## Scotland's Census 2021

### Census Outputs Event March 2020





- Following the advice from the UK and Scottish Government to help delay the spread of Covid-19/Coronavirus, we have now postponed our public talks until June
- We are keen to get your feedback and have therefore decided to hold these events remotely





### What is the Census?

- Every 10 years since 1801 (except 1941)
- Responsibility of the Registrar General for Scotland (NRS Chief Executive)
- In short, it is a survey of everyone everywhere in Scotland
- It produces anonymised statistical estimates which offer a picture of the number of people and their characteristics (such as age, health, where and how we live, etc.)
- Legal requirement under the Census Act 1920
- Offers a level and range of detail not available from other surveys





### What is the Census?

- Content and operational aspects of Scotland's Census subject to Scottish Parliament approval
- Therefore separate but harmonised with other censuses in the UK
- It's a **huge exercise** e.g. currently estimating 3-4,000 'field force' required in 2021
- It's unique and we have one chance to get it right
- Our promise of anonymity and security is critically important
- The individual returns are kept closed for 100 years and then released





### Users of Census Data

- There are a wide variety of users:
  - Councils (e.g. education, transport, housing and equality monitoring)
  - Health Boards
  - Charity/third sector
  - Commercial/private sector
  - Government
  - Parliament
  - Media
  - Public







## How Census data is processed

Questions and Collection Instruments

Researches and creates the questions of interest on paper and online

(Paper)
Capture

Transforms responses into electronic data

Coding

Classifies data consistently into a suitable format

Data Processing

Process the data to produce a correct, complete and consistent dataset suitable for outputs

SDC and Outputs

Prepares and disseminates data for outputs in a user friendly and disclosure safe way



Statistical Quality
Assurance

For more information, refer to our **Statistical Methodology Presentation** 





### Statistical Disclosure Control

- Prevents the release of any confidential information about the individual, household or enterprise
- This involves:
  - Introducing sufficient ambiguity/uncertainty
  - Reducing level of detailed published statistics
  - Controlling access to data
- Techniques we're using:
  - Targeted Record Swapping
  - Cell Key Perturbation







## Outputs

- Disseminates results from the census
- Our new website will be the main platform for this
- Metadata will be incorporated into all outputs
- Plans:
  - Standard tables (less than 2011)
  - Flexible Table Builder
  - Topic Reports
  - Microdata and Origin Destination Data
  - Workplace and Daytime Data





### Harmonisation

- We work closely with other UK Census Agencies to harmonise where possible
- This involves:
  - The Office for National Statistics (ONS) in England and Wales
  - The Northern Ireland Statistics and Research Agency (NISRA) in Northern Ireland
- This maximises the ability to produce UK-wise Census data products









### Sessions

#### **Session 1: Updates**

- General updates from Census
- Updates from the SDC and Outputs team
- Updates on UK Harmonisation

#### **Session 2: Variables**

- What is a (derived) variable?
- What variables do users need from the 2021 Census?

#### Session 3: Outputs Release Schedule and Approach

- Review suitability of the release schedule
- Discuss the appropriateness of the two release approaches

## Survey



- To capture your feedback and suggestions we have set up a survey
- We will guide you through the questions throughout the presentation
- The survey will remain open for you to edit your response until the 15<sup>th</sup> of May (19:00 GMT) when the survey will close.
- You will firstly be directed to a page which looks like this:

Scotland's 2021 Census SDC and Outputs - Derived Variable and Outputs Schedule Survey

Thank you for your interest in Outputs for Scotland's 2021 Census.

Please take a few minutes to read the presentation slides before completing the survey. These will help guide you through this survey.



Press 'OK' to start!

## Survey



- Using your <u>survey</u> please answer the following:
  - Please provide details of your work or the type of organisation you belong to

This is to help understand who our users are





# Session 1 Updates





## Census Updates

- Draft Census Order was approved by the Scottish Parliament on the 4<sup>th</sup> of March and was implemented on the 12<sup>th</sup> of March
- This means the NRS are committed to delivering a set of questions and associated guidance to enable all of Scotland to access, understand and complete the Census. For more information <u>click</u> <u>here</u>
- Some questions have changed slightly since the previous Outputs and Questions stakeholder event in November 2018
- The published version of the Question set can be found <a href="here">here</a>. Since this was published, there have been minor wording changes to make the questions clearer, but response option remain the same
- These are summarised in the following slides.





# Census Updates Unchanged Questions

- Accommodation Type
- Self-contained accommodation
- Cars/Vans
- Sex
- Student Indicator
- Term-time Indicator
- Country of Birth
- Arrival to UK

- Address one year ago
- Unpaid Care
- General Health
- Long-Term Problem or Disability
- National Identity
- Industry
- Occupation
- Method of Travel





# Census Updates Changed Questions

- Relationship\* (online only):
  - Online version is not a matrix
- Central Heating
  - More tickbox options with no write in sections
- Tenure
  - New tickbox option for shared equity
- Landlord
  - Less tickbox options (grouped into 2 options only)
- Marital Status
  - Civil partnership no longer specifies for same-sex
- English Proficiency
  - Now a 4x4 matrix for a scale of Very Well to Not Very Well for all skills

(Understand, Speak, Read and Write)

- Gaelic and Scots Skills
  - Separate question from English Skills
- Main Language
  - Used to be asked as 'Language used at home'
  - Long-term Health Conditions
    - New option for full/partial loss of voice or difficulty speaking
- Religion
  - New tickbox option for Pagan and write in below for Muslim

# Census Updates Changed Questions (cont.)

#### Ethnic Group

 New tickboxes added for Roma and Showman/Showwoman. Text boxes added in for African, Caribbean and Black ethnicities

#### Qualifications

New options for Apprenticeships

#### Labour Market

 Less options for Activity Last Week and no date for Last Worked

#### Hours worked

Now tickboxes rather than write-ins

#### Address of Work or Study

Tickbox added to specify work or study

# Census Updates New Questions

#### Bedrooms:

 Asks how many bedrooms are in the Household

#### Trans Status/History

 Asks whether a person has a trans history or trans status

#### Sexual Orientation

 Asks the sexual orientation of a person

#### BSL User

Asks whether person knows how to use BSL or not

#### Passports Held

 Asks which passport(s) a person holds

#### Ex-Service Personnel/ Veterans

 Asks if a person has previously served either in the Regular or Reserve UK Armed Forces





## SDC and Outputs Updates

- Supplier for our outputs system (WingArc) confirmed with work ongoing
- Internal testing of our SDC measures on the prototype outputs system underway
- Working with our supplier (StormID) to create new website
- Updating and developing (derived) variables for tabular outputs





# SDC and Outputs Updates Internal Testing

- NRS testing a prototype version of Flexible Table Builder software (SuperWEB2)
- Testing focused on SDC measures applied during the table building stage
- As development continues, further testing will be undertaken to ensure that the table builder is accessible and intuitive





## **ONS Outputs Updates**

- Developing flexible table builder with Sensible Code Company
- Preparing for outputs Rehearsal
- Preparing specifications for derived variables
- Developing our products eg safeguarded household microdata sample
- Planning harmonisation assessment of variables
- Preparing material for NS accreditation
- User research and presentations at Census advisory groups and London community group event
- Developing stakeholder engagement strategy and comms plan
- Developing content for web pages and posters
- For more info visit the ONS's <u>website</u>





## NISRA Outputs Updates

- Developing flexible table builder using PC-AXIS via the Central Statistics Organisation (CSO)
- Preparing specifications for derived variables
- Developing classifications for 2021 outputs database
- Developing our products eg safeguarded household microdata sample
- Planning harmonisation assessment of variables
- Developing user research via a second online consultation and liaising with Demographic Statistics Advisory group
- Developing stakeholder engagement strategy and comms plan
- Developing geography options to replace old electoral ward boundaries
- For more info visit NISRA's website





# **Updates**Questions?

Email us on our **SDC and Outputs email address** 





## Session 2 Variables





## What is a (derived) variable?





### What is a variable?

- A variable in Scotland's 2021 Census is a particular characteristic about a person, household, family or communal establishment
- We want to develop variables to users needs and disseminate them on our outputs systems
- Progress on variables for 2021:
  - Currently updating relevant 2011 variables
  - Developing new 2021 variables
  - Harmonising with ONS and NISRA where possible





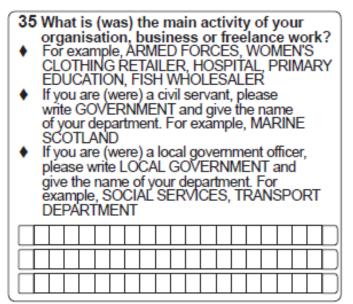
### Variables

- Variables can be created either by:
  - Grouping lots of information into smaller groups
  - Combining different elements of questions and/or other variables
  - Extracting certain elements of questions and/or variables
  - Calculating a number (e.g. year, age, distance)
- Variables can be developed using a combination of these processes!





# Grouping information Example: Industry





Group	Category	
1	Agriculture; Forestry; Fishing	
2	Mining and Quarrying	
3	Manufacturing	
4	Electricity, Gas, Steam and Air Conditioning Supply	
5	Water Supply; Sewage; Waste Management and Remediation activities	
:	<b>:</b>	
21	Activities of Extra-Territorial Organisations and Bodies	

Paper Questionnaire Layout v2.1

 This variable takes a person write-in and groups them into the Standard Industry Classification (SIC). For more info on this, <u>click</u> <u>here.</u>





## Combing information Example: Tenure and Landlord

H12	Does your household own or rent this accommodation?
•	Tick one box only
	Owns with a mortgage or loan   → go to H1

- Owns outright 

  go to H14
- Owns with shared equity (for example, LIFT, Help-to-Buy) → go to H14
- Rents (with or without housing benefit)
- Part owns and part rents (shared ownership)

  go to H14
- Lives here rent free



#### H13 Who is your landlord?

- Council (Local Authority) or Housing Association / Registered Social Landlord
- Private landlord or letting agency
- Other

Paper Questionnaire Layout v2.1



0	0-1	
Group	Category	
0-1	Owned	
0	Owns Outright	
1	Owns with a mortgage or loan	
2-3	Shared Ownership	
2	Shared ownership (Part owns and part rent)	
3	Shared Equity (e.g. LIFT or Help-to-Buy)	
4	Social Rented by Council (LA) or Housing Association/ Registered Social Landlord	
5-6	Private Rented	
5	Private landlord or letting agency	
6	Other	
7	Lives Rent Free	



## Combing information Example: Tenure and Landlord

Group



- Tick one box only
- Owns with a mortgage or loan p go to H14
- Owns outright p go to H14
- Owns with shared equity (for example, LIFT, Help-to-Buy) 

  → go to H14
- Rents (with or without housing benefit)
- Part owns and part rents (shared ownership) ⇒ go to H14
- Lives here rent free



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Other

Lives Rent Free



H13 Who is your landlord?



Private landlord or letting agency

Other

Paper Questionnaire Layout v2.1



0-1	Owned
0	Owns Outright
1	Owns with a mortgage or loan
2-3	Shared Ownership
2	Shared ownership (Part owns and part rent)
3	Shared Equity (e.g. LIFT or Help-to-Buy)
4	Social Rented by Council (LA) or Housing Association/ Registered Social Landlord
5-6	Private Rented

Private landlord or letting agency

Category



# Extracting information Example: Long-Term Illnesses

18 Do you have any of the following, w have lasted, or are expected to last, least 12 months?  ◆ Tick all that apply	hich at
Deafness or partial hearing loss	
☐ Bilindness or partial sight loss	
Full or partial loss of voice or difficulty sp     (a condition that requires you to use equ     to speak)	
Learning disability (a condition that you had since childhood that affects the way learn, understand information and comm	you
<ul> <li>Learning difficulty (a specific learning co that affects the way you learn and proce information)</li> </ul>	ndition ss
Developmental disorder (a condition that have had since childhood which affects cognitive, social and emotional skills and and language)	motor,
Physical disability (a condition that subst limits one or more basic physical activitie as walking, climbing stairs, lifting or carry	es such
Mental health condition (a condition that your emotional, physical and mental well	affects llbeing)
Long-term liness, disease or condition ( condition, not listed above, that you may for life which may be managed with trea medication)	/ have
Other condition, please write in:	

No condition

Group	Category	
0	Is not blind or partially vision impaired	
1	Is blind or partially vision impaired	



# Extracting information Example: Long-Term Illnesses

18 Do you have any of the following, which have lasted, or are expected to last, at least 12 months? Tick all that apply Deafness or partial hearing loss Bilindness or partial sight loss Full or partial loss of voice or difficulty speaking (a condition that requires you to use equipment to speak) **Learning disability** (a condition that you have had since childhood that affects the way you learn, understand information and communicate) **Learning difficulty** (a specific learning condition that affects the way you learn and process information) Developmental disorder (a condition that you have had since childhood which affects motor. cognitive, social and emotional skills and speech and language) Physical disability (a condition that substantially limits one or more basic physical activities such as walking, climbing stairs, lifting or carrying) Mental health condition (a condition that affects) your emotional, physical and mental wellbeing) Long-term lilness, disease or condition (a condition, not listed above, that you may have for life which may be managed with treatment or medication) Other condition, please write in:

No condition

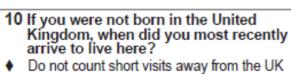
Group	Category
0	Is not blind or partially vision impaired
1	Is blind or partially vision impaired

Extracts whether or not person has ticked the 'Blindness or partial sight loss' (1 – Yes, 0 – No)



## Calculating a number Example: Age of Arrival to UK

2 What is your date of birth?		
Day Month Year		



Month Year

Paper Questionnaire Layout v2.1



Group	Category
0 – 115	0 – 115 Years

Calculates the ages of the person when they arrived in the UK by calculating the years between their date of birth and the date they arrived





# Variable Types

Туре	Description	Example
Indicator	Binary categories (Yes/No)	Blind or visually impaired long- term health condition indicator
Numbers	Calculated number	Age of arrival in the UK
Counts	Counts number of times something happens	Household size
Categories	Classifies into groups	Tenure and Landlord
Geographies	Census geography products (e.g. Output Area, Local Authority)	Output area of migrant





## Variable Populations

Variables about the	Example
Person	Deaf or visually impaired long-term health condition indicator
Household	Household size
Family	Family type
Communal Establishment	Communal Establishment Management and Type





### Variable Themes

- In 2011 we identified 6 themes in Census questions:
  - Housing
  - Population
  - Identity
  - Health
  - Education
  - Labour
- New questions haven't to be added into these themes





#### Variable Themes

- Housing, for example:
  - Central Heating
  - Accommodation Type
  - Tenure
- Population for example:
  - Sex
  - Age
  - Marital Status





#### Variable Themes

- Identity for example:
  - Ethnic Group
  - National Identity
  - Religion
- Health for example:
  - General Health
  - Long-term Health Condition Indicator
  - Unpaid Carers





#### Variable Themes

- Education for example:
  - Student indicator
  - Highest Level of Qualification
  - Method of travel to study
- Labour for example:
  - Economic Activity
  - Industry
  - Occupation





#### Variables Summary

- Variables are used in our outputs for users to extract the information they need from the Census
- They are created using a number of ways and can take a number of different formats on different subjects
- For simplicity, these have been categorised into 6 themes:
  - Housing
  - Population
  - Identity
  - Health
  - Education
  - Labour





### Survey Variable Themes



- Using your <u>survey</u> please answer the following:
  - 2. Which, if any, of the variables themes are most important to you/your organisation? (Please tick all that apply)

What information would be most useful for your work?





# What variables do users need from the 2021 Census?





#### 2011 Variables

- We have prioritised the 2011 variables that showed the strongest user need and are updating them to the new 2021 format
- This is possible with the introduction of the Flexible Table Builder which makes some 2011 variables redundant
- We want to ensure that users are getting consistent information from the 2011 to the 2021 Census where possible





### 2011 Variables Examples

- Slightly changed:
  - Occupancy Rating Difference between the number of bedrooms and the required number of bedrooms in a household
    - ➤ Now uses the new 'Bedrooms' question (previously used the number of 'Rooms'+2)
  - Religion Classifies religion group a person identifies with
    - ➤ Extra classification added for 'Pagan' since question includes tickbox
  - Family Type Classifies the type of family by whether it is a lone parent family or a couple family
    - ➤ Cannot specify 'same-sex' couple family due to changes in the marital status question and the relationship matrix. (i.e. they will be in the same group as 'opposite-sex')





#### Survey 2011 Variables



- Using your <u>survey</u> please answer the following:
  - 3. What 2011 Scottish Census information are you/your organisation most interested in using again for 2021?

What specific information have you used from the 2011 Census? This could be by a geography (e.g. Council Areas) and/or by sex and age.





#### **UK Harmonised Variables**

- We are currently working with the Outputs teams in the ONS and NISRA to harmonise on variables where possible
- We are aware that there are users of Scotland's Census who also use Census data from the other Census Agencies
- There were variables in 2011 that were harmonised across the Census Agencies, for example Religion (UK version)
- In the case where we cannot harmonise, we will inform our users using metadata (i.e. information about the variables)





### Survey UK Harmonised Variables



- Using your <u>survey</u> please answer the following:
  - 4. Do you/your organisation intend to compare or combine Scottish Census results with Census results from across the UK?

Will your work require you to use Census data across the UK?

5. If so, what information are you intending to use that requires harmonisation across the UK Census agencies?

This could include variables that have already been disseminated in 2011 as UK harmonised variables.





#### New Variables

- We are currently considering and developing new variables, subject to SDC considerations
- These can be based on our new questions:

Bedrooms

BSL User

Trans Status/History

Passports Held

Sexual Orientation

Ex-Service Personnel/ Veterans

#### Examples:

- Ex-Service Personnel indicator Indicates whether a person is an Ex-Service Personnel
- UK Passport indicator Indicates whether person has a UK passport



#### Survey New Variables



- Using your <u>survey</u> please answer the following:
  - 6. Based on the new questions for Scotland's 2021 Census, what new information do you/your organisation need?

Are there any new questions you're interested in outputting data on? Are there any Census data we did not captured in 2011 that you/your organisation need?





### Variables Needed Summary

- 2011 variables which were had the strongest user need were prioritised and are currently being updated for 2021
- We are working closely with the UK Census Agencies to harmonise where possible
- We are considering new variables for the 2021 Census
- We want to ensure that we capture all user needs





# Variable Questions?

Email us on our **SDC and Outputs email address** 





# Session 3 Outputs Release Schedule and Approach





### **Outputs Dissemination**

- Scotland's Census website will be the main platform for results dissemination
  - 2021 Website is currently being designed with an emphasis on accessibility and ease of use
- The Flexible Table Builder tool will allow users to create their own tables from 2021 Census data
- This will mean a reduction in the number of Standard Tables
  - Down from 400 in 2011 to less than 100 in 2021
  - Commissioned Table Service will still be available
- Change in order outputs are released as a result of the introduction of the Flexible Table Builder





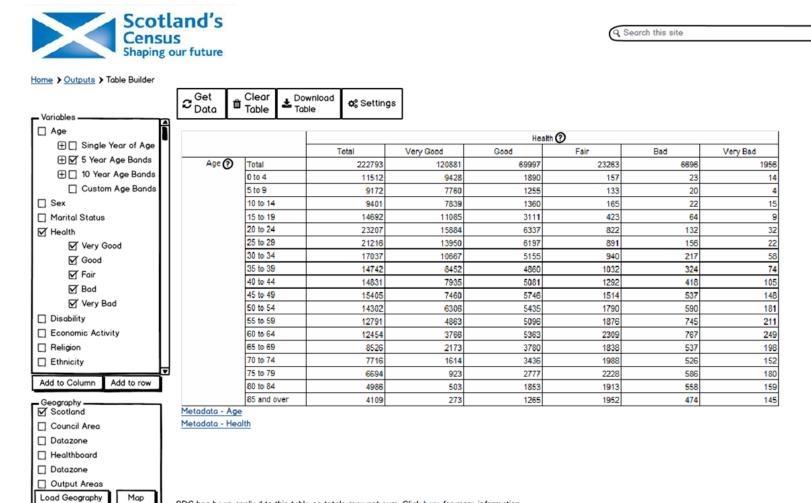
#### Flexible Table Builder

- Allows users to create their own tables
- Users will select which variables they are interested in
- Can be cross tabulated to create data between two or more variables



# Flexible Table Builder Prototype

Example: Age and General Health

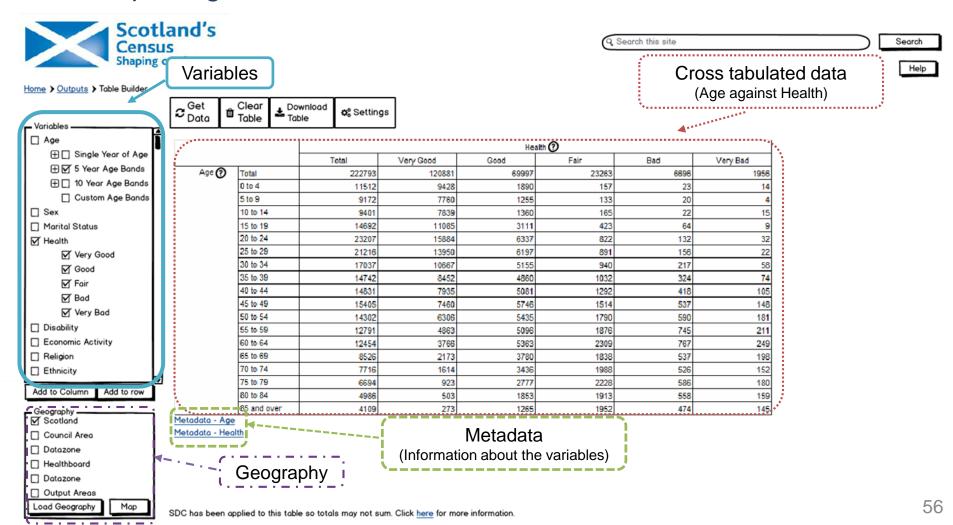


Search

Help

# Flexible Table Builder Prototype

Example: Age and General Health



#### Standard Tables

- In 2011 this was these predefined tables were the main way of disseminating Census data
- These are cross tabulated tables of variables usually against geographies and/or age and sex
- The Flexible Table Builder allows us to prioritise Standard Tables with the highest interest
- This allows us to effectively reduce the number of Standard Tables disseminated





### **Survey**Standard Tables



- Using your <u>survey</u> please answer the following:
  - 7. Which, if any, of the 2011 Standard Tables are particularly important to you/your organisations work?

Are there any pre-defined tables required for your/your organisations work?

For example: 'KS301SCb' or 'Health and provision of unpaid care'





### Outputs Release Schedule

Date	Topic
March 2022	First release: Summary rounded population table by age, sex and Council Area
Autumn 2022	Unrounded and potentially unperturbed population statistics by a range of topics and Council area. These variables also released in the flexible table builder but only for higher level geographies
Winter 2022/2023	Predefined tables by topic, age and sex for unchanged/largely unchanged questions for all standard geographies down to output area. These variables also released in the flexible table builder and available to standard geographies down to output area.
March 2023	Final predefined outputs for new questions by topic, age and sex for all standard geographies down to output area. These variables also released in the flexible table builder and available to standard geographies down to output area.
Autumn 2023	Microdata and origin destination data
2024	Workplace and daytime

Exact timings and content subject to statistical disclosure control and UK harmonisation considerations





### Survey Outputs Release Schedule



- Using your <u>survey</u> please answer the following:
  - 8. Do you/ your organisation have specific pieces of work that will require data from Scotland's 2021 Census by a certain date? If so, please give details on what you need and when you need it by.

Please provide details of these pieces of work where possible.





### Outputs Release Approach Patchwork vs Blanket

#### Patchwork Approach

 If a table passes our SDC rules then that data will be available to users, even if other areas at the same geography level fail SDC rules

#### Blanket Approach

 If any area at a given level of geography fails SDC rules for a table, then that table will not be available for any areas at the same geography level





### Patchwork Approach Example

- Output Area 1 passes SDC rules for Religion by Ethnic Group table
- Output Area 2 fails SDC rules for the same table
- The table will be available for OA 1 but not OA 2









### Blanket Approach Example

- Output Area 1 passes SDC rules for Religion by Ethnic Group table
- Output Area 2 fails SDC rules for the same table
- The table will be unavailable for all Output Areas

OA 1 OA 2

**Table Unavailable for all Output Areas** 





# Survey Outputs Release Approach



- Using your <u>survey</u> please answer the following:
  - 9. Based on your/your organisations use of Census data, which outputs release approach do you/your organisation prefer?

Do you have a preference on how Outputs are disseminated either by patchwork or blanket approach?





# Outputs Release Schedule and Approach

- A flexible table builder tool will be available on the Scotland's Census 2021 website which will allow users to create their own tables
- The number of Standard Tables will be reduced but there will still be a Commissioned Table Service.
- From an SDC standpoint, tables can be released using either the patchwork or the blanket approach.





# Outputs Release Schedule and Approach

Questions?

Email us on our **SDC and Outputs email address** 





### Summary





### Updates

- Census Draft Order came into force 12<sup>th</sup> of March, which essentially means the Census is going ahead
- Questions have slightly changed to suit more user needs and for harmonisation
- Supplier (WingArc) for Outputs System confirmed
- Internal testing on the Outputs System ongoing
- Website discovery phase with supplier StormID ongoing
- Currently preparing for outputs by updating and developing (derived) variables for tabular outputs





#### Variables

- Variables are used in our outputs for users to extract the information they need from the Census
- They are created using a number of ways and can take a number of different formats on different subjects
- 2011 variables which were used the most are currently being updated
- We are working closely with the UK Census Agencies to harmonise where possible
- We are still considering new variables
- We want to ensure that we capture all user needs





# Outputs Release Schedule and Approach

- A flexible table builder tool will be available on the Scotland's Census 2021 website which will allow users to create their own tables
- The number of Standard Tables will be reduced but there will still be a Commissioned Table Service.
- From an SDC standpoint, tables can be released using either the patchwork or the blanket approach.





### Closing





#### Survey Closing



- We would like to know whether this remote session has been helpful in capturing your/your organisations feedback, by asking a few final questions in the <u>survey</u>
- If you are happy for us to contact you to discuss your answers in more depth, please provide your contact details in the final part of our survey
- This is voluntary and if you want your survey to be anonymous then simply press 'Done'.





### Thank you!

- We would like to thank you for taking the time to read these slides and giving us your feedback!
- If you have any questions, please don't hesitate to get in touch with us on

scotlandscensus@nrscotland.gov.uk

 To keep up to date with the latest developments latest developments and future events, go to

www.scotlandscensus.gov.uk

...and follow our new twitter account:

@Scotcensus2021



