

**Scotland's Census 2021  
Sex and Gender Identity  
Topic Report**

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## 1. Main Points

- Sex is a key demographic variable and since 1801 the census has sought to collect the number of males and females resident in Scotland.
- There is a well-established user need for sex data as:
  - It is a vital input to population, household and other demographic statistics which are used by central and local government to inform resource allocation, target investment, and carry out service planning and delivery.
  - Sex is a protected characteristic as set out in the Equality Act 2010 and the data are widely used to inform equality impact assessments.
- There is respondent need for a non-binary sex question.
- Gender identity has not been asked in previous censuses.
- A user need for information on gender identity was also identified as:
  - It is a protected characteristic as set out in the Equality Act 2010 and data are required in relation to fulfilling the duties specified for public bodies in that legislation.
  - It is required to justify policy developments that will reduce inequalities experienced by trans people, for designing and enhancing public services.
  - The census is the only source which would provide reliable data on the size and locality of the trans population in Scotland.
- The sex and gender identity questions are publicly acceptable.
- Testing has supported the opinion of stakeholders that a non-binary sex question is more acceptable and produces less item non-response than a question set comprised of a binary sex question followed by a gender identity question.
- The trans status question is acceptable to members of the trans and non-binary community and to the general population, and produces good quality data.
- Testing has shown that additional guidance in the question stem of the trans status question enables members of the general population to have a better understanding of the terminology and answer the question.
- The digital first approach for 2021 requires further development and user testing to fully understand the best way to present the questions online to maximise response, minimise respondent burden and ensure good quality data which meets user needs.
- Research and analysis does support taking a question on this subject further at this stage. An on-going programme of question development, focusing on sensitive or complex questions will further inform the specific question wording.

## 2. Introduction

This topic review sets out the evidence gathered in developing sex and trans status questions for Scotland's Census 2021.

Question development for the 2021 Census began in 2015. An iterative and comprehensive process of user consultation, evaluation and prioritisation of user requirements, and qualitative and quantitative question testing has been carried out to inform decisions on the questions to be recommended for inclusion in the 2021 Census. More information about [research and preparation](#) and [question development](#) for Scotland's Census 2021 can be found online.

The 2021 Census will be digital first. The Census 2021 questionnaire must gather high quality data that meets user needs. More information about [key elements of the design](#) for 2021 can be found online.

Two frameworks have been published by National Records of Scotland (NRS) to evaluate the effectiveness of [question design for existing, alternative and new questions](#) (PDF) and to evaluate the effectiveness of [question design of tick box response options](#) (PDF).

Questions and their response options are evaluated against five main themes:

### **Strength of user need**

- ✓ Data collected by the census must meet a user need for equality monitoring, policy development, resource allocation and/or service planning and delivery.

### **Suitability of alternative sources**

- ✓ Data collected by the census must meet a user need that cannot be met elsewhere.

### **Acceptability, clarity and data quality**

- ✓ Questions asked in the census must be acceptable to the majority of the public, clear and be designed with minimal respondent burden in order to obtain good data quality that meets user needs.

### **Comparability**

- ✓ Data collected by the census should be comparable over time where possible, and harmonised across the UK where reasonable.

### **Operational considerations**

- ✓ Census questions must be considered as part of the census as a whole, where effective digital and paper design, space and financial constraints must be considered. Additionally, some questions may be required for operational purposes in the process of conducting the census.

The final decision on the content of Scotland's Census 2021 questionnaire will ultimately be made by the Scottish Parliament.

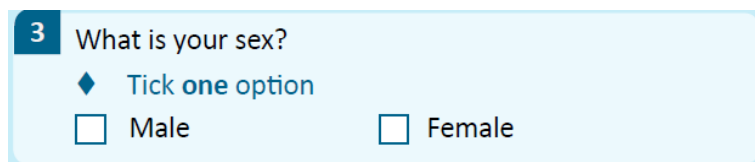
As in previous years, there will be separate censuses conducted by the Office for National Statistics (ONS) in England and Wales, and the Northern Ireland Statistics and Research Agency (NISRA) in Northern Ireland. The three census offices work together to develop a set of questions that, wherever possible and necessary, will deliver harmonised outputs across the UK.

### 3. Background

**Sex** is a key demographic variable and since 1801 the census has sought to collect the number of males and females resident in Scotland.

The 2011 sex question was a binary self-identified sex question and the online guidance said that people who were transgender could select the option for how they identify irrespective of the details recorded on their birth certificate.

*Figure 1: 2011 Sex question in Scotland*



3 What is your sex?

◆ Tick one option

☐ Male ☐ Female

**Gender identity** has not been asked in previous censuses. Gender identity refers to our internal sense of who we are, and how we see ourselves in regards to being a man, a woman, or somewhere in between/beyond these identities.

#### 3.1 Alternative Sources

Since 2012, a set of core questions has been used to provide information on the composition, characteristics and attitudes of Scottish households and adults across a number of topic areas through the three largest surveys in Scotland:

- the [Scottish Household Survey](#) (SHS)
- the [Scottish Health Survey](#) (SHeS)
- the [Scottish Crime and Justice Survey](#) (SCJS)

A set of core and harmonised questions is recommended in order to provide comparable estimates across Scotland. More information can be found on the Scottish Government website ([Core Survey Questions](#)). The Scottish Government also produce guidance for [collecting equality information](#), including gender.

Gender is a core survey question in Scotland. The core survey question asks

Question: Are you male or female?	
Answer:	1. Male
	2. Female

In 2018 the question was updated and now asks specifically about gender identity as follows:

HOW WOULD YOU DESCRIBE YOUR GENDER IDENTITY/HOW WOULD YOU DESCRIBE THE GENDER IDENTITY OF {NAME}?

(1) Man/Boy

(2) Woman/Girl

(3) In another way (if you would like to, please tell me what other words you use)  
[Other specify]

(4) Refused (spontaneous)

### 3.2 Equality and Human Rights Commission (EHRC) recommended questions

In 2012 the Equality and Human Rights Commission (EHRC) published a guide to help public authorities subject to the equality duty, and those thinking about or currently monitoring gender identity, to do so using an acceptable and methodologically robust approach.

The recommended question set is as follows:

Q1 At birth, were you described as....

Please tick one option

Male

Female

Intersex

I prefer not to say

Q2 Which of the following describes how you think of yourself?

Please tick one option

Male

Female

In another way: \_\_\_\_\_

Q3. Have you gone through any part of a process (including thoughts or actions) to change from the sex you were described as at birth to the gender you identify with, or do you intend to?

(This could include changing your name, wearing different clothes, taking hormones or having gender reassignment surgery).

Yes ☐ → Please go to Q4

No ☐ → END

Q4 Continuing to think about these examples, which of the following options best applies to you?

Please tick one option

I am thinking about going through this process ☐

I am currently going through this process ☐

I have already been through this process ☐

I have been through this process, then changed back ☐

None of the above ☐ \_\_\_\_\_

I prefer not to say ☐

The questions should be asked of those aged 16 and over.

Question 1 asks for sex at birth, question 2 asks gender identity and questions 3 and 4 address gender reassignment as a protected characteristic and a personal process (rather than a medical process).

Question 1, when used in combination with question 2, allows for a trans identity and/or history to be collected. There will be people with a trans identity and/or history who will not disclose it through questions 1 and 2. This is because while most people who have transitioned will think about their sex at birth when answering, some people with a Gender Recognition Certificate (GRC) may answer this question by indicating their acquired sex.

Data from question 1 and 2 may result in underestimating the number of people with the protected characteristic of gender reassignment as classified under the Equality Act and so it is therefore recommended that the following two questions are asked.

Questions 3 and 4 address gender reassignment as a protected characteristic and a personal process (rather than a medical process). While question 3 has been designed to be answered by the whole population; only those that identify under the trans umbrella will be asked to answer the fourth question.

Including these questions, which address intention to undergo gender reassignment, allows evidence to be collected for trans services users, employees and people within other given populations, using the Equality Act's legal definition.

It would not be possible to include the four EHRC questions in the 2021 Census to collect data on gender identity and trans status due to space constraints on the paper questionnaire and respondent burden of answering 4 questions on one topic.

#### **4. Understanding user need**

NRS invited views on [Scotland's Census 2021 – Topic Consultation](#) (PDF) between 8 October 2015 and 15 January 2016. The consultation was a key step towards understanding what information users will need from the census in 2021, and helped to build strong cases to justify the inclusion of topics. The focus of the consultation was on information required at topic level, not the detail of the questions that should be asked on the questionnaire.

Following the consultation, NRS worked closely with stakeholders through follow-up events, meetings, focus groups and online surveys to gather more detailed information about data requirements to ensure user needs were understood. Information about these events can be found on our [Get Involved pages](#) online.

There were 47 responses received through the topic consultation on the subject of basic demographics. A summary of these responses can be found in the [Topic Consultation Report](#) (PDF). In this report, NRS acknowledged that there is a well-established user need for the key demographic variable sex. Along with age, the sex variable is a vital input to population estimates and household projections which are used by central and local government to inform resource allocation, target investment, and carry out service planning and delivery. Sex is a protected characteristic as set out in the Equality Act 2010 and the data are widely used to inform equality impact assessments. They are also essential for analysis and research conducted by a wide range of users, including public bodies and third and private sector organisations. Following the consultation NRS proposed to continue to collect information on sex in 2021.

A need for information on gender identity was also identified via the consultation and even though this was not suggested by NRS, stakeholders set out their user need for this as an additional topic. Gender reassignment is a protected characteristic as set out in the Equality Act 2010 and a range of organisations told us that data is required in relation to fulfilling the duties specified for public bodies in that legislation. They told us that a reliable data source on the size and locality of the trans population in Scotland is required to justify policy developments that will reduce inequalities experienced by trans people, and for designing and enhancing public services to meet specific needs, particularly in relation to the provision of health services. Because Scotland's trans population is small and distributed widely across the country, the census was suggested as the only source which would be comprehensive enough to provide accurate information on that population.

From the consultation, the precise nature of the concepts to be measured were not understood and NRS concluded that further work was required to understand the exact nature of user need.



A [Sexual Orientation and Gender Identity Stakeholder Event](#) was held on 24 January 2017. A summary of this event is available on the Scotland's Census website.

At this event stakeholders identified a respondent need for changing the 2011 binary sex question in that the 2011 sex question which is mandatory does not allow non-binary people to answer the question truthfully. A non-binary self-identified sex question allows those who do not identify as either male or female to tick a third response option and write in how they identify. People who are trans are also able to tick the response option for how they identify rather than their having to disclose their sex assigned at birth e.g. a trans man may self-identify as male.

A user need for data about the trans population was also identified as a requirement. The non-binary self-identified sex question does not meet this need as trans men and trans women may identify as male or female. The data need is met by the trans status question.

A direct question asking if a person is trans was preferred to the alternative of asking a question about sex assigned at birth followed by a gender identity question as trans people may find the sex assigned at birth question intrusive. Also for the general population, these questions may seem repetitive and increase respondent burden.

## 5. Question testing

This section provides evidence from the question testing process carried out by NRS in the question development process for Scotland's Census 2021.

Both cognitive testing and quantitative testing processes were used in developing census questions. In addition, public acceptability testing was also undertaken for this topic.

1. Public acceptability testing is undertaken primarily to ascertain the acceptability of asking a question, whether respondents would answer the question for themselves, or on behalf of others in their household, and the impact on overall response of inclusion of sensitive questions.
2. Cognitive testing is a form of in-depth interviewing with a small number of respondents. It aims to provide an insight into the mental processes respondents use when answering questions. This helps us to identify if there are any problems with a question or question design and gain an insight into the source of any difficulty respondents are having.
3. Quantitative testing is undertaken primarily to identify data quality concerns. NRS included feedback questions in the quantitative testing in order to gather further information on public acceptability and to identify specific difficulties respondents faced if they were unable to answer a question easily.

### 5.1 Gender identity testing by Ipsos Mori for the three UK census offices

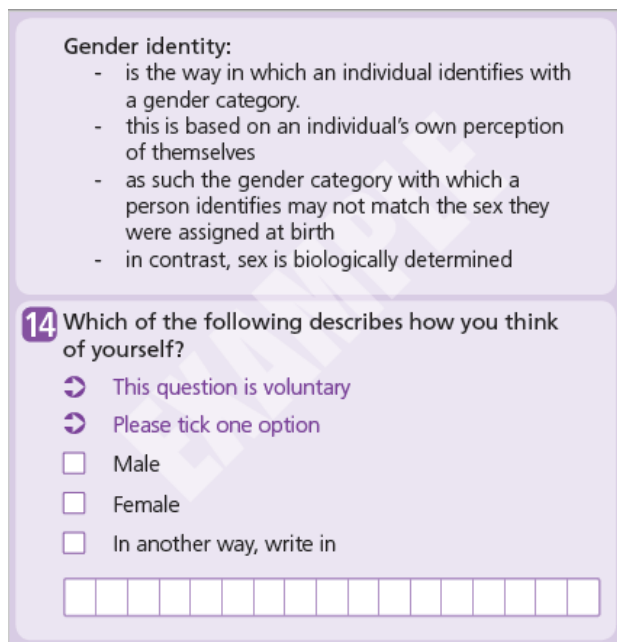
#### 5.1.1 Public acceptability testing

In January - March 2017 Ipsos MORI carried out public acceptability testing for the gender identity topic for the three UK census offices. Details on the methodology and results for Scotland are available in Annex A.

Public acceptability testing is designed to explore the views of the public on the acceptability of including sensitive questions in the census, thereby identifying particular sensitivities and potential barriers to public confidence and exploring mechanisms for overcoming concerns.

The primary aim of the survey was to explore the acceptability of the inclusion of a gender identity question in the 2021 Census. The research explored whether respondents would answer a question on gender identity if included and whether respondents might wish to request an individual form or stop completing the census form entirely.

*Figure 2: Question 2 of the Equality and Human Rights Commission's recommended gender identity questions, as tested in the questionnaire*



Gender identity:

- is the way in which an individual identifies with a gender category.
- this is based on an individual's own perception of themselves
- as such the gender category with which a person identifies may not match the sex they were assigned at birth
- in contrast, sex is biologically determined

**14** Which of the following describes how you think of yourself?

➤ This question is voluntary

➤ Please tick one option

☐ Male

☐ Female

☒ In another way, write in

The survey questionnaire also explored;

- whether respondents would be willing to answer on behalf of any other household members.
- whether respondents would be willing for any other household members aged 16 and over to answer such a question on their behalf.

For respondents who indicated that they would not answer the gender identity question in the census form, reasons for not answering were explored.

Public acceptability testing identified that the majority (77%) of the general public in Scotland considered it acceptable for question two of the EHRC recommended questions on gender identity to be asked on the next census, with less than one in ten (8%) saying that it is unacceptable. The vast majority (84%) would answer the question on gender identity accurately if it was included in the 2021 Census; suggesting that some of those who found the question unacceptable would nonetheless provide an answer if asked.

Overall, 7% said they would not answer a gender identity question if it was included in the 2021 Census. The majority of these (6%) said they would skip the question and continue completing the rest of the form. Only a very small proportion of respondents said that they would request an individual form (less than 1%) or stop completing the census altogether (1%).

Testing also highlighted that clarification on why information regarding gender identity was required and additional reassurances of information security could go some way to addressing respondent's reluctance to answer the question.

The proportion of the public who regarded the question on gender identity as not acceptable remained stable when asked to reflect on how they would feel if another household member was to provide an answer on their behalf (7%), or if they were to provide an answer on behalf of another member of their household aged 16 and over (9%). However, in the context of providing an answer on behalf of another household member aged 15 or under, the proportion who found the question unacceptable increased to 16%.

Age is a key factor influencing how people respond to the idea of including the question on gender identity in the next census: older people were less likely than younger people to find the concept acceptable and to answer the question if it were included in the 2021 Census.

Based on these findings that a gender identity question was acceptable to the general public, a gender identity question was taken forward into further quantitative testing in order to identify if there were any data quality concerns associated with its inclusion.

### 5.1.2 Quantitative testing

In June – August 2017 Ipsos MORI carried out quantitative testing for the gender identity topic for the three UK census offices. Details on the methodology and results for Scotland are available in Annex B.

The research used a quantitative methodology to examine to what extent, if any, the quality of information on sex and gender identity varied depending on the question(s) used to collect this information. Addresses across Scotland were mailed an initial invitation letter encouraging them to complete an online questionnaire, which was followed by a mailing of a paper questionnaire and then a reminder postcard. In total, 15,579 respondents were included in the first mailing. Overall, a 35% response rate was achieved.

Respondents were randomly assigned to three equal groups in Scotland, representing the version of the sex/gender identity question contained within their questionnaire. The first version of the question contained the current binary ('Male / Female') sex question used in the 2011 Census; the second version was a non-binary sex question, in that it included an 'Other, write in' answer option in addition to 'Male' and 'Female'; and the third version was a gender identity question set made up of two parts, with the first step mirroring the binary sex question ('Male / Female') and the second step asking about gender identity, with 'Man', 'Woman' and 'In another way, write in' as the three answer codes.

*Figure 3: The binary sex question*

3 What is your sex?

◆ Tick one option

☐ Male

☐ Female

*Figure 4: The non-binary sex question (with 'other, write in')*

3 What is your sex?

◆ Tick one option

☐ Male

☐ Female

☐ Other, write in

*Figure 5: The sex and gender identity question set*

3 What is your sex?

◆ Tick one option

☐ Male ☐ Female

4 Which of the following describes how you think of your gender identity? *This question is voluntary*

◆ Tick one option

☐ Man ☐ Woman

☐ In another way, write in

The testing aimed to investigate if:

- The version of the sex/gender identity question included in the questionnaire had an impact on likelihood to either complete the survey or to make contact in another way (for example by partially completing a questionnaire or refusing to participate) through analysis of the return rates.
- The level of item non-response differed across the binary sex question, non-binary sex question and the gender identity question set.
- There was any difference in data quality – including multi-ticking, invalidated questions and tampering with questions – across each version of the questionnaire.

The testing identified that:

- The version of the questionnaire received by the address had no impact on likelihood to complete the survey, but receipt of the version containing the non-binary sex question increased respondents' likelihood to make contact in another way.

- The inclusion of an 'Other, write in' response option did not significantly change the level of item non-response in comparison to the binary sex question.
- When the gender identity question set was included, the level of item non-response significantly increased compared to both the binary sex question alone and the non-binary sex question alone.
- Where item non-response occurred at the gender identity question set, it was more likely to occur at the second step (gender identity question) than at the first step (binary sex question).
- The incidence of multi-ticking was very low, making it unfeasible to conduct statistical analysis. Levels of tampering and invalidating questions were also very low (only three cases) and, therefore, it was not possible to test for differences between levels of tampering/invalidating by question version.

Following the quantitative testing, NRS wanted to investigate possible reasons for the higher rate of item non-response for the binary sex question followed by the gender identity question compared to the binary and non-binary sex questions. NRS also wanted to investigate whether a non-binary sex question followed by a trans status question suggested at the Stakeholder Event and through further consultation with key stakeholders would be a preferred option to a binary sex question followed by gender identity and trans status questions.

## 5.2 Sex, gender identity and trans status testing by ScotCen for NRS

In autumn 2017 NRS commissioned ScotCen Social Research to conduct cognitive and quantitative testing of selected questions for potential inclusion in Scotland's Census 2021. Information about this testing can be found in the [2017 Cognitive and Quantitative Testing Report](#) (PDF).

### 5.2.1 Cognitive testing

During the cognitive interviews questions were tested on sex, gender identity and trans status. Both a binary sex question and a non-binary sex question were tested (the binary sex question was designed to be used in combination with the gender identity question, the non-binary question was designed to be used on its own with no accompanying gender identity question).

The questions tested are shown below:

Figure 6: Questions tested on sex, gender identity and trans status

Version one: Sex and Gender Identity version	Version two: Non-binary Sex
<p><b>1</b> What is your sex?</p> <p>◆ Tick one option</p> <p><input type="checkbox"/> Male <input type="checkbox"/> Female</p> <p><b>2</b> Which of the following describes how you think of your gender identity? <i>This question is voluntary</i></p> <p>◆ Tick one option</p> <p><input type="checkbox"/> Man <input type="checkbox"/> Woman</p> <p><input type="checkbox"/> In another way, please write in</p> <p>□ □ □ □ □ □ □ □ □ □ □ □ □ □ □ □ □ □ □ □</p> <p><b>3</b> Do you consider yourself to be transgender, or have a transgender history?</p> <p>◆ Tick one option</p> <p><input type="checkbox"/> Yes</p> <p><input type="checkbox"/> No</p> <p><input type="checkbox"/> Prefer not to say</p>	<p><b>1</b> What is your sex?</p> <p>◆ Tick one option</p> <p><input type="checkbox"/> Male</p> <p><input type="checkbox"/> Female</p> <p><input type="checkbox"/> Other, please write in</p> <p>□ □ □ □ □ □ □ □ □ □ □ □ □ □ □ □ □ □ □ □</p> <p><b>2</b> Do you consider yourself to be transgender, or have a transgender history?</p> <p>◆ Tick one option</p> <p><input type="checkbox"/> Yes</p> <p><input type="checkbox"/> No</p> <p><input type="checkbox"/> Prefer not to say</p>

These questions were tested with members of the trans community and members of the general population.

The aims of testing were to:

- Explore whether there is clear understanding of the concepts of the sex, gender identity and transgender both within the trans community and the general population;
- Explore the acceptability of including questions on sex, gender identity and transgender within the census, for both the trans community and the general population;
- Which combination of questions (binary sex and non-binary gender identity or non-binary sex) was preferable in terms of both understanding and acceptability?

Cognitive testing identified:

- Respondents had different understandings of the term sex when answering. Some respondents assumed sex referred to 'biological sex' or 'assigned sex at birth' whereas others saw the term to have the same meaning as gender, and could refer to the sex they 'self-identified' as.
- Respondents understanding of the term 'sex' appeared affected by both their prior conceptions of the term, and the other questions asked. Having a separate question on gender identity may have reinforced the notion that 'sex' refers to biology, whereas 'gender' refers to identity.

- Respondents' interpretation of the term sex directly impacted on perceived acceptability of the questions in trans respondents. Interpretation of the term sex also impacted on these respondents' ability to provide an answer. Some trans respondents objected to providing their biological sex or assigned sex at birth (although this was not the intended meaning of the question).
- Issues were raised with the binary sex question by some respondents. Some respondents felt that a 'Male/Female' response was not sufficient.
- There were no objections to the inclusion of a question on gender identity in the census; there were, however, concerns about using a question on gender identity in combination with a binary question on sex.
- Some respondents from the trans community expressed scepticism when writing in 'other' text responses, relating to how these would or would not be analysed. It was indicated that further transparency on how these responses are handled would give this group more confidence to self-define on the census.
- No major issues with acceptability were raised in the cognitive sample regarding the trans status question.

Following the cognitive testing, a non-binary sex question followed by a trans status question were taken forward to quantitative testing. In the trans status question, the term 'transgender' was changed to 'trans' based on comments provided during the cognitive testing and from advice from key stakeholders.

### 5.2.2 Quantitative testing

A non-binary sex question followed by a trans status question were included in the individual section of the questionnaire for testing.

#### Non-binary sex 2017 test (paper)

##### 10 What is your sex?

◆ Tick **one** box only

☐ Female

☐ Male

☐ Other, please write in

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#### Trans status 2017 test (paper)

##### 11 Do you consider yourself to be trans, or have a trans history?

◆ Tick **one** box only

☐ Yes

☐ No

☐ Prefer not to say



The aims of testing these questions were:

- to analyse the distribution of responses, including similarities and differences in distribution by mode and age;
- to analyse item non-response rates by mode as a measure of data quality and acceptability;
- to analyse uptake of 'prefer not to say' for the question on trans status; and
- to analyse invalid responses as a measure of data quality.

Results of the quantitative testing showed

- Around 97% of respondents provided a valid response to the non-binary sex question. Most invalid responses to the non-binary sex question were item non-response (3%, compared with <1% of multi-ticks).
- Around 94% of respondents provided a valid response to the question on trans status. Item non-response was the primary reason for invalid responses (6%, compared with <1% of multi-ticks).
- 2% of respondents reported finding the question on trans status difficult to answer.

### 5.3 Further Cognitive Testing

In autumn 2018 further cognitive testing was carried out. This testing aimed to look at the effects of including additional guidance in the question stem for the sex and trans status questions.

From earlier testing it was apparent that trans and non-binary respondents were unaware that the sex question allowed them to answer with their self-identified sex instead of their biological sex and so extra guidance was added to the stem of the question to see whether this enabled a better understanding. An alternative wording for the 'Other' response option was also tested as previous testing had shown that the term 'Other' was not acceptable to some respondents.

The three versions of the sex question tested were:

Figure 7: Sex Question – version A

**A What is your sex?**

◆ Tick **one** box only

☐ Female

☐ Male

☐ Other, please write in



Figure 8: Sex Question – version B

**B What is your sex?**

- ◆ Please select the option for how you identify.
- ◆ Tick **one** box only

☐ Female

☐ Male

☐ Other, please write in

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Figure 9: Sex Question – version C

**C What is your sex?**

- ◆ Please select the option for how you identify.
- ◆ Tick **one** box only

☐ Female

☐ Male

☐ Identify in another way, please write in

--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--

Earlier testing also showed that a small proportion of the general population found the trans status question difficult to answer as they were unsure of the terminology 'trans' or 'transgender'. Guidance was added to the question stem to see if that made the question clearer for the general population.

The two versions of the trans question tested were:

Figure 10: Trans Status Question – version A

**A Do you consider yourself to be trans, or have a trans history?**

- ◆ This question is voluntary
- ◆ Tick **one** box only

☐ Yes      ☐ No

Figure 11: Trans Status Question – version B

**B Do you consider yourself to be trans, or have a trans history?**

- ◆ This question is voluntary
- ◆ Trans is a term used to describe people whose gender is not the same as the sex they were assigned at birth.
- ◆ Tick **one** box only

☐ Yes      ☐ No

Cognitive testing of the questions with was carried out through face to face interviews with the trans and non-binary population. In parallel, a small scale online sample survey of the general population was carried out.

### 5.3.1 Results for the sex question

Key results of cognitive testing:

- All respondents were able to answer all three versions of the question on sex that included the non-binary sex response options allowing for people to identify as intersex or non-binary.
- Overall, there was a strong support for the non-binary response options within the question on sex.
- During interviews the respondents indicated that the guidance in the question stem was not clear in versions 2 and 3, and that it was difficult to decide how to interpret what the question was asking. Specifically, whether the question is asking about biological sex, gender identity or gender expression.
- Respondents suggested that additional guidance would be helpful, however, it is not essential to include that guidance in the question stem.
- Some respondents indicated that the version A was clearer because of its simplicity and as it is a commonly asked question they are familiar with.
- The majority of respondents felt that the terminology in version C of 'Identify in another way' (rather than 'Other') was more inclusive; however, some said that that this made it a gender identity question.
- When shown the question on sex in isolation, respondents interpreted the word 'sex' as biological sex. As a result, non-binary respondents interpreted the question asking about biological sex and did not respond as 'Other' as they assumed this option was for intersex.
- However, having seen the question on trans status later in the interview, respondents noted that they would have answered the sex question differently. Specifically, without seeing the trans status question some trans respondents were not sure how to answer the sex question and would probably chose 'Other' response option and write in, for example, 'Trans man/ Trans woman'. Thus, presenting the two question together provided better understanding by respondents and improved data quality.

Key results of survey testing:

Please note that the online survey included two versions of the Sex Question – version A (Figure 7) and version B (Figure 8).

- Some feedback indicated there are a small number of respondents who have the view that sex can only be binary, and commented that therefore the question should be binary.
- The majority of the respondents interpreted the word 'sex' in the version A of the question as biological sex. A few respondents commented that the use of

word 'identify' in version B was not appropriate or misleading when asking about biological sex, as it implies gender identity rather than sex.

- Some respondents provided comments on their understanding of the differences between sex and gender (or gender identity) as separate concepts, and that the use of word 'identify' suggests that the question on sex is asking about gender.
- The vast majority of respondents found version A easy to answer. Nearly 30% of respondents found version B difficult to answer.

### 5.3.2 Results for the trans status question

- Overall the trans status question received a positive response.
- It was noted by most respondents the importance of including a definition of the term 'trans' as not everyone – both in the general population as well as the trans community - would necessarily be familiar with the terminology.
- The definition of the term 'trans' was found acceptable, clear and easy to understand.
- Trans respondents noted that including 'trans history' in the question stem was important, as some people who have had a trans history would not identify as trans now.
- All respondents were able to answer the question on trans status with ease on behalf of themselves.
- Respondents were comfortable answering on behalf of another member of their household if they had their permission to do this.
- Respondents indicated that the question on trans status should be asked of everybody filling in the census regardless of age.

## 6. Conclusion

The question development process so far has identified:

- The requirement for a question set on sex and trans status that can produce good quality data and meets user needs;
- There is respondent need for a non-binary sex question;
- Testing to date has shown that sex, gender identity and the trans status questions are publicly acceptable and no data quality issues were identified;
- Testing has supported the view of stakeholders that a non-binary sex question is more acceptable and produces less item non-response than a question set comprised of a binary sex question followed by a gender identity question; and
- Whilst the latest testing has been essential in developing the sex and trans status questions, further development and testing is required to fully

understand the wording and terminology to allow inclusive questions which all respondents can answer with ease. Specifically, further testing on the inclusion of write-in boxes in the sex and trans status questions is required, along with further development of alternatives to 'Other' terminology.

## **7. Next Steps**

NRS is continuing question development of a full question set for the 2021 Census and will be considering questionnaire design and respondent burden. The final decision on the content of Scotland's Census 2021 questionnaire will ultimately be made by the Scottish Parliament.

The digital first approach for 2021 requires further development and user testing to fully understand the best way to present the questions online to maximise response, minimise respondent burden and ensure good quality data which meets user needs. An on-going programme of question development, focusing on sensitive or complex questions will further inform the specific question wording.

More information about preparation for Scotland's Census 2021 and details about upcoming events can be found on the [Scotland's Census website](#), by subscribing to the [Scotland's Census newsletter](#) and following us on Twitter [@NatRecordsScot](#).

## Annex A: Public acceptability testing for the gender identity question

Following the 2021 Census topic consultation, which identified a clear data need for improved information on gender identity, NRS commissioned Ipsos MORI to undertake a survey of the public in Scotland to explore the acceptability of including a gender identity question in the 2021 Census.

### 1. Question and measurement aims

The primary aim of the survey was to explore the acceptability of the inclusion of a gender identity question in the 2021 Census. The research explored;

- whether respondents would answer a question on gender identity if included.
- whether respondents might wish to request an individual form or stop completing the census form entirely.

*Figure A1: Question 2 of the Equality and Human Rights Commission's recommended gender identity questions, as tested in the questionnaire*

Gender identity:

- is the way in which an individual identifies with a gender category.
- this is based on an individual's own perception of themselves
- as such the gender category with which a person identifies may not match the sex they were assigned at birth
- in contrast, sex is biologically determined

**14** Which of the following describes how you think of yourself?

➤ This question is voluntary

➤ Please tick one option

☐ Male

☐ Female

☐ In another way, write in

The survey questionnaire also explored whether respondents would be willing to answer on behalf of any other household members. It also explored whether respondents would be willing for any other household members aged 16 and over to answer such a question on their behalf. For respondents who indicated that they would not answer the gender identity question in the census form, reasons for not answering were explored.

## 2. Sampling

The survey sample in Scotland was designed to provide a representative sample of private residential addresses to enable robust within-country analysis to be conducted.

The sample of addresses for the survey was selected from the Postcode Address File (PAF). The PAF is a list of all addresses in the UK maintained by the Royal Mail. It was used as it is the most representative sample frame of the general population living in private households. An un-clustered sample design was used with addresses selected systematically from the PAF in postcode order, avoiding the 2017 Census Test and nationwide sample areas.

A boosted sample of 5,000 addresses were sampled in Scotland to achieve 1,000 interviews, based on an assumed response rate of 20%.

As the PAF contains no information about residents at each address, it was not possible to pre-select the specific individual within each household to complete the survey. In order to avoid bias towards household heads and post openers, a random choice of respondent is sometimes adopted (e.g. adult in the household with the next birthday). However, this approach can suppress response rates and is often not correctly adhered to.

Instead, (up to) two adults at each address were provided with separate log-in codes and invited to complete the survey online. This approach ensured that, in those households where more than one adult completed the survey, respondents are not restricted to the head of household or post opener, without adding further to respondent burden.

## 2. Survey methodology

Survey fieldwork took place between 14 January 2017 and 20 March 2017 and used a push-to-web methodology – a sequential mixed modes design: with online, followed by paper. This approach was chosen as it replicates the census methodology, while ensuring that estimates are more reflective of the general population than a single-mode postal or online survey. The survey process in England and Wales and Scotland was as follows:

1. Sampled households were sent a survey invitation including the survey URL, two unique logins, as well as instructions for receiving a paper questionnaire should they require it. While two people per household were invited to complete the survey, the invitation letter made it clear that one response per household was sufficient.
2. Approximately three weeks after the initial mailing, addresses where no one had completed the survey online were sent a tailored reminder letter, including their unique logins, as well as a paper version of the questionnaire and an addressed freepost envelope in which to return their completed questionnaire to Ipsos MORI.
3. Approximately one week later, a final postcard reminder was sent as a nudge to increase response. For confidentiality reasons, this postcard did not contain login details.

### 3. Online questionnaire

Respondents were able to complete the online survey by navigating to the survey URL ([www.ipsos-mori.com/census-research](http://www.ipsos-mori.com/census-research)) and entering one of the unique access codes contained in their advance letter or cover letter. Once a respondent had started completing the survey, they were able to exit and re-enter the survey at a later time (again, using their unique access code), and their answers would be saved.

While the content of the online and paper questionnaires was identical, in order to minimise mode effects – where the mode of the survey causes the responses to differ – the online survey was designed to be as similar to the postal survey as possible. For example, the formatting of the online survey, including the order and layout of response codes was consistent with the paper questionnaires. The online questionnaire also allowed respondents to skip questions without providing an answer, as would be the case for respondents responding to the paper questionnaire. The key difference between the online and paper questionnaire was that the online questionnaire automatically routed respondents around irrelevant questions, thereby reducing the chance of error.

The online survey was designed to be compatible with different devices so that respondents could easily complete the questionnaire using a smart phone or tablet if they chose.

### 4. Postal questionnaire

While the push-to-web design aims to maximise online responses, a substantial proportion of people were unlikely to complete the online survey for a variety of reasons:

- Respondent not making the effort to go online to complete the questionnaire;
- Respondent not having online access; and
- Respondent would prefer to complete a postal questionnaire.

Inclusion of a paper questionnaire at the second mailing increased the likelihood of converting these reluctant respondents. Respondents were provided with an addressed freepost envelope in which to return their completed questionnaire to Ipsos MORI.

The paper questionnaires were designed in conjunction with survey methodologists and graphic designers (as well as being subject to early cognitive testing with members of the public). The aim was to produce questionnaires that were as clear as possible thus reducing burden on respondents and maximising response rates. The final questionnaires were four sided A4 booklets, printed in colour.

### 5. Telephone helpline and email address

Throughout fieldwork a Freephone telephone helpline and email address were available for any respondents who had queries about the research. This phone number and email address were printed on the invitation letter, cover letter, and paper questionnaire.



Ipsos MORI received a significant number of queries on the telephone helpline, via email, and by post from respondents. The majority of these were similar in nature – respondents asking to opt out, requests for paper versions of the questionnaires, and respondents encountering difficulties accessing the online questionnaire were common queries received.

There was a list of set responses for the telephone team to use as a guideline when responding to telephone queries. Each telephone query received was logged in an Excel spreadsheet along with a query code which identified what the call was about. Calls from respondents opting out were identified and logged so they could be removed from future mailings.

Queries received in the survey email inbox were received by the core project team. Automated replies were set up which sent automatic responses to respondents with answers to the most common queries asked. Less common queries were dealt with individually and responded to by members of the project team. Opt-outs were recorded and these reference numbers were removed from further mail-outs.

Mail about the survey was received by the Ipsos MORI scanning team. This mail was divided into two types – spoiled mail and white mail. Spoiled mail consisted of questionnaires that had been damaged and were unusable. White mail included any letters written about the survey. Any opt-outs in the white mail were logged and reference numbers were removed from further mailings.

## 6. Response rates

The research sought to survey up to two adults (aged 16 and over) at every address. This makes it difficult to calculate response rates as the number of adults in non-participating households is unknown. Therefore, it is more reliable to calculate the response rate based on the proportion of sampled addresses that provided at least one response to the survey. The response rate was 22% (1,087 responses).

*Table A1: Gender Identity questionnaire response rates*

Country	Invited	Completed	Response rate
Scotland	5,000	1,087	22%

## 7. Weighting

The survey dataset had been weighted to ensure that it is representative of the usually resident population – adults aged 16 and over in Scotland. Data are weighted by country, age (within country) and sex (within country) using the 2015 annual mid-year population estimates.

## 8. Data editing

As the majority of the completed questionnaires were on paper, there is a degree of completion error that occurs (e.g. ticking more than one box when only one response



is required, answering a question not relevant to them, or missing questions out altogether). Therefore, it is necessary to undertake a certain amount of editing to ensure the data is logical. For example:

If a respondent ticked more than one box where only one answer is required, then their reply for that question is excluded;

Where respondents are allowed to tick more than one box for a particular question, the reply to that question is excluded if they select two conflicting answers; and

If a respondent failed to tick the relevant answer for a filter question, then any responses are excluded from the subsequent questions relating to the filter question.

## 9. Results

It should be remembered that the survey findings are based on a sample of adults in Scotland, rather than the entire population. Therefore, results are subject to sampling tolerances, and not all differences are statistically significant.

The survey dataset was weighted to ensure that it is representative of the usually resident population of adults aged 16 and over in Scotland. Data were weighted by age and sex using the 2015 annual mid-year population estimates.

Where percentages in the tables do not sum to 100, this is due to rounding or because questions allow multiple answers. An asterisk (\*) denotes any value of less than half of 1%, but greater than zero. A dash (-) denotes a value of zero.

The analysis is based on a single response per household. Where more than one response from an individual household was received, one response was selected at random to be included in the dataset.

*Table A2: Acceptability of including a sexual orientation question on the census in Scotland*

<b>Country</b>	<b>Scotland</b>
Base: All respondents	1,087
<b>Very acceptable</b>	39%
<b>Acceptable</b>	38%
<b>Undecided</b>	11%
<b>Not acceptable</b>	4%
<b>Not at all acceptable</b>	4%
<b>Not stated</b>	3%
<b>Total</b>	100%

*Table A3: Acceptability of including a gender identity question on the census by age (Scotland)*

<b>Age</b>	<b>25-34</b>	<b>35-44</b>	<b>45-54</b>	<b>55-64</b>	<b>65-74</b>	<b>75+</b>
Base: All respondents	59	116	186	240	274	215
<b>Very acceptable</b>	52%	43%	48%	38%	31%	22%
<b>Acceptable</b>	31%	36%	37%	44%	38%	48%
<b>I am undecided</b>	12%	17%	9%	10%	15%	10%
<b>Not acceptable</b>	4%	1%	3%	4%	6%	6%
<b>Not at all acceptable</b>	1%	1%	3%	2%	6%	6%
<b>Not stated</b>	-	1%	1%	2%	3%	8%
<b>Total</b>	100%	100%	100%	100%	100%	100%

*Table A4: Reported response to a gender identity question*

<b>Country</b>	<b>Scotland</b>
Base: All respondents	1,087
<b>I would answer accurately and continue to complete household form</b>	84%
<b>I would answer inaccurately and continue to complete the household form</b>	*
<b>I would skip the question and continue completing the rest of the household form</b>	6%
<b>I would stop completing the household form and request an individual form to complete</b>	*
<b>I would stop completing the household form and not submit the Census form altogether</b>	1%
<b>Other</b>	-
<b>Not stated</b>	8%
<b>Total</b>	100%

*Table A5: Reported response to the gender identity question by age*

<b>Age</b>	<b>25-34</b>	<b>35-44</b>	<b>45-54</b>	<b>55-64</b>	<b>65-74</b>	<b>75+</b>
Base: All respondents	59	116	186	240	274	215
<b>Would answer the question accurately and continue completing the household form</b>	95%	92%	89%	87%	75%	75%
<b>Would answer inaccurately and continue completing the household form</b>	-	-	-	-	-	-
<b>Would skip the question and continue completing the household form</b>	-	3%	5%	4%	11%	6%
<b>Would stop completing the household form and request an individual form</b>	-	-	-	-	2%	-
<b>Would stop completing the household form and not submit the census form</b>	1%	-	1%	1%	-	-
<b>Other</b>	2%	-	-	-	-	-
<b>Not stated</b>	1%	5%	5%	8%	12%	19%
<b>Total</b>	100%	100%	100%	100%	100%	100%

*Table A6: Reasons for not answering a gender identity question*

Country	Scotland
Base: All respondents who would not answer the question	82
I cannot see why the information is needed	55%
The information is personal and private	44%
I have concerns about the security of the information I provide	8%
I do not agree with the concept of alternative gender identity	3%
I do not understand the question	4%
I would be worried my answer might go against me in some way	2%
I would be worried another member of the household will see my answer	10%
Not stated	3%

*Table A7: Acceptability of answering a gender identity question on behalf of other household members aged 16 and over*

Country	Scotland
Base: All respondents who live with others aged 16 and over	555
Very acceptable	40%
Acceptable	34%
I am undecided	16%
Not acceptable	5%
Not at all acceptable	4%
Not stated	1%
Total	100%

*Table A8: Reported accuracy of answering a gender identity question on behalf of other household members aged 16 and over*

Country	Scotland
Base: All respondents who live with others aged 16 and over	555
Could answer accurately for all members of household	90%
Could answer accurately for some but not all members of household	2%
Could not answer accurately for any members of household	4%
Unsure	3%
Not stated	1%
Total	100%

*Table A9: Comfort answering a gender identity question on behalf of other household members aged 16 and over*

Country	Scotland
Base: All respondents who live with others aged 16 and over	555
Very comfortable	74%
Fairly comfortable	13%
I am undecided	5%
Not very comfortable	3%
Not at all comfortable	3%
Not stated	2%
Total	100%

*Table A10: Acceptability of answering a gender identity question on behalf of other household members aged 15 or under*

Country	Scotland
Base: all who live with others aged 15 or under	107
<b>Very acceptable</b>	41%
<b>Acceptable</b>	17%
<b>I am undecided</b>	26%
<b>Not acceptable</b>	8%
<b>Not at all acceptable</b>	8%
<b>Not stated</b>	-
<b>Total</b>	100%

*Table A11: Reported accuracy of answering a gender identity question on behalf of other household members aged 15 or under*

Country	Scotland
Base: all who live with others aged 15 or under	107
<b>Could answer accurately for all members of household</b>	86%
<b>Could answer accurately for some but not all members of household</b>	-
<b>Could not answer accurately for any members of household</b>	9%
<b>Unsure</b>	3%
<b>Not stated</b>	2%
<b>Total</b>	100%

*Table A12: Comfort answering a gender identity question on behalf of other household members aged 15 or under*

Country	Scotland
Base: All respondents	107
<b>Very comfortable</b>	58%
<b>Fairly comfortable</b>	10%
<b>I am undecided</b>	16%
<b>Not very comfortable</b>	6%
<b>Not at all comfortable</b>	8%
<b>Not stated</b>	2%
<b>Total</b>	100%

*Table A13: Acceptability of other household members, aged 16 and over, answering a gender identity question on behalf of respondent*

Country	Scotland
Base: All respondents	555
<b>Very acceptable</b>	47%
<b>Acceptable</b>	33%
<b>I am undecided</b>	10%
<b>Not acceptable</b>	4%
<b>Not at all acceptable</b>	3%
<b>Not stated</b>	3%
<b>Total</b>	100%



*Table A14: Reported accuracy of other household members, aged 16 and over, answering a gender identity question on behalf of respondent*

Country	Scotland
Base: all who live with others aged 16 and over	555
<b>All members of household could answer accurately</b>	90%
<b>Some members of household could answer accurately</b>	1%
<b>No members of household could answer accurately</b>	2%
<b>Unsure</b>	4%
<b>Not stated</b>	3%
<b>Total</b>	100%

*Table A15: Comfort with other household members, aged 16 and over, answering a gender identity question on behalf of respondent*

Country	Scotland
Base: All respondents who live with others aged 16 and over	555
<b>Very comfortable</b>	75%
<b>Fairly comfortable</b>	11%
<b>I am undecided</b>	6%
<b>Not very comfortable</b>	1%
<b>Not at all comfortable</b>	3%
<b>Not stated</b>	3%
<b>Total</b>	100%

## Annex B: Quantitative testing for the gender identity question

In June – August 2017 Ipsos MORI carried out quantitative testing for the gender identity topic for the three UK census offices.

### 1. Objectives

The main purpose of the research was to explore the impact on data quality of sex and gender identity questions asked in three ways. In Scotland the following questions were tested:

1. A binary sex only question (from the 2011 Census – ‘male’/‘female’);
2. A non-binary sex question with ‘write in’; and
3. A gender identity question set (the binary sex question followed by a gender identity question)

Specifically, the survey methodology, questionnaire and analysis were designed to address a number of research objectives:

1. What would be the quality of the information collected, in terms of item non-response, expected distributions and ‘correctness’ of answer, including potential census ‘mischievousness’, if:
  - (a) there was a non-binary sex question; and
  - (b) there were separate sex and gender identity questions.
 Both (a) and (b) compared with the base line of the current binary sex question.
2. What would be the effect on overall response to the survey, if:
  - (a) there was a non-binary sex question; and
  - (b) there were separate sex and gender identity questions.
 Both (a) and (b) compared with the base line of the current binary sex question.
3. Whether there are there any variations in response and quality of responses across a range of protected characteristics.

### 2. Methodology

Three versions of the questionnaire were distributed, with different versions of the sex/gender identity question. The questionnaires also contained a range of other demographic questions that may be included within the next census, as well as some questions about how the respondent would complete the census if it were undertaken today. Although the questions of interest in this survey for answering the research questions about data quality were the sex/gender identity questions, the other questions were included to allow for analysis of data quality by respondent profile. It also meant that respondents were unaware that the sex/gender identity questions were of particular interest – the survey materials sent out to respondents never specified that this was the key topic of interest. The hidden nature of the sex/gender identity questions ensured as much as possible that respondents would

respond to the questions in a way which they 'normally' would, without changing their answers to the sex/gender identity questions due to the subject matter of interest. Survey respondents were first invited to complete an online version of a questionnaire, with non-respondents then sent a paper version, to mimic the census methodology of 'online first'.

The binary sex question

3 What is your sex?

◆ Tick one option

☐ Male

☐ Female

The non-binary sex question (with 'other, write in')

3 What is your sex?

◆ Tick one option

☐ Male

☐ Female

☐ Other, write in

The gender identity sex question set

3 What is your sex?

◆ Tick one option

☐ Male ☐ Female

4 Which of the following describes how you think of your gender identity? *This question is voluntary*

◆ Tick one option

☐ Man ☐ Woman

☐ In another way, write in

The survey used the same methodology across all questionnaire versions. This was a push-to-web approach, in which an invitation letter was sent to addresses encouraging them to complete the survey online. The letter provided householders with the survey URL and a unique log-in code. Approximately two weeks after the initial mailing, all those who had not completed the survey online<sup>1</sup> were mailed a paper questionnaire. A final postcard reminder was mailed approximately one week following the paper questionnaire mailings. Mailings were not addressed to named individuals, as names were not available in the sample frame used, and one person per household was invited to take part in the survey. No instructions were given as to which person at the address should complete the survey.

<sup>1</sup> Householders who had opted out or where the address was found to be incorrect or non-existent were removed from the second and third mailings.

### 3. Sampling

A sample of randomly selected residential addresses was drawn from the Scottish Address Register. Commercial addresses or cases where addresses were missing or unusable (because they were missing vital information for example) were omitted from the sample, so the sample contained only residential households. NRS oversampled by 4% in order to account for unoccupied properties, non-residential addresses etc., and thus maintain the intended response rate.

### 4. Results

#### 4.1 Impact on response to survey

The research sought to determine whether response rates and return rates in Scotland differed across the binary sex question, the non-binary sex question and the gender identity question set.

#### 4.2 Response rates

For the purposes of this analysis, the response rate represents the proportion of sampled addresses, from which a completed survey (either online or paper) was received. The response rates achieved within Scotland, by questionnaire version, are detailed in Table B1.

*Table B1: Achieved response rates in Scotland by questionnaire version (unweighted data)*

	Binary sex question	Non-binary sex question	Gender identity question set
	35%	36%	35%
<b>Response rate</b>	1,811 responses of 5,193 survey invitations sent	1,887 responses of 5,193 survey invitations sent	1,835 responses of 5,193 survey invitations sent

An Analysis of Variance (ANOVA) was conducted to examine the effect of questionnaire version on response rate. ANOVA is a statistical approach that allows for the detection of differences among groups when there are more than two. ANOVA is an omnibus test; it tests for an overall experimental effect and allows to correct for “familywise error rate<sup>2</sup>” which would be above the standard levels<sup>3</sup>, if

<sup>2</sup> In statistics, family-wise error rate is the probability of falsely rejecting the null hypothesis (type I error), when performing multiple hypotheses tests.

<sup>3</sup> The accepted probabilities to make a type I error (or significance levels) are: 10%, 5% and 1%.

multiple t-tests are performed. This approach detects if an experiment (i.e. the new question wording) has a statistically significant impact, and then, through pairwise comparisons, will highlight the differences between each group.<sup>4</sup>

The results of the ANOVA showed that in Scotland there were no statistically significant interactions between the questionnaire version and response rate,  $F(2, 15,576) = 1.269$ ,  $p = .281$  (see Table B2 )

*Table B2: ANOVA table exploring the effects of differing question version on response rates in Scotland (unweighted data)*

	Sum of Squares	Degrees of freedom	Mean Square	F	Significance
<b>Between questionnaire versions</b>	0.581	2	0.291	1.269	0.281
<b>Within questionnaire versions</b>	3,567.332	15,576	0.229		

#### 4.3 Return rates

For the purpose of analysis, the return rate represents the proportion of sampled addresses, from whom contact was received. This includes, requests to opt-out of the survey, letters returned to Ipsos MORI unopened (for example where the address was unoccupied), incomplete online surveys, or paper questionnaires that were returned spoiled.

The 'return rate' is therefore calculated as the sum of the categories listed below, divided by the total number of households invited to participate:

- the number of completed paper questionnaires;
- the number of completed online questionnaires;
- the number of returned spoilt paper questionnaires;
- the number of partial completes;
- the number of refusals (mostly by email and phone); and
- the number of returned to sender (typically unoccupied households whereby the questionnaire was returned)

The return rates achieved in Scotland, by questionnaire version, are detailed in Table B3.

<sup>4</sup> Error inflation occurring during pairwise comparisons was corrected using the Bonferroni method.

*Table B3: Achieved return rates in Scotland by questionnaire version (unweighted data)*

	Binary sex question	Non-binary sex question	Gender identity question set
	37%	39%	37%
<b>Return rate</b>	1,901 responses of 5,193 survey invitations sent	2,012 responses of 5,193 survey invitations sent	1,932 responses of 5,193 survey invitations sent

An ANOVA was conducted to examine the effect of question version on return rate. The results of the ANOVA showed that in Scotland there was a statistically significant interaction between the question version and return rate,  $F(2, 15,576) = 5.118$ ,  $p = .006$  (see Table B4).

*Table B4: ANOVA table exploring the effects of differing question version on return rates in Scotland (unweighted data)*

	Sum of Squares	Degrees of freedom	Mean Square	F	Significance
<b>Between questionnaire versions</b>	0.187	2	0.093	5.118	0.006
<b>Within questionnaire versions</b>	284.415	15,576	0.018		

Exploration of this interaction was conducted using separate pairwise comparisons. Analysis shows that within Scotland, the return rate was significantly higher for the non-binary sex question compared with either the binary sex question and the gender identity question set ( $p = .011$  and  $p = .027$  respectively). There was no difference in return rate between the binary sex question and the gender identity question set ( $p = 1.00$ ).

In Scotland the questionnaire version received, each with different versions of the sex/gender identity question, had no impact on the household's likelihood to complete the survey. However, the likelihood of the household to make contact in another way (e.g. by opting out of the research, returning the mail to sender, or abandoning the online survey partway) was increased for the non-binary sex question.

#### 4.4 Response by key respondent characteristics

Analysis was conducted to assess whether the characteristics of respondents varied across the version of the questionnaire with the binary sex question, non-binary sex question and gender identity question set. As addresses were randomly allocated to questionnaire versions, any significant variation in the characteristics of respondents across questionnaire versions may indicate that the difference in the sex/gender identity question had an impact on householders' likelihood to complete the survey.

T-tests were used on unweighted data, to test for statistically significant differences in respondent characteristics by age, ethnicity, religion, marital status, national identity, and health. No statistically significant differences were found across questionnaire versions by any of the respondent characteristics in Scotland.

The likelihood to respond to each of the three questionnaire versions in Scotland was not impacted by a respondent's demographic profile.

#### 4.5 Survey responses by mode

Respondents could choose whether to complete the survey online or on paper. Analysis of responses by survey mode has been conducted by age and sex using t-tests.

#### 4.6 Mode analysis by age

In Scotland, respondents in the younger age groups were significantly more likely to complete the survey online than on paper. Older respondents in contrast were significantly more likely to respond on paper. Higher proportions of respondents in the three youngest age groups (16-24 years, 25-34 years and 35-44 years) completed the survey online than on paper, and higher proportions of respondents in the four oldest age groups (45-54 years, 55-64 years, 65-74 years and 75+ years) completed the survey on paper than online.

Table B5 presents a breakdown of response by age and mode. The highlighted cells show where the response by mode is significantly higher.

*Table B5: Mode of response by age in Scotland (unweighted data)<sup>5</sup>*

Age		Mode of response		
		Online	Paper	Total
16-24 years	Count	52	32	84
	%	61.9	38.1	100
25-34 years	Count	193	169	362
	%	53.5	46.7	100
35-44 years	Count	278	251	529
	%	52.6	47.4	100
45-54 years	Count	388	522	910
	%	42.6	57.4	100
55-64 years	Count	438	770	1,208
	%	36.3	63.7	100
65-74 years	Count	406	964	1,370
	%	29.6	70.4	100
75+ years	Count	166	887	1,053
	%	15.8	84.2	100

#### 4.7 Mode analysis by sex

Analyses were also conducted examining mode of response by sex. While both sexes were more likely to respond by paper than online, male respondents were significantly more likely than female respondents to respond online.

Table B6 shows the breakdown of the number of responses by mode and sex. The highlighted cells show where the response by mode is significantly higher than the corresponding figure.

<sup>5</sup> Unweighted data was most appropriate for this analysis to avoid any influence the weighting by age and sex could have on the findings. However, conducting the same analysis on the weighted data provides a similar pattern of findings.



*Table B6: Mode of response by sex in Scotland, respondents answering the binary sex question (at both the binary sex question version and the gender identity question set versions of the questionnaire) (unweighted data)*

Gender		Mode of response		
		Online	Paper	Total
Male	Count	669	990	1,659
	%	40.3	56.7	100
Female	Count	631	1,339	1,970
	%	32.1	67.9	100

#### 4.8 Item non-response

##### 4.8.1 Item non-response by question version

The research sought to determine whether the level of item non-response differed across the binary sex question, non-binary sex question and gender identity question set. For the binary sex question and the non-binary sex question, item non-response was identified where, despite answering the majority of the questionnaire, the respondent left the question blank (on the paper questionnaire), or skipped the question without answering (on the online survey). For the gender identity question set, failure to respond to either step of the question was treated as item non-response. Descriptive statistics for levels of item non-response in Scotland are presented in Table B7. Mean item non-response was 0.8% at the sex question, 0.5% at the non-binary sex question and 2.3% at the gender identity question set.

*Table B7: Descriptive statistics for item non-response in Scotland for the three question versions (weighted data)*

Question version	N	Mean	Standard Deviation	Standard Error	95% Confidence Interval for Mean	
					Lower Bound	Upper Bound
Binary sex question	856	0.8%	0.090	0.003	0.00	0.01
Non-binary sex question	883	0.5%	0.067	0.002	0.00	0.01
Gender identity question	890	2.3%	0.151	0.005	0.01	0.03

An ANOVA was conducted to examine the effect of question version on level of item non-response. The results of the ANOVA showed that within Scotland there was a statistically significant interaction between the question version and level of item non-response,  $F(2, 2,626) = 7.449$ ,  $p = .001$  (see Table B8).

*Table B8: ANOVA table exploring the effects of differing question version on mean item non-response in Scotland (weighted data)*

	Sum of Squares	Degrees of freedom	Mean Square	F	Significance
<b>Between questionnaire versions</b>	0.177	2	0.089	7.449	0.001
<b>Within questionnaire versions</b>	31.221	2,626	0.012		

Pairwise comparisons showed that in Scotland, mean incidence of non-response to the gender identity question set was significantly higher than non-response to the binary sex question ( $p = 0.011$ ) or to the non-binary sex question ( $p = 0.001$ ). There was no difference in mean item non-response between the binary sex question and the non-binary sex question ( $p = 1.000$ ) (see Table B9 ).

*Table B9: Multiple comparisons of mean item non-response across question versions in Scotland (weighted data)*

Question version		Mean Difference	Standard Error	Significance	95% Confidence Interval	
					Lower Bound	Upper Bound
Binary sex question	Non-binary sex question	0.004	0.005	1.000	-0.01	0.02
	Gender identity question set	-.015*	0.005	0.011	-0.03	0.00
Non-binary sex question	Binary sex question	-0.004	0.005	1.000	-0.02	0.01
	Gender identity question set	-.019*	0.005	0.001	-0.03	-0.01

#### 4.8.2 Item non-response within the gender identity question set

In Scotland where item non-response occurred at the gender identity question set, it was more likely to occur at the second step (gender identity question), than at the first step (binary sex question).

The gender identity question set is qualitatively different from the two other versions of the sex/gender identity question as it involves two distinct questions, as opposed to the other versions where a single question is asked. Analysis was conducted on the gender identity question set to compare item non-response between the first step (binary sex question) and the second step (gender identity question).

Table B10 shows descriptive statistics for item non-response at the first and second step of the gender identity question set in Scotland. Mean item non-response was 1.6% at the first step and 2.6% at the second step of this question.

*Table B10: Descriptive statistics for item non-response in Scotland for gender identity question set (weighted data)*

Step within the gender identity question set	Mean	N	Standard Deviation	Standard Error mean
Binary sex question (step 1)	1.6%	890	0.12435	0.00417
Gender identity question (step 2)	2.6%	890	0.00000	0.00000

A t-test was used to compare the average number of missing responses at the two stages of this question. Table B11 shows that there was a significant difference between the two means, with the average being significantly higher for missing the second step of the gender identity question set compared to those missing the first step ( $p = 0.00$ ).

*Table B11: Paired samples test in Scotland for two-step gender identity question (weighted data)*

Step within the gender identity question set	Mean	Standard Deviation	Standard Error mean	95% Confidence Interval of the Difference		t	Degrees of freedom	Significance
				Lower	Upper			
Comparison of 1 <sup>st</sup> step & 2 <sup>nd</sup> step	-0.98431	0.12435	0.00417	-0.99249	-0.97613	-236.185	889	0.000

Comparison of item-non response between the two forms of the binary sex-question (the standalone binary sex question, and the binary sex question that forms part of the gender identity question set) was not possible due to the low number of respondents who did not report their gender identity.

#### 4.9 Response to gender identity question set

Analysis was conducted to gain an understanding of how respondents answered the gender identity question set. Overall in Scotland, the responses of 0.5% of those who answered both steps of the question suggested that their gender identity differed to their sex. A full breakdown of the response distribution to the gender identity question set is presented in Table B12.

*Table B12: Breakdown of response distribution to the gender identity question set, Scotland (unweighted data).*

Reported gender identity	Reported sex	
	Male (N)	Female (N)
Man	811	4
Woman	3	963
Other	1	1

As shown in Table B12, two respondents reported their gender identity as 'other' and completed the 'write in' response. Of these two respondents, one gave a write-in response 'unsure', while the other gave a response which voiced support for the inclusion of a gender identity question set but did not answer the question.

In Scotland the inclusion of the non-binary question does not significantly increase the level of item non-response in comparison to the binary sex question. However, when the gender identity question set is included, the level of item non-response is significantly increased compared to both the binary sex question alone and the non-binary sex question alone.

#### 4.10 Quality of response

These findings indicate that, regardless of the version of the sex/gender identity question received by respondents, there was no evidence of invalidating or tampering with these questions in Scotland.

The research also sought to investigate effects on the quality of data for sex and gender identity collected from each version of the questionnaire. In addition to item non-response, the research examined the prevalence of multi-ticking at questions, invalidated sex and gender identity questions and tampering with these questions. Analysis of these indicators of data quality were conducted by questionnaire version within Scotland.

#### 4.11 Multi-ticking by questionnaire version

Multi-ticking was identified where a respondent had selected multiple responses at the sex/gender identity question included in their questionnaire. For the gender identity question set, multi-ticking at one or both steps of the question were counted as one incidence of multi-ticking. Multi-ticking can only be identified within the postal responses to the survey, as the online script purposefully prevented respondents from being able to select more than one response at any single-code question.

Of the 3,612 postal responses received in Scotland, there were 11 incidences of multi-ticking; one at the binary sex question, five at the non-binary sex question and five at the gender identity question set (three at the first step and two at the second step). The numbers were too small to allow for statistical analysis.

Due to the low incidence of multi-ticking, it was not possible to conduct statistical analysis to assess whether the incidence of multi-ticking varied across the questionnaire versions.

#### 4.12 Invalidated questions

Invalidated questions were where a respondent wrote a message on or next to a question, without changing any answer options (which was defined as 'tampering' with a question rather than invalidating, see paragraph below). All of the responses from respondents from Scotland were manually sorted and cases of invalidated questions were identified at the binary sex question, non-binary sex question and

gender identity question set. Invalidated questions only applied to postal responses, as the online version of the questionnaire did not allow for invalidating questions.

There were no cases of invalidating at the binary sex question, the non-binary sex question or the gender identity question in any of the versions of the questionnaires received in Scotland.

#### 4.13 Tampering with questions

In addition to examining the prevalence of invalidated sex and gender identity questions, returned questionnaires were reviewed for evidence of tampering at the binary sex question, non-binary sex question and gender identity question set.

Tampering is defined as changing the answer options at the binary sex question, non-binary sex question and gender identity question set.

There were no cases of tampering at the binary sex question, the non-binary sex question or the gender identity question in any of the versions of the questionnaires received in Scotland.

## Annex C: Cognitive testing for the sex and trans status questions

In autumn 2017 NRS commissioned ScotGen Social Research to conduct cognitive and quantitative testing of selected questions for potential inclusion in Scotland's Census 2021. Information about this testing can be found in the [2017 Cognitive and Quantitative Testing Report](#) (PDF).

### 1. Questions tested and measurement aims

During the interviews a number of different questions on sex and gender identity were tested. The first version of questions tested included:

1. A *binary* sex question only (where response options were 'Male' or 'Female' only);
2. A *non-binary* gender identity question (where response options were 'Man' 'Woman' and an open 'In another way' category), succeeding a binary sex question; and
3. A trans status question on whether someone considered themselves to be transgender, or to have a transgender history.

The second version of questions tested included three questions. This was made up of:

1. A non-binary sex question (where the response options included an 'other' category); and
2. A trans status used in the first version of the questions.

Questions tested are shown in Figure C1 below:

Figure C1: Questions tested on sex, gender identity and trans status

Version one: Sex and Gender Identity version	Version two: Non-binary Sex
<p><b>1</b> What is your sex?</p> <p>◆ Tick one option</p> <p><input type="checkbox"/> Male <input type="checkbox"/> Female</p> <p><b>2</b> Which of the following describes how you think of your gender identity? <i>This question is voluntary</i></p> <p>◆ Tick one option</p> <p><input type="checkbox"/> Man <input type="checkbox"/> Woman</p> <p><input type="checkbox"/> In another way, please write in</p> <p><input type="text"/></p> <p><b>3</b> Do you consider yourself to be transgender, or have a transgender history?</p> <p>◆ Tick one option</p> <p><input type="checkbox"/> Yes</p> <p><input type="checkbox"/> No</p> <p><input type="checkbox"/> Prefer not to say</p>	<p><b>1</b> What is your sex?</p> <p>◆ Tick one option</p> <p><input type="checkbox"/> Male</p> <p><input type="checkbox"/> Female</p> <p><input type="checkbox"/> Other, please write in</p> <p><input type="text"/></p> <p><b>2</b> Do you consider yourself to be transgender, or have a transgender history?</p> <p>◆ Tick one option</p> <p><input type="checkbox"/> Yes</p> <p><input type="checkbox"/> No</p> <p><input type="checkbox"/> Prefer not to say</p>

These questions were tested with members of the trans and non-binary community and members of the general population.

The aims of testing were to explore:

- whether there is a clear understanding of the concepts of the sex, gender identity and transgender both within the trans community and the general population;
- the acceptability of including questions on sex, gender identity and trans status within the census, for both the trans community and the general population<sup>6</sup>; and
- which combination of questions (binary sex and non-binary gender identity or non-binary sex) was preferable in terms of both understanding and acceptability.

Findings on each of the questions tested are discussed in more detail below.

## 2. Findings on the binary sex question

The first question tested was 'What is your sex?' with a set of binary sex response options (i.e. 'Male' and 'Female'). The aim of the question was to collect data on respondent's *self-identified sex*<sup>7</sup>. Testing explored, amongst other things, the following key areas:

- Was a binary response sex question acceptable to respondents, including both general population respondents and trans respondents (i.e. both trans and non-binary groups)?
- How did respondents understand the term 'sex' in the binary sex question? In particular how did they react to the sex question having a gender identity question directly after it, and how does this influence understanding of the binary sex question?
- Were all respondents able to choose an answer (including trans and non-binary respondents)?

Each of these areas is discussed below.

### 2.1 Acceptability of a binary sex question

Broadly, the general population respondents found the binary sex question to be a standard question they would both expect to see in the census and would be comfortable answering. Amongst these respondents, there was a sense this question was answered automatically, without really thinking at all. Respondents

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<sup>6</sup> Please note acceptability will also be gauged quantitatively in a separate pilot, by looking at item level response rates to these questions in a larger sample.

<sup>7</sup> For the census conducted in 2011, National Records of Scotland collected information on sex using guidance that asked transgender or transsexual people to 'select the option for the sex that you identify yourself as'. Therefore the question intends to measure 'self-identified sex', rather than biological sex or assigned sex at birth. However, this guidance is not explicit in the question itself.



reflected that this is a question they are often faced within a variety of environments, from job applications to purchasing products online. This familiarity appeared to set them up with the ability to answer easily and with confidence.

Views amongst the trans respondents on the binary sex question were mixed; the binary sex question was frequently met with hesitation, and was evidently much less acceptable for this group. Some trans respondents reported finding the question 'tricky' and 'at least a little bit hard' due to its binary format. One trans respondent described the binary sex question (and specifically the term 'sex') as 'quite triggering' and explained that people may find it uncomfortable, as it forces one to disclose a piece of information they may no longer consider to be relevant. Some trans respondents felt that adding a 'prefer not to say' option could aid in making the binary sex question more acceptable. Discomfort appeared to be due to an assumption amongst some trans respondents that the question was asking for assigned sex at birth rather than self-identified sex.

In addition to the concerns described above a second issue was raised regarding the binary sex question. Some respondents from both the general population and the trans community commented finding the question unsuitable upon first glance, due to the lack of a 'third option' for people who are intersex. For example a respondent from the general population group stated the following during 'think aloud':

*'...it does seem to be missing an intersex box; you'd need that at some point.'*

Other respondents, from the trans community reflected that they knew of people who would be unable to answer the question due to their intersex status. One non-binary respondent added that the question:

*'...completely erases intersex people'*

Another respondent, who identified as a transgender man, thought that adding a third option to question one for intersex people would not be sufficient, and instead suggested adding a further question to ask 'have you ever identified as intersex, or as having an intersex condition?'

## 2.2 Understanding of the term 'sex'

Typically, respondents were found to have one of two key understandings of the term 'sex' when answering:

1. 'Sex' refers to biological sex, the sex you are assigned at birth or your sex characteristics; or
2. 'Sex' is synonymous with gender identity, it is who you are. Some respondents who understood sex in this way believed sex is a binary construct whilst others felt sex is non-binary (i.e. not just male or female).

The first understanding of the term sex was a person's 'biological sex', or their 'sex assigned at birth'. For testing purposes, the first interpretation is not the intended meaning of the question. In keeping with the 2011 Census, our default measurement aim for this item was 'self-identified sex'. However, one aim of testing was to establish whether this default measurement aim is working or not, and to explore alternatives.

The understanding of 'sex' as biological occurred in both the general population respondents and the trans respondents. Sex as biological was the dominant understanding amongst trans respondents. For these respondents, 'sex' was associated with a person's genitals, DNA or chromosomes. This view appeared to stem from their prior understanding of the term 'sex' as they had come across it in other contexts. However, their interpretation was also reinforced by the following question on gender identity. Having a separate question on gender identity highlighted to some respondents that 'sex' and 'gender identity' are separate concepts, and therefore 'sex' inferred biology or sex at birth whereas 'gender identity' inferred what they currently identify as.

*'Ok... So normally that means...biologically male... If I hadn't looked ahead to the other questions I probably would've ticked female... but because I have I'm aware this is probably... biologically.'*

A further respondent, who identified as 'mostly woman', explained that what was meant by 'sex' in the binary sex question was ambiguous. At first the respondent felt the term 'sex' meant a '*...reflection of gender identity*', but after scanning the rest of the questions in the version one set (binary sex, non-binary gender identity and trans status), the respondent changed their mind and felt that the binary sex question must be asking about biological sex instead.

The second understanding was that 'sex' and 'gender' were the same, and equate simply to 'male' and 'female'. This understanding was most common amongst respondents from the general population, though some trans respondents shared this view.

Some trans respondents were completely unsure what was meant by 'sex' in the context of a binary sex question, and were unsure whether to report their biological sex, sex assigned at birth, or the sex they currently identify with.

Finally one respondent described the term 'sex' as meaning 'sexual intercourse' on probing. However, this respondent answered the question as male/ female appropriately so it assumed this finding is an artefact of how the cognitive probes were asked.

### 2.3 Respondents ability to select an answer

Respondents' ability to select an answer was impacted by their understanding of the term 'sex' in relation to the binary sex question. Again, the term sex was understood in two ways i.e. 'sex' refers to biological sex / the sex you are assigned at birth or 'sex' is synonymous with gender identity, it is who you are.

Whilst general population respondents had mixed understanding of the term 'sex' all were able to provide an answer to the binary sex question during the cognitive interviews. Their understanding of the term sex did not affect the answers they gave in any way.

Trans respondents also had mixed understandings on what was meant by the term 'sex'. However, for this group understanding of the term did impact on their response given and whether they answered the question at all. Trans respondents (including non-binary respondents) who understood 'sex' to mean biological sex either responded with their assigned sex at birth or refused to answer the question. Trans

respondents who understood sex to be the same as their gender identity responded with their self-identified sex where possible. However, for non-binary respondents this is not possible given response options available:

*‘Stumps me immediately. In a lot of surveys there is no ‘other’ option and if I don’t have to answer it I will opt out of the survey as a whole ‘cos I don’t like it.’*

This led to non-binary respondents querying what the question was measuring, and saying that it was not clear whether they should give their identity or their biological sex. One non-binary respondent noted that they found questions like this *‘stressful’*, and added it was ambiguous in what it was asking. They were confused as to whether it was asking for their ‘gender’ or ‘assigned sex at birth.’ They added that, if it had asked for assigned sex at birth explicitly, they would have been able to answer.

Another trans respondent, who identified as a transgender male, reported finding questions asking for sex ‘upsetting’ because:

*‘...sex tends to be about chromosomes... and that’s why I find it hard to answer... it’s asking about the one thing I can’t change’*

Another trans respondent found the binary response options confusing.

*‘In the census I would tick female, because I am more female than male...would feel obliged to add an explanatory note which would say not born biologically female but feel more female than male. I am not what you would call a true woman, but my feelings and thoughts are female. Where I fit into this is very difficult...’*

Trans respondents sometimes reported dissatisfaction with the binary response options because they were *‘Quite restrictive’*. One non-binary respondent added they were *‘disappointed’* because it was limited to just the binary view of people. As mentioned previously, some respondents noted the inability of intersex people to be able to fit into these binary response options.

Table C1 shows how all trans respondents answered the binary sex question and their understanding of ‘sex’ in relation to this question. It should be noted some members of the trans community felt unable to answer the question at all and two respondents refused to answer the question – these two respondents both understood sex to mean biological sex. Other trans respondents did provide an answer but commented that they were not comfortable doing so or that they had to compromise and pick an answer they didn’t feel wholly fitted their identity.

*Table C1: Answer given by trans respondents at screening and at the binary sex question.*

Screening: What is your sex? (Open text answer)	Binary sex response: What is your sex? (Male/Female)	Understanding of 'sex'
Mainly woman	Female	Understood the question to be asking what sex was on their birth certificate.
Non-binary	Male	Understood the question to be asking about biological sex.
Non-binary	Male	Understood sex to be 'usually understood' as binary and biological.
Male (biologically), non-binary trans feminine	Male	<i>'...So that normally means biologically male... if I hadn't looked ahead to the other question [gender identity]) I probably would've ticked female...' sex meant your 'biology'.</i>
Male	Male	Felt it was not easy to pre-empt what the question was asking: queried whether it was asking assigned sex at birth, what was in their genetic material or how they identify.
Male, gender fluid	Male	Thought about biological sex when answering, but didn't think this would be clear for everyone.
Woman	Female	Understood the term 'sex' to mean 'intercourse'.
Woman	Female	Understood sex and gender to mean the same thing, and was thinking about how they identify when answering the question.
Female	Female	Understood sex to mean male or female genitals, or intersex people who are born with version of both.
Trans Woman	Female	Answered the question with how they identify over their biology, but was confused about what sex meant in the context of this question.
Trans Man	Refused	Understood the question to be asking sex assigned at birth.
Non-Binary (male at birth)	Refused	Felt there should be an 'other' option. Understood the question to be asking sex assigned at birth.

### 3. Findings on the Gender Identity question

A gender identity question was tested in conjunction with a binary sex question. This asked 'Which of the following describes how you think of your gender identity?' with a set of three response options (man, woman or in another way). The aim of the question was to collect data on respondent's self-identified gender identity. Testing explored, amongst other things, the following key areas:

- Was the gender identity question acceptable to respondents, including both general population respondents and trans and non-binary respondents?
- Were all respondents able to choose an answer?
- Was there any confusion between the binary sex question and the gender identity question and were the two questions seen as distinct?

It was found that respondents had varying opinions on the gender identity question when it was viewed in isolation compared to when it was used (as intended) in combination with the binary sex question. These issues are discussed throughout the following section.

In addition to these aims, respondents discussed the following issues with the gender identity question:

- Concerns about confidentiality;
- Views on the response options; and
- Other views on improving the question wording

Findings on each of these areas are also discussed.

#### 3.1 Acceptability of a gender identity question

There were no objections to the inclusion of a gender identity question per se in Scotland's Census 2021. However, there were concerns about using the gender identity question *in combination* with the binary sex question. Therefore this section will first look at reactions to the gender identity question when viewed in isolation and then look at its acceptability when used in combination with the binary sex question.

When viewed in isolation the gender identity question was met with a positive response by all respondents in the cognitive sample. No respondents from either the general population or trans community reported finding the question unacceptable to include in the 2021 Census. One respondent, who identified as non-binary, explained they felt completely comfortable answering this gender identity question in the census, as it gave individuals the ability to self-define which they felt is important for trans people. Another trans respondent felt 'very pleased' with the gender identity question. They particularly liked the answer categories 'man' and 'woman', and that there was space to write in for anyone who '*didn't fit that*'.

Respondents from the general population shared views of acceptance towards the gender identity question, with one respondent explaining that they thought the question was being asked because a binary sex question alone was 'too binary' and having a gender identity question 'breaks it down a bit', and is more inclusive.

In contrast issues were raised with using the gender identity question *in combination* with the binary sex question. Some respondents from the trans community queried why a question on sex was being asked as well as a question on gender identity. One trans respondent thought that the binary sex question was '*contradictory*' with a gender identity question and another (non-binary) respondent said the combination of questions made answering difficult in the sense that:

*'... it's not a question that... I understand why they are asking, as well as asking about gender identity...'*

These respondents deemed the combination of questions unnecessary, and, given the choice, would opt to remove the binary sex question so only gender identity is asked. This view stemmed from a belief that it wasn't necessary for the census to collect information on *biological* sex. Collecting information on people's gender identity, and how they lived their lives, was perceived to be more relevant. As discussed in section 10.3 having both a sex and a gender question seemed to reinforce the understanding that the binary-sex question was about biological sex or sex at birth rather than self-identified sex.

Respondents from the general population had mixed feelings about the combination of a binary sex question and a gender identity question. Some understood sex and gender identity to be different things, and one respondent explained that the gender identity question was:

*'...realising that... physical body might not match with your gender identity.'*

However, other respondents, felt that sex and gender identity are interchangeable terms, and expressed an understanding that the question on gender identity was asking the same thing as the binary sex question.

### 3.2 Respondents ability to select an answer

All respondents from both the general population and trans community were able to select an answer to the gender identity question. There were no cases of non-response to the gender identity question during the cognitive interviews, although two trans respondents declined to answer the binary sex question that was used in combination with the gender identity question.

The 'in another way response' was used by a number of trans respondents at the gender identity question. Therefore, for the trans respondents the gender identity question did capture different information to that captured by the binary sex question.

Generally, respondents from the general population reported that the gender identity question was as straightforward to answer as the binary sex question, and all gave the same responses for both questions. However, some general population respondents felt that the gender identity question was more difficult than the binary sex question. For example, one respondent from the general population said this question was more difficult as it was asking you how you *thought* about your gender identity. This confused the respondent as they understood sex and gender identity to be both the same and did not understand what was meant in how you would *think* about your sex. Despite the respondent's confusion, they were still able to give an appropriate response to the question.



Trans respondents varied in terms of how easy or difficult they found it to answer the gender identity question. Trans respondents who found it easy were positive about the inclusion of the open text box. For example, one respondent, who identified as non-binary, thought the gender identity question was easier to because:

*‘...the option to be more true to oneself is available there.’*

Another non-binary respondent said they found the gender identity question easy to answer as it allowed them to be autonomous. The importance of being able to self-identify one's gender identity was a common theme amongst trans respondents. In contrast, another respondent, who identified as non-binary and answered 'in another way: non-binary', added that it was *'slightly frustrating'* that they had to identify as 'in another way' at the gender identity question. They were not entirely satisfied with this response, and as such, this presented them with some difficulty when responding. Finally another trans respondent (non-binary) explained the gender identity question gave them an 'opt out' as the open text box meant they didn't need to try and make themselves fit in a predefined category. This respondent did not provide an answer to the binary sex question, electing to only answer the non-binary gender identity question. Therefore, the inclusion of a gender identity question meant that some information was collected from this individual rather than none at all.

It should be noted that some trans respondents who reported finding the gender identity easy to answer were thinking about the gender identity question in isolation, rather than in combination with the binary sex question. Their comments showed a preference for the gender identity question to be asked in isolation, rather than in combination binary sex. Therefore, positive feedback about the gender identity question does not infer that both sex and gender identity questions should be included. As previously discussed, having a sex question followed by a question on gender identity reinforced the idea that the binary sex question was asking about biological sex or sex assigned at birth rather than self-identified sex. This information was considered to be sensitive to some of the trans community interviewed.

### 3.3 Distinction between sex and gender identity

Respondents varied as to whether they thought there was a distinction between 'sex' and 'gender identity'. Some respondents understood gender identity to be a separate concept to 'sex', and therefore understood the sex question and the gender identity question to be distinct. However, some respondents did not think there was any distinction between the two concepts.

One such respondent interpreted the sex and gender identity questions to be asking the same question, and indicated a lack of understanding of the meaning of the gender identity question. Whilst the respondent was comfortable answering both the binary sex question and the gender identity question, they explained that either a sex question or a gender identity question was all that was needed, as they did not see 'sex' and 'gender identity' as separate concepts.

This view was shared by another respondent, who had to read the gender identity question twice before being able to answer; this hesitation was caused by confusion at what they considered to be a repeat of the binary sex question.

A further respondent, also from the general population, felt they understood the distinction between sex and gender identity, but expressed confusion at what would constitute 'in another way' in relation to one's gender identity. Despite this, the respondent too said that they would feel comfortable answering both the sex and gender identity questions and was able to answer appropriately.

Whilst these respondents struggled to make a distinction between the two terms, it is important to note that this confusion led to no negative impact on data collected at the gender identity question. All respondents were able to select an appropriate answer with most being completely satisfied with their responses. Therefore, in the cognitive interviewing at least, any lack of understanding about the distinction between sex and gender identity did not have any impact the responses given to the gender identity question. However, as previously noted, two trans respondents did refuse to answer the binary sex question as they understood sex to mean 'biological sex.' It is possible this understanding was reinforced by the inclusion of a gender identity question.

### 3.4 Concerns on confidentiality

One concern raised about the binary sex and gender identity question combination was about confidentiality. A respondent from the general population felt this question could be sensitive for some people who *'ticked the opposite boxes'* for sex and gender identity. This was a view mirrored by respondents of the trans community, one of whom explained that, whilst they felt comfortable answering the binary sex and gender identity question combination, they said *'I know my family is not going to see this form'*. They went on to explain that providing an answer that highlighted a difference between one's 'sex' and 'gender identity' might be difficult for young respondents who still live with their families, as they may be keeping such a difference private from other members of their households.

### 3.5 Concerns response options and how data will be reported

Another concern amongst respondents from the trans community was centred on having to write in 'in another way' at the gender identity question. As previously mentioned, whilst some respondents felt it was important to allow people to self-identify, others had concerns about how identities that had been written in would be analysed.

One trans respondent, who identified as non-binary, explained that, whilst they would feel moderately comfortable themselves answering the non-binary gender identity question, they were 'wary' of writing in 'other' as a response option. They expressed concern that the 'statistics' would become *n%* 'Man', *n%* 'Woman' and *n%* 'Other' regardless of what they wrote. They worried that everyone who identified as agender or non-binary or 'anything else' would be 'lumped' into one box. This concern arose specifically in relation to the non-binary gender identity question, as the binary sex question did not have an 'other' write-in option.

This view was shared by another respondent, who identified as a transgender man. They asserted that how 'other' in forms is analysed is a general concern for them. They queried whether 'other' responses got stored and saved in the exact way they



were written in, or whether they were grouped together into categories and changed without the original respondent's knowledge.

Therefore a suggestion for improving the question was to add more answer options so it was clearer how gender information would be stored and reported. Suggested additional options included; prefer not to say, non-binary, gender fluid, gender queer and agender, as well as trans man and trans woman.

One trans respondent felt to have a box with a label was important, as it was a recognition that other identities outside the binary exist. Having a tick box validated their existence and way of being in the world. This view was shared by another non-binary respondent, who added that if non-binary was added as a response option:

*'... the census isn't making a prejudgement with regards to that not being as important to historic traditions... if people see the phrase printed with its own box, that's an affirming thing in and of itself.'*

As discussed in 10.4.2 one respondent, who identified as non-binary and answered 'in another way: non-binary' added that it was '*slightly frustrating*' that they had to identify as 'in another way'. They were not entirely satisfied with this response, and as such, this presented them with some difficulty when responding.

Other respondents recommended that a larger open text box should be provided, to allow for more accurate self-identification when people chose to identify their gender identity in 'another way'. One respondent explained there was not enough space in the box to write how they typically identified themselves, which was 'non-binary trans feminine'.

Contrary to the above two points, some trans respondents felt that it would be more appropriate and inclusive to remove all tick boxes and have just an open text field for *all* respondents to write in their gender identity. For one respondent, this would reduce the concern over written responses being grouped together as 'other', as well as removing the risk of marginalising people through having boxes for the binary, but not having appropriate boxes for others.

### 3.6 Other findings on the sex and gender identity questions

A few suggestions were made regarding revisions that could be implemented to improve the pair of questions. These suggestions largely came from respondents from the trans community, though some members of the general population also shared these views. These suggestions generally related to the non-binary gender identity question, as the respondents who made them clearly expressed understanding the binary sex question to be asking about biological sex.

Some respondents suggested the gender identity question could benefit from rewording. These suggestions included removing the word 'identity', to instead ask respondents 'Which of the following *is* your gender?' They explained 'gender identity' felt like:

*'...putting it as a cover or wash on top of your actual sex, and I don't like that concept because I feel that gender is a social construct... you can define your gender...'*

Another respondent explained that asking people how they 'think' about their gender identity make the question appear more trivial i.e. makes their way of seeing

themselves flippant, invalidated and fantasy like. They added they do not *think* they are non-binary, they *know* they are non-binary. They would instead reword the gender identity question to ask 'Which of the following describes your gender identity?' Another non-binary respondent suggested, instead, 'What is your gender identity?'

Finally, some respondents expressed a wish to make the non-binary gender identity question compulsory, in order to improve the pair of questions. There was a concern from one respondent, who identified as a transgender man, that because the binary sex question was compulsory and the gender identity question was voluntary, this implied some sort of ranking - that data collected from the sex question was of greater importance than that collected from the gender identity question. Another respondent from the trans community suggested that the binary sex question should be made voluntary, and gender identity question compulsory, instead.

#### 4. Findings on the non-binary sex question

The third part of testing involved showing respondents a non-binary sex question only. This question asked 'What is your sex?' and had three answer options to choose from; male, female or other, with an open text box for respondents to write in how they described their sex (see Figure C1 to see the version tested). The aim of the question was to collect data on a respondent's self-identified sex. This question was designed to be an alternative to the previous pair of questions on binary sex and gender identity. Testing explored, amongst other things, the following key areas:

- Was a non-binary sex question acceptable to respondents, including both general population respondents and trans and non-binary respondents?
- Was the non-binary sex question preferable to the alternative pair of questions on binary sex combined with the gender identity? Why or why not?
- Were respondents able to choose an answer category to the non-binary sex question?

Findings on each of these areas are discussed below.

##### 4.1 Acceptability of the non-binary sex question

All respondents from the general population reported finding the non-binary sex question acceptable. However, this was not a view shared by all respondents from the trans sample. Some trans respondents found the non-binary sex question unacceptable and this led to some refusals to answer by this group.

Some respondents from the trans community understood the non-binary sex question to only be asking about their *biological* sex or *sex assigned at birth*. Asking questions on biological sex (or appearing to do so) made some trans respondents uncomfortable, which is why concerns about this question arose. The question intends to measure self-identified sex but this was not always how it was interpreted. It is likely that the respondents who understood the question to be about biological sex held this interpretation because of both:

- their prior understanding of the word sex; *and*

- the order in which the questions were tested. All respondents were exposed to the question on gender identity prior to seeing the alternative non-binary sex question. Therefore exposure to the gender identity question could have reinforced the sex/ gender distinction.

One respondent, who identified as non-binary, explained that their objection to the non-binary sex question was the use of the word 'sex' rather than 'gender':

*'...still has the word sex... It doesn't sit well with us... because sex and gender are separate things.'*

Whilst this respondent answered the question 'other: non-binary', they explained they felt their answer was incorrect, as they did not think of non-binary as a biological sex. This was a view shared by another non-binary respondent, who said:

*'It's asking sex, but it's trying to ask about gender identity, so it has got language wrong in the question...'*

Therefore, the objection to the non-binary sex question was being made on semantic grounds by some trans respondents. Their objection to the non-binary sex question was based on the fact the question was using the word 'sex' but was actually aiming to capture gender and that they would rather report their gender, not their biological sex. As previously stated the aim of the non-binary sex question was not to capture biological sex or assigned sex at birth but to measure self-identified sex.

#### 4.2 Respondents ability to select an answer

Respondents from the general population were all able to answer the non-binary sex question accurately. All general population respondents gave the same answer to the non-binary sex question as they had to the binary sex question. Many general population respondents were able to empathise with the need for an 'other' option in relation to the sex question, even if they were not utilising it themselves. Some members of the general population did lack an understanding of what constituted an 'other' sex, but this led to no impact on data quality, as these respondents were still able to answer the question correctly.

Trans respondents varied as to whether they were able to answer the non-binary sex question, with some respondents from the trans sample declining to answer. This was due to their understanding the term 'sex' to be asking for biological sex only; culminating in their feeling uncomfortable. In addition some of the trans respondents who declined to answer felt the non-binary question was unclear in what it was asking. For example, one trans respondent did not answer as they thought the question had confused the concepts of sex and gender. This respondent explained that their issue was with the use of the term 'sex'. They added that they thought the question should be asking about gender. This point was reiterated by another trans respondent, who identified as non-binary, who said:

*'You have to split sex and gender identity out.'*

The above respondents also described how the term 'sex' inferred biological sex yet the third open option inferred gender identity. To this group the question appeared muddled in what it was asking. However, as previously noted the non-binary sex question was only asked after the gender identity question during the cognitive

interviews, and therefore this sex/ gender distinction could have been reinforced by test conditions.

Trans respondents used varying answer strategies when responding to the non-binary sex question. Some gave the same answer they had given to the binary sex question, some gave the answer they had given at the gender identity question and some declined to answer.

Understanding of terminology had a role to play in the responses respondents gave. As previously mentioned, some respondents from the trans community disliked the non-binary sex question due to their pre-existing understanding of 'sex' as biological and distinct from 'gender identity' - a commonly used distinction amongst the LGBTI community<sup>8</sup>. Some of these respondents declined to answer the question. In contrast other respondents preferred the non-binary sex question compared to the binary sex question, and were happy to use this formulation as a way of indicating current 'self-identified sex' rather than their sex at birth. A number of non-binary respondents answered 'non-binary' making use of the 'other' open text box. For example, one respondent, who answered 'other: non-binary', explained they found it easier to answer than the binary sex question. They thought the difference between 'sex' and 'gender identity' was not an important '*day-to-day issue*', and were content with the non-binary sex question alone.

#### 4.3 Respondent preference between versions

Respondents varied in terms of which version of the sex and gender identity questions they preferred:

- Some preferred the binary sex question and the gender identity question combination (version one);
- Some preferred the non-binary sex only (version two); and
- Some wanted to combine different aspects of the two approaches, for example by wanting a non-binary sex question and a gender identity question or just a gender identity question.

As no consensus was reached on which version of questions was better (e.g. the binary sex and gender combination or the non-binary sex question) it is important to look at the advantages and disadvantages of each approach from the respondents' perspective. These advantages and disadvantages are summarised in Table C2 overleaf.

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<sup>8</sup> <http://www.stonewall.org.uk/help-advice/glossary-terms>

Table C2: Respondents views on the advantages/ disadvantages of each version

	Version 1 (Binary sex and gender identity combination)	Version 2 (Non-binary sex only)
<b>Advantages</b>	<p>Gives respondents the opportunity to self-identify at gender identity question using the 'other' option.</p> <p>Recognises there is a distinction between sex and gender identity.</p> <p>Positive comments about gender identity question: some respondents expressed a preference for asking about <i>just gender</i> rather than sex.</p>	<p>Recognises that sex is not binary- gives respondents the opportunity to self-identify using the 'other' option.</p> <p>Makes it more apparent that self-identified sex is being asked.</p> <p>Inclusive of intersex people</p> <p>Easier for respondents who see no distinction between sex and gender identity.</p> <p>Fewer questions may lead to less respondent burden.</p>
<b>Disadvantages</b>	<p>Objections made to the 'sex' question. Trans respondents may not want to reveal biological sex, and infer this is what the sex question is asking. This understanding could be reinforced by asking about sex and gender identity separately.</p> <p>Cannot self-identify at sex question (problematic for non-binary groups).</p> <p>Sex question excludes intersex people.</p> <p>Confusing for groups who see no distinction between sex and gender. Could be misunderstood to be asking the same question twice.</p>	<p>Objections made to the term 'sex'. Trans respondents may not want to reveal biological sex, and infer this is what the sex question is asking.</p> <p>Does not recognise the distinction between sex and gender identity. Some trans respondents felt that the question was confusing as it uses the term 'sex' but infers 'gender identity.' Felt the question should refer to 'gender' instead.</p> <p>Understood as collecting less data, by those who understood sex and gender to be different.</p>

Some respondents preferred the separate binary sex question and gender identity question, as they felt these collected more information than the non-binary sex alternative alone. This view stemmed from an understanding that 'sex' and 'gender identity' are separate concepts and therefore should be asked about separately. It should be noted that this group understood the term sex to refer to biological sex or

assigned sex at birth. This was not the intended definition of the sex question using current NRS measurement objectives.

Some respondents, from both the general population and the trans community, expressed a preference for the non-binary sex question for a few key reasons. The first was that they felt the binary sex and gender identity question combination 'overlapped'- these respondents did not understand 'sex' and 'gender identity' to be separate concepts, and preferred the non-binary sex question as a more inclusive combination of these two questions. Some respondents from the general population preferred the non-binary sex question, as they felt sex and gender were the same thing and found two questions on the subject repetitive.

Another reason respondents stated for preferring the non-binary sex question was that it was more inclusive for people who identified as neither male nor female, such as those who are intersex. One respondent from the general population explained they preferred the non-binary sex question as:

*'... you are catering for everyone' as 'other' could include 'someone going through a gender change'.*

When asked for their preference, some respondents select neither and would have instead preferred a combination of the two approaches. For example, these respondents stated a preference for the non-binary sex question over the binary sex question but that they would, in fact, opt to use it in combination with gender identity question. This view came from the understanding that 'what is your sex?' was asking about *biological* sex, and that, whilst the non-binary sex question was more inclusive for people who identified as intersex, it was still necessary to have a question about gender identity, as this is separate from a person's sex. This group also suggested that, as sex is the question perceived most sensitive, that this could be omitted and only a gender identity question could be asked.

## 5. Findings on a trans status question

The trans status question tested was 'Do you consider yourself to be transgender, or have a transgender history?' with a set of three response options: 'Yes' 'No' or 'Prefer not to say' (as shown in Figure C1). The aim of the trans status question was to collect data on respondent trans status or history. Testing explored, amongst other things, the following key areas:

- Was this question acceptable to both general population and trans respondents? Why/why not?
- Were respondents able to choose an appropriate answer?
- Whether respondents understood the terminology used.

Comments on confidentiality were also raised during the cognitive interviews. All these areas are explored further in the following sections.



## 5.1 Acceptability

The question was found to be universally accepted by all respondents who took part in the cognitive interviews, across both the general population and trans group. One respondent, who identified as a transgender man, said they would feel comfortable answering this in the census, and explained that they felt it was very important data to collect. They added:

*“... I like the trans question. I think that’s a good question. That’s well written, actually”*

Another respondent, who identified as non-binary, believed members of the trans community would be excited about being able to answer the question and identify themselves in the census.

Other respondents found the question to be acceptable due to the ‘prefer not to say’ option available. These respondents added that whilst this was beneficial, ‘prefer not to say’ could imply that a person was transgender, or had a transgender history, but didn’t wish to, or felt unable to, disclose this information on a form. One respondent suggested making the question voluntary and keeping the ‘prefer not to say’ option as well.

## 5.2 Respondents ability to select an answer

All respondents were able to choose an answer, with most finding the question clear in what it was asking and being fully satisfied that their answer was correct.

There was some confusion, however, for a few non-binary respondents, who did not routinely describe themselves as ‘transgender’. This issue was highlighted by a trans respondent, who explained *‘In terms of non-binary people, I’m not sure it’s a particularly useful question’*, adding that this group will be mixed in how they respond. Despite this, some non-binary respondents were able to recognise that the question was relevant to their experience, and answered ‘yes’ to reflect this. One non-binary respondent, however, was unsure what transgender meant in this context and did not consider themselves within the trans community; for these reasons, they answered ‘no’.

One respondent explained that whilst the term ‘transgender’ was not a typical term they would use to describe themselves, they didn’t have any issue with ‘non-binary falling under the transgender banner’, and was satisfied with both the question and their ability to answer it.

Another non-binary respondent felt the question was unclear as it was asking two separate things and that the question should be split out into two questions, one asking individuals if they identify as transgender currently, and the other asking about whether a person has a transgender history. They also added that ‘transgender history’ could be interpreted differently by different people, and, as such, should have a description to provide clarification.

### 5.3 Understanding and terminology

Respondents varied in terms of whether or not they were familiar with the terminology used in the question. Some respondents expressed a knowledge and understanding of the term 'transgender'. However, others, largely from the general population group, felt unsure about the term. Some from both the general population and trans community did not understand the term 'transgender history'. However, familiarity had no impact on their ability to recognise that this was something they had or had not experienced, meaning this confusion did not have a negative impact on data quality. All respondents who took part in the question testing were able to give an answer to this question and provide a suitable rationale for their response.

Some respondents from the trans community suggested that whilst the term 'transgender' was acceptable, it was not a term certain groups of people, such as those who identify as non-binary, associated with themselves. They suggested using 'trans' instead, as this was a more widely understood and accepted umbrella term. One non-binary respondent explained that the term 'transgender' had "...*historical baggage*" and added that 'trans' would be more acceptable, as it is a broader term that is recognised as more inclusive.

### 5.4 Comments on confidentiality

A few respondents, both from the general population and trans community, expressed a concern about confidentiality in relation to this question. There was a worry that young trans people may feel unable to answer the question if they still lived at home with their families, and that this would be an issue as these young people need to be identified as they have specific service needs. One non-binary respondent suggested that it should be advertised through LGBTI platforms how people in these situations could request their own forms or access codes for the online survey, so they are able to identify themselves in a safe and confidential manner.

One respondent from the general population expressed concern that the question was too personal, and wasn't sure why NRS would need to collect information about a person's transgender status or history through the census. No respondents from the trans community mirrored this view.



## Annex D: Quantitative testing for the sex and trans status questions

In autumn 2017 NRS commissioned ScotCen Social Research to conduct cognitive and quantitative testing of selected questions for potential inclusion in Scotland's Census 2021. Information about this testing can be found in the [2017 Cognitive and Quantitative Testing Report](#) (PDF).

### 1. Question tested and aims of testing

Following cognitive testing, a non-binary sex question followed by a trans status question were taken forward to quantitative testing. In the trans status question, the term 'transgender' was changed to 'trans' based on comments provided during the cognitive testing and from advice from key stakeholders.

Figure D1: Paper and online questions for non-binary sex

Non-binary sex 2017 test (paper)	
<p><b>10</b></p> <p><b>What is your sex?</b></p> <p>◆ Tick <b>one</b> box only</p> <p><input type="checkbox"/> Female</p> <p><input type="checkbox"/> Male</p> <p><input type="checkbox"/> Other, please write in</p> <p><input type="text"/></p>	
Non-binary sex 2017 test (web)	
<p>Q10. <b>What is your sex?</b></p> <p>▪ Select <b>one</b> only</p> <p><input checked="" type="radio"/> Female</p> <p><input type="radio"/> Male</p> <p><input type="radio"/> Other, please enter:</p> <p><input type="text"/></p>	

Figure D2: Paper and online questions for trans status

Trans status 2017 test (paper)	
<b>11</b>	<p><b>Do you consider yourself to be trans, or have a trans history?</b></p> <p>◆ Tick one box only</p> <p> <input type="checkbox"/> Yes                     <input type="checkbox"/> No                     <input type="checkbox"/> Prefer not to say                 </p>
Trans status 2017 test (online)	
<p><b>Q11. Do you consider yourself to be trans, or have a trans history?</b></p> <p>▪ Select one only</p> <p> <input checked="" type="radio"/> Yes  <input type="radio"/> No  <input type="radio"/> Prefer not to say                 </p>	

The aims of testing these questions were:

- To analyse the distribution of responses, including similarities and differences in distribution by mode and age;
- To analyse item non-response rates by mode as a measure of data quality and acceptability;
- To analyse uptake of 'prefer not to say' for the question on trans status; and
- To analyse invalid responses as a measure of data quality.

## 2. Results

### 2.1 Non-binary sex distribution<sup>9</sup>

In total, approximately 97% of respondents provided a valid response to the non-binary sex question. Three % provided an invalid response, the majority of which were item non-response (2.5% compared with <1% of multi-ticks - that is, where a respondent had selected more than one valid answer to a question. Multi-ticks were only possible on the paper questionnaire).

<sup>9</sup> All figures in this Annex have been rounded to the nearest whole number.

*Table D1: Non-binary sex distribution, 2017 (weighted)*

	<b>Total</b>	<b>%</b>
<b>Female</b>	733	50
<b>Male</b>	678	47
<b>Other</b>	0	0
<b>Invalid</b>	42	3
<b>Total responses</b>	1,454	100

Valid responses were split evenly between 'female' and 'male' (52% and 48% of total valid responses, respectively).

*Table D2: Distribution of responses to the non-binary sex question (valid weighted responses only)*

	<b>Total</b>	<b>%</b>
<b>Female</b>	733	52
<b>Male</b>	678	48
<b>Other</b>	0	0
<b>Total valid responses</b>	1,412	100

One respondent responded 'other' to the non-binary sex question. Upon review it was apparent that 'other' was chosen by the respondent as a means of refusing to answer the question and it wasn't clear how they self-identified, though it should be noted this case was retained as a valid response.

## 2.2 Non-binary sex by mode

Valid responses among females and males did not vary significantly by mode. Half of those who identified as female completed the questionnaire online and half on paper. The same was true of respondents who identified as male. The one respondent who ticked 'other' completed the questionnaire online.

## 2.3 Non-binary sex by age

All age groups responded to the question with approximately half of the respondents responding "female" and half responding "male". The small numbers of invalid

responses were distributed evenly across all age groups. The respondent who responded 'other' to the question was aged over 64.

## 2.4 Trans status distribution

In total, around 94% of respondents provided a valid response to the trans status question. Of the 5% that provided an invalid response, most were due to item non-response (4.8%, compared with <1% of respondents ticking multiple responses).

*Table D3: Trans status distribution, 2017 (weighted)*

	<b>Total</b>	<b>%</b>
<b>Yes</b>	6	0
<b>No</b>	1,361	94
<b>Prefer not to say</b>	15	1
<b>Invalid</b>	72	5
<b>Total responses</b>	1,454	100

Among valid responses, most respondents (98%) responded 'no' meaning they did not consider themselves to be trans or have a trans history. The 'prefer not to answer' option was selected by 1% of respondents and less than 1% stated that they did consider themselves to be trans or to have a trans history.

*Table D4: Trans status distribution of valid responses, 2017 (weighted)*

	<b>Total</b>	<b>%</b>
<b>Yes</b>	6	0
<b>No</b>	1,361	98
<b>Prefer not to say</b>	15	1
<b>Total valid responses</b>	1,382	100

## 2.5 Trans status by mode

Most respondents answered 'no' to the trans status question, and among this group no difference by mode was observed. Too few people stated 'yes' or 'prefer not to say' for any significant differences by mode to be detected. Considering the counts, five of the six respondents who identified as trans completed the questionnaire

online. Half of the small number of respondents who chose 'prefer not to say' completed the questionnaire online and half on paper.

## 2.6 Trans status by age

Since most respondents stated 'no' they did not consider themselves to be trans or have a trans history, the distribution of responses by age largely follows the age profile of the sample.

Again, too few respondents answered 'yes' or 'prefer not to answer' to pick up any significant patterns by age. In describing the weighted counts we can say that five of the six respondents who identified as trans were under 55. The small number of people who stated that they would 'prefer not to answer' fell across all age groups.

## 2.7 Non-binary sex by trans status

Given that the vast majority of respondents answered 'no' to the question on trans status it is not surprising that most of those identifying as 'female' or 'male' stated 'no' as their response to the trans question. Some self-identifying females and males did answer 'yes' or 'prefer not to say' at the trans question but the numbers here were very small.

The one respondent who chose 'other' at the non-binary sex question chose the 'prefer not to say' option for the trans status question.

## 2.8 Invalid responses to non-binary sex

### 2.8.1 All types of invalid response

If a respondent did not answer any questions beyond the marital status question their questionnaire was classified as 'partially completed.' At all questions beyond marital status question, a partial completion was treated as a questionnaire drop out and distinct from item non-response. We know from device type analysis in the methodology report that for most partially completed questionnaires respondents dropped out before the non-binary sex question.<sup>10</sup>

An invalid response was given by 3% of the respondents, most of which were item non-response with a very small number the result of multi-ticks - that is, where a respondent had selected more than one valid response to the question. Multi-tick responses were only possible in the paper questionnaire.

Most non-response at the non-binary sex question (around 2% of total responses) was due to questionnaire drop-out i.e. partially completed questionnaires.

For fully completed questionnaires, less than 1% of responses were invalid.

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<sup>10</sup> Note that device type analysis includes all attempts to complete a questionnaire online including cases that have not been given a weight and have not been included in the main analysis.

### 2.8.2 All types of invalid response by mode

Since only 3% of responses were invalid there were too few cases to allow for robust comparisons by mode. Most instances of non-response were on the online version of the questionnaire and among partial completions. When looking at item non-response among fully completed questionnaires only, most instances of non-response were on paper. It should be noted that findings by mode have not been tested for significance as the very small sample sizes mean it's very unlikely any significant differences would be detected.

All multi-tick responses were the result of paper completions, as this type of invalid was only possible on the paper questionnaire.

*Table D5: Invalid non-binary sex by mode (unweighted)*

	Mode		
	Number of responses - Online	Number of responses - Paper	Total
Item non response – full completions	1	5	6
Item non-response – partial completions	30	0	30
Invalid multi-tick – paper only, single tick questions	0	3	3
Invalid combination			
Routing error			
<b>Total invalid responses</b>	31	8	39
Not applicable			
Total valid responses	614	801	1,415
<b>Total responses</b>	645	809	1,454

### 2.8.3 All types of invalid responses to non-binary sex by age

Again, the proportion of invalid responses to the non-binary sex question was too small to detect any meaningful patterns by age. The counts for this analysis show that most instances of non-response to the non-binary sex question were also non-response at the question on age, due to being partially completed questionnaires.

### 2.8.4 Non-binary sex - non-response only

Given that almost all invalid responses were item non-response, the findings discussed above in relation to invalid responses hold true for item non-response only. The key finding from item non-response analysis at the non-binary sex question is that most was attributable to partially completed questionnaires, which mainly saw

respondents drop out in advance of the question on sex. Consequently, item non-response from full completions was low.

## 2.9 Invalid responses to trans status

### 2.9.1 All types of invalid response

In total, around 6% of responses to the trans status question were invalid. Almost all of the invalid responses were a result of item non-response (5.9%), and less than 1% were the result of invalid multi-ticks- that is, where a respondent had selected more than one valid response to the question. Multi-tick responses were only possible in the paper questionnaire.

The counts for this analysis show that around half the instances of non-response to the trans status question were the result of partially completed questionnaires, most of which had dropped out before the non-binary and trans status questions. This indicates that some of the non-response at the trans status question is attributable to questionnaire drop out.

However, 56 instances of item-non response were attributable to fully completed questionnaires - the majority of which were the result of the paper survey. This could indicate a problem with respondents understanding the question, or an issue with acceptability.

### 2.9.2 All types of invalid responses by mode

Looking at the count data, it can be seen that the majority of instances of non-response for fully completed questionnaires were paper completions. However, this may reflect acceptability by age as most paper forms were completed by the 55 and over age group.

All instances of invalid response by multi-tick were paper completions, as this type of invalid response was not possible in the online questionnaire.

*Table D6: Invalid trans status by mode (unweighted counts)*

	Mode		
	Number of responses - Online	Number of responses - Paper	Total
Item non response – full completions	3	53	56
Item non-response – partial completions	30	0	30
Invalid multi-tick – paper only, single tick questions	0	2	2
Invalid combination			
Routing error			
<b>Total invalid responses</b>	33	55	88
Not applicable			
Total valid responses	612	754	1,366
<b>Total responses</b>	645	809	1,454

### 2.9.3 All types of invalid responses by age

Looking at count data It can be seen that around half (30 cases) of those who did not answer the trans question were the result of partially complete questionnaires, and also did not answer the question on age. Interestingly, almost all of the remaining instances of item non-response (around 48 cases) came from those aged 55 or over.



*Table D7: Invalid trans status by age (unweighted counts)*

	Age			Total valid responses	Total invalid responses	Total responses
	16-34	35-54	55+			
Item non response – full completions	0	6	48	54	2	56
Item non-response – partial completions	1	0	0	1	29	30
Invalid multi-tick – paper only, single tick questions	0	1	1	2	0	2
Invalid combination						
Routing error						
<b>Total invalid responses</b>	1	7	49	57	31	88
Not applicable						
Total valid responses	147	371	844	1,362	4	1,366
<b>Total responses</b>	148	378	893	1,419	35	1,454

#### 2.9.4 Trans status - non-response only

Given that almost all invalid responses were item non-response, the findings discussed above in relation to mode, age and questionnaire completion status apply when examining item non-response.

As a question on trans status has not been asked in previous iterations of Scotland's census, it is not possible to conduct a comparison of item non-response in 2017 testing with previous census results.

#### 2.10 Non-response to non-binary sex by non-response to trans status

The majority of the sample (94%) provided a valid response to both the non-binary sex question and the question on trans status. Of those that didn't, 53 respondents provided a valid response to the non-binary sex question but chose not to answer the trans status question. Instances of item non-response at non-binary sex in combination with item non-response at trans status were almost entirely attributable to partially completed questionnaires, indicating questionnaire drop out as the reason behind both questions together being left unanswered.

### 2.11 Non-binary sex multi-ticks

There were only three instances of multi-ticks on paper questionnaires. In all three instances the respondents selected both the 'female' and 'male' options. It should be noted that these same three respondents also answered 'no' to the question on trans status.

### 2.12 Feedback to non-binary sex question

The questionnaire was split into four sections and, at the end of each of the four sections, respondents were asked to indicate if they have found any questions in the section difficult to answer, and to provide verbatim feedback on their difficulties in an open text box.

When asked 'did you find any of the following questions difficult to answer: Q10. Sex' less than 1% of respondents stated 'yes' they did find the non-binary sex difficult to answer.

Only four people stated they had difficulty answering the non-binary sex question. However, three of the four were able to provide a valid response to the question.

Only two written responses were provided at the feedback question on non-binary response. One respondent's response reflected an ideology that did not accept genders outside of 'female' and male'. The other respondent stated that they were unsure how the questions on sex, trans status and sexual orientation were relevant to planning services for Scotland.

### 2.13 Feedback on the trans status question

In total, around 30 respondents said they found the trans status question difficult to answer, but most did provide a valid response to the question. Some of those that found it difficult to answer and provided feedback expressed concerns about understanding of the term 'trans', some didn't understand the term themselves, while others understood what it meant but were concerned that others might not.

Other respondents expressed the view that they found the question intrusive, whilst some did not understand why this question was relevant to the census.

One respondent, who reported finding the trans status question difficult to answer, expressed the view that the questions on gender felt 'restrictive' and stated they would feel better about answering them if there was more information available about what would be done with the data.

## Annex E: Further cognitive testing

### 1. Background and Methodology

Cognitive testing of the sex and trans status questions with the trans and non-binary community was undertaken with the aim of understanding whether changes to the wording, and including guidance in the question stem, improved the ease of responding for this community. In parallel, a small scale survey of the general population was undertaken to ensure any changes to the questions did not negatively impact on the general population's ability to answer the questions with ease.

### 1.1 Cognitive testing

#### 1.1.1 Recruitment of respondents

Cognitive interviews are qualitative in nature and as such test samples are chosen with a specific purpose and, where possible, designed to reflect the range and diversity of the population of interest, rather than to be statistically representative.

To recruit interviewees a survey was conducted through Survey Monkey. A link to this survey along with some information about the project was shared with the Equality Network Scotland and circulated by the Scottish Trans Alliance through their Facebook and Twitter feed.

A total of 11 interviews were conducted in Edinburgh and Glasgow. Due to the content of the questions, interviewees were recruited to ensure diversity in terms of how they identify and their age. Table E1 shows the composition of the final sample of interview respondents.

*Table E1: Sample composition of cognitive testing*

	Age		
	18 – 25	25 – 34	35 – 64
Non-binary	3		2
Trans man	1	2	
Trans woman	1		2
<b>Total interviewed: 11</b>			

#### 1.1.2 Interview process

All the cognitive interviews were conducted with semi-structured interview protocols. Face-to-face interviews were conducted in Edinburgh and Glasgow.

Interviewees were shown different versions of the two questions tested – sex and trans status – and were asked to answer all the questions before discussing them with the interviewer. The interviewer then used scripted probes which had been provided to ensure consistency between interviewers and to ensure all areas of interest were explored.

As cognitive interviews are qualitative in nature, interviewers also had the freedom to probe on aspects that they considered were unique to the respondent and to explore issues that had not been foreseen.

## 1.2 General population survey

A small scale online survey among the general population was undertaken in parallel to the cognitive testing interviews. The main aim of the survey was to ensure that any changes in questions did not have a negative impact on respondents' understanding and their ability to answer these questions.

In the online survey the respondents were asked to answer different versions of the questions on sex and trans status, and then provide their feedback on whether any of the questions were difficult to answer and which version they prefer, as well as any further comments they might have.

*Table E2: Sample composition of general population survey*

	Age		
	18 – 34	35 – 64	65+
Female		30	3
Male	10	6	
<b>Total valid responses: 49</b>			

The collected survey responses were combined and summarised to provide overall statistics of these responses. Any written free text responses were summarised into broad subject categories to form the overall key findings.

## 2. Sex Question

Three versions of the question on sex were tested, where version A (Figure E1) was the baseline question that was tested previously, version B (Figure E2) included guidance in the question stem, and version C (Figure E3) included guidance and different wording in the response option as an alternative to 'Other'.

Figure E1: Sex Question – version A

**A What is your sex?**

◆ Tick **one** box only

☐ Female

☐ Male

☐ Other, please write in

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Figure E2: Sex Question – version B

**B What is your sex?**

◆ Please select the option for how you identify.

◆ Tick **one** box only

☐ Female

☐ Male

☐ Other, please write in

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Figure E3: Sex Question – version C

**C What is your sex?**

◆ Please select the option for how you identify.

◆ Tick **one** box only

☐ Female

☐ Male

☐ Identify in another way, please write in

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## 2.1 Aims of cognitive testing for the sex question:

- Explore whether the changes to the inclusion of guidance on self-identification aided respondent understanding;
- Explore respondents' interpretation of the word 'sex' with and without additional guidance in the question stem;
- Explore whether respondents found the response option 'In another way' preferable to 'Other';
- Explore whether respondents would be comfortable answering the question on sex in the census about themselves; and
- Explore whether respondents would be comfortable answering the question on sex in the census on behalf of someone else in their household.

## 2.2 Key results of cognitive testing for the sex question:

- All respondents were able to answer all three versions of the question on sex that included the non-binary sex response options allowing for people to identify as intersex or non-binary.
- Overall, there was a strong support for the non-binary response options within the question on sex.
- During interviews the respondents indicated that the guidance in the question stem was not clear in versions two and three, and that it was difficult to decide how to interpret what the question was asking. Specifically, whether the question is asking about biological sex, gender identity or gender expression.
- Respondents suggested that additional guidance would be helpful, however, it is not essential to include that guidance in the question stem.
- Some respondents indicated that the version A was clearer because of its simplicity and as it is a commonly asked question they are familiar with.
- The majority of respondents felt that the terminology in version C of 'Identify in another way' (rather than 'Other') was more inclusive, however some said that that this made it a gender identity question.
- When shown the question on sex in isolation respondents interpreted the word 'sex' as biological sex. As a result, non-binary respondents interpreted the question asking about biological sex and did not respond as 'Other' as they assumed this option was for intersex.
- However, having seen the question on trans status later in the interview, respondents noted that they would have answered the sex question differently. Specifically, without seeing the trans status question some trans respondents were not sure how to answer the sex question and would probably chose 'Other' response option and write in, for example, 'Trans man/ Trans woman'. Thus, presenting the two question together provided better understanding by respondents and improved data quality.

## 2.3 Key results of survey testing:

Please note that the online survey included two versions of the Sex Question – version A (Figure E1) and version B (Figure E2).

- Some feedback indicated there are a small number of respondents who have the view that sex can only be binary, and commented that therefore the question should be binary. This is consistent with all the findings over the last 18 months;
- Majority of the respondents interpreted the word 'sex' in the version A of the question as biological sex. A few respondents commented that the use of word 'identify' in version B was not appropriate or misleading when asking about biological sex, as it implies gender identity rather than sex;

- Some respondents provided comments on their understanding of the differences between sex and gender (or gender identity) as separate concepts, and that the use of word 'identify' suggests that the question on sex is asking about gender;
- The vast majority of respondents found version A easy to answer. Nearly 30 per cent of respondents found version B difficult to answer; and
- The majority of respondents would be comfortable answering the question on behalf of themselves and on behalf of someone else in their household.

### 3. Trans Status question

Two versions of the trans status question were tested, where version A (Figure E4) was the baseline question that was tested previously, and version B (Figure E5) included guidance in the question stem.

Figure E4: Trans Status Question – version A

**A Do you consider yourself to be trans, or have a trans history?**

◆ This question is voluntary

◆ Tick **one** box only

☐ Yes    ☐ No

Figure E5: Trans Status Question – version B

**B Do you consider yourself to be trans, or have a trans history?**

◆ This question is voluntary

◆ Trans is a term used to describe people whose gender is not the same as the sex they were assigned at birth.

◆ Tick **one** box only

☐ Yes    ☐ No

#### 3.1 Aims of cognitive testing for the trans status question:

- Explore respondents' understanding of the question with and without guidance;
- Explore the acceptability of the definition of 'trans' included in the guidance;
- Explore whether including the guidance improved respondent understanding;
- Explore whether respondents noticed that the question was voluntary;
- Explore whether respondents would be comfortable answering the question on trans status in the census about themselves; and

- Explore whether respondents would be comfortable answering the question on trans status in the census on behalf of someone else in their household.

### 3.2 Key results of cognitive testing for the trans status question:

- Overall the trans status question received a positive response;
- The importance of including a definition of term 'trans' was noted by most respondents as not everyone – both in the general population as well as trans community - would necessarily be familiar with terminology;
- The definition of term 'trans' was found acceptable, clear and easy to understand;
- Trans respondents noted that including 'trans history' in the question stem was important, as some people who have had a trans history would not identify as trans now;
- All respondents were able to answer the question on trans status with ease on behalf of themselves;
- Respondents were comfortable answering on behalf of another member of their household if they had their permission to do this; and
- Respondents indicated that the question on trans status should be asked of everybody filling in the census regardless of age.

### 3.3 Key results of survey testing for the trans status question:

- While the general population did not necessarily agree with the concept of trans, they were able to understand and answer the trans status question;
- The majority of the respondents found the explanation of what is mean by the term 'trans' in version B useful, and commented that the explanation makes the question clearer;
- Over half (60%) of respondents preferred version B of the question on trans status; and
- The majority of respondents would be comfortable answering the question on trans status on behalf of someone else in their household.

## 4. Other considerations

The issues of privacy and confidentiality were brought up during the cognitive interviews in terms of the census being a household form. Trans and non-binary respondents highlighted that disclosing their answers to sex and trans status question to be very personal and that some people might not feel comfortable disclosing their answers within the household. The interviewers made respondents aware that when filling in census forms there will be the facility to request individual forms without the knowledge of anyone else in the household. Respondents were reassured that this would overcome some of the issues of privacy and confidentiality.