding of online responses has highlighted a number of improvements for Scotland's Census 2021. Analysis is ongoing to evaluate coding processes and paper capture, including how well online predictive text functionality has performed.

Public Assistance

Many aspects of public feedback gained through the rehearsal reaffirmed the need for planned improvements for the census in 2021. As an example, the rehearsal demonstrated that free text entries on the online questionnaire should be improved and better signposted. It further highlighted the need to update the process flow through the online questionnaire (an improvement that was already scheduled) to clearly reflect the routing of the questions for those aged under 16, ensuring that those that are responsible for providing a census return only complete the appropriate questions for anyone aged under 16.

The job description suggestions for the online questionnaire will also be reviewed, as feedback from members of the public indicated that these do not cover a number of specific roles. This was a known issue going into the rehearsal and this issue is being explored.

During the rehearsal, the internal systems for contact centre staff worked well and there were some usability improvement suggestions that will be taken forward. Some issues with making address changes were also found.

Logistics and Print

Questionnaire materials, and the logistics behind producing and issuing contact material, performed well and are recommended for Scotland's Census 2021. The rehearsal demonstrated there is a need for some changes to address data transfer to suppliers to allow for different address formats.

Data Collection Operational Management System

The Data Collection Operational Management System (DCOMS) is the tool that manages interactions with each address in Scotland and allows the tracking of census returns. DCOMS tracks the issue and usage of census questionnaire internet access codes (the unique codes that are used to access the online response system) and paper contact materials. DCOMS also provided a report on the enumeration status of each household address included in the rehearsal.

The configuration of daily reports from DCOMS management information and analytics have been recommended for improvement. DCOMS functioned well but requires testing to ensure it will handle the increased volumes of the full census.

IT Service Introduction

In advance of the rehearsal, the National Records of Scotland prepared a set of criteria aimed at measuring the effectiveness and quality of IT operational delivery and support. This covered operational processes for major incident management, service management, security incidents, security management, the telephone helpline, and all online and data transfer systems during rehearsal.

Following the rehearsal, recommendations for system and process performance improvements were documented and accepted, with suppliers being engaged where relevant. The recommendations include improvements to system and security monitoring, enhancements to support documentation, improved resilience of automated processes, further training and testing of service management processes and improvements in resource planning.

Census Address Register

During the rehearsal, address lists were correctly produced and disseminated within the allocated time. This solution will now be taken forward for Scotland's Census 2021.

The rehearsal did reveal issues with the address structure and format required to post out the initial contact letter and on-demand paper questionnaires. However, this issue was fixed during the early stages of the rehearsal period.

There were also issues with how some addresses were presented online. This resulted in calls to the telephone helpline service and the creation of some duplicate addresses. The functionality to search for addresses online will be improved for Scotland's Census 2021.

Changes have also been recommended to better assist the contact centre staff to find the correct address, which will hopefully limit the number of duplicate addresses that are created. We will also continue to work with external stakeholders to improve their classifications so that household addresses are correctly identified as residential.

Management Information

During rehearsal, the compilation of management information was mainly a manual process and we found that it will not scale well to provide the volume of information needed for the census in 2021. Therefore, we are reviewing how we present management information to meet the requirements of the intended audiences .

Conclusion

Scotland's Census Rehearsal 2019 was a significant undertaking, particularly given the digital first approach National Records for Scotland is taking for Scotland's Census 2021. It required a significant amount of work by our internal stakeholders, detailed engagement and feedback with our external stakeholders and, most of all, the voluntary participation of members of the public in those areas selected to take part.

We are extremely grateful for these contributions, which have helped National Records of Scotland deliver a successful rehearsal that has provided valuable insights across the 11 Key Learning Areas. It is clear that the vast majority of the measures that we have in place to deliver the census are the right ones and, whilst there are areas that require improvement, the data gathered through the rehearsal overwhelmingly demonstrates that we are on the right path.

Work will continue through to 2021 and beyond, to ensure that we are operationally ready for the census, whether that is working through the improvements identified by the rehearsal, or finalising the census statistical and operational design. We will also continue to stress test new and existing systems and services.

For more than 200 years, censuses taken in Scotland have provided vital information and insight into who we are as a nation. The 22nd census will be the most comprehensive and detailed one yet, and the success of this rehearsal shows that National Records of Scotland is on course to deliver a census for all in Scotland in this digital century.