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# UK Data Service Introduction to Census

Richard Wiseman (Jisc, Manchester)



Webinar  
25 October 2018

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# What is a census?

- Main function to count the ***population***
  - At one or more location
- Obtain some characteristics about the population
- Outputs at small geographies
- Informs public spending
- Used as a basis for other statistical systems

# The United Kingdom



Help tomorrow take shape

Service

# How were the data collected?

 **Household Questionnaire**  
England  
 Office for National Statistics



**Return to:**  
**FREEPOST 2011 Census,**  
**Processing Centre, UK**

**A message to everyone - act now**

Everyone should be included in the census - all people, households and overnight visitors.

It is used to help plan and fund services for your community - services like transport, education and health.

Please complete your census questionnaire on 27 March 2011, or as soon as possible afterwards. You can fill it in online or on paper.

Taking part in the census is very important and it's also compulsory. You could face a fine if you don't participate or if you supply false information.

Your personal information is protected by law. Census information is kept confidential for 100 years.

So help tomorrow take shape and be part of the 2011 Census.

*J. N. Matheson*  
Jil Matheson  
National Statistician

**Complete online**

 [www.census.gov.uk](http://www.census.gov.uk)  
Your personal internet access code is:

OR fill in this paper questionnaire and post it back using the pre-paid envelope supplied.

If your address is incorrect or missing, enter your correct address here:

Postcode

**Declaration**

This questionnaire has been completed to the best of my knowledge and belief.

Signature

Date  Telephone number

We may contact you if we need to collect missing information.

If you have lost your envelope, please return to:  
FREEPOST 2011 Census, Processing Centre, UK

**Where can you get help?**

 [www.census.gov.uk](http://www.census.gov.uk)

Self-completion

Post-out post back

Online completion

Census offices could focus resources on follow-up and hard to count areas

# What questions were asked?

## Demographics

Age  
Sex  
Country of Birth  
Short-term residence  
Ethnicity  
Religion  
Passports  
Language  
National identity  
Household relationships  
Marital status  
Second residence  
Migration

## Household

Tenure  
Accommodation type  
Cars  
Central heating  
No. of bedrooms

## Socio-economic

Health  
Unpaid care  
Qualifications  
Economic activity  
Occupation  
Industry  
Supervision  
Travel to work  
FT / PT

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# Getting a complete count

- Establishing a high quality address register
- Focusing resources on hard to count areas
- Target response rate of 94% achieved – no local authority below 80%
- Lower response rates for young men, those born overseas, those who live alone
- Coverage survey used to estimate undercounts, to enable imputation

# The promise of confidentiality

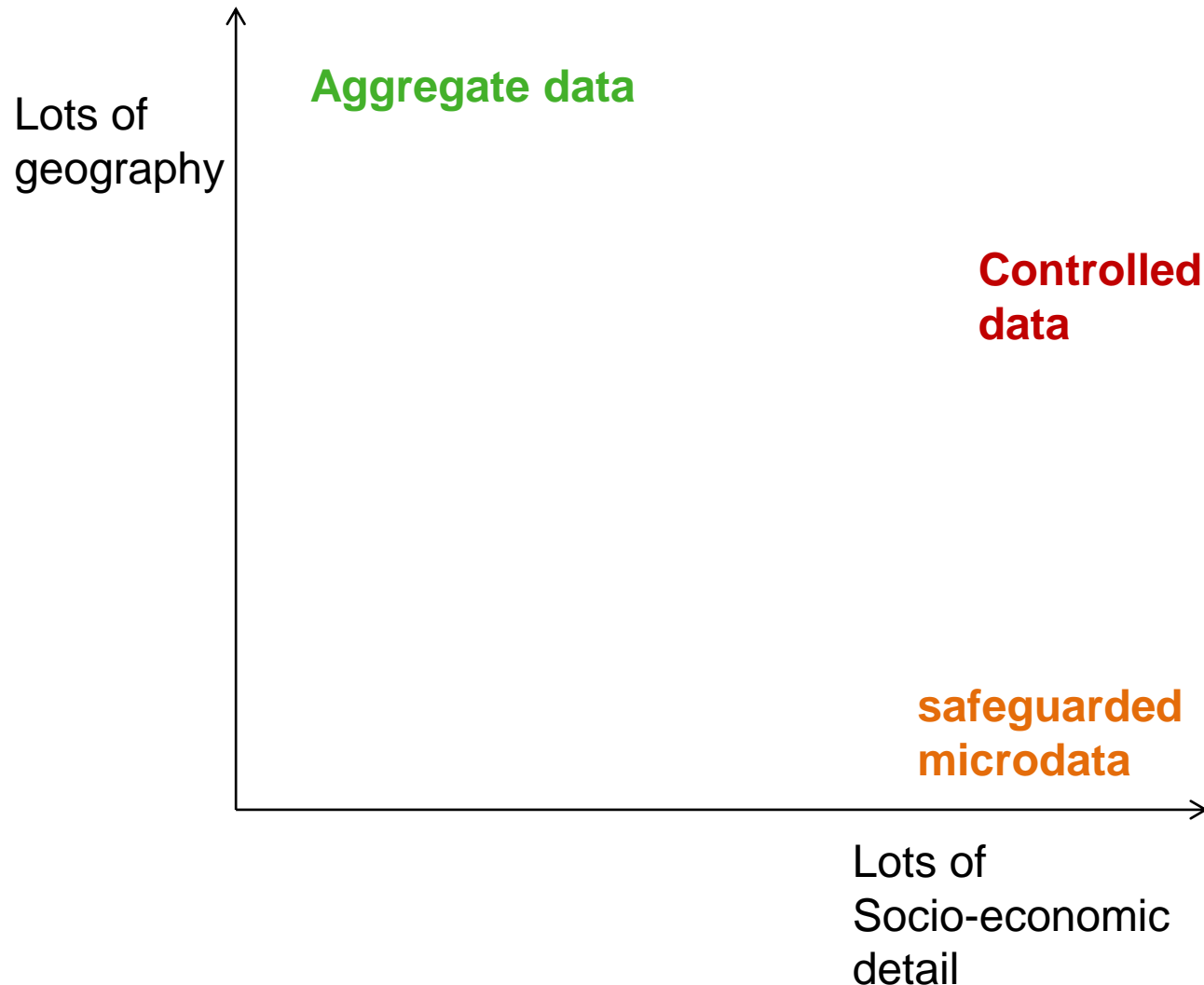
The information you provided to us in the 2011 Census is confidential and protected by law.

The confidentiality of personal information is a top priority for the census. Your personal census information is not shared with any other government department, local councils or marketing companies.

Information collected in the 2011 Census will be used solely to produce statistics and for statistical research. These statistics will not reveal any personal information.

The paper questionnaires are scanned, then shredded, pulped and recycled. Census records are kept confidential for 100 years before being made available to the public. Census records remain closed while they are in the custody of the census offices. Records from the 2011 Census for England and Wales are not scheduled for public release before January 2112

# Reflecting confidentiality in output planning





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# Census output types

Supported by the UK Data Service

- Microdata
  - Samples of census records
  - Detail limited to protect confidentiality
- Aggregate data
  - Counts of combinations of characteristics for areas
- Flow data
  - Counts of migrants from origin to destination
  - Or, between first and second address
  - Or home and place of work
- Boundary data
  - GIS files to enable these to be mapped

Supported by CALLS <http://calls.ac.uk/>

- Longitudinal microdata for each country

# Microdata (Individual level detail)

- Individual records contain person and household characteristics
- Sample data only

	agegpt	aprxsocgr	cofbt	econacit	ethewit	famcomp	healthi	indusit	marstatit	numhrs	occupat
1	55 to 6	DE	UK	Economi	White	Married	Good he	Mining/	Married	No code	Proce
2	35 to 4	C2	UK	Economi	White	Lone pa	Very go	Transpo	Single	Full-ti	Proce
3	35 to 4	DE	UK	Economi	White	Cohabit	Very go	Human h	Single	Full-ti	Carin
4	16 to 2	C1	UK	Economi	White	Cohabit	Good he	Financi	Single	Full-ti	Sales
5	45 to 5	C1	UK	Economi	White	Cohabit	Very go	Wholesa	Divorce	Full-ti	Manag
6	55 to 6	C2	UK	Economi	White	Married	Good he	Mining/	Married	Full-ti	Elem
7	35 to 4	C2	UK	Economi	White	Lone pa	Good he	Human h	Separat	Part-ti	Carin
8	0 to 15	No code	UK	No code	White	Cohabit	Good he	No code	Single	No code	No co
9	65 to 7	C1	UK	Economi	White	Married	Very go	Mining/	Married	No code	Proce
10	55 to 6	DE	UK	Economi	White	Not in	Fair he	Accommo	Divorce	No code	Elem
11	25 to 3	DE	UK	Economi	White	Not in	Fair he	Mining/	Single	Full-ti	Proce
12	0 to 15	No code	UK	No code	White	Married	Very go	No code	Single	No code	No co
13	16 to 2	C1	UK	Economi	White	Not in	Very go	Mining/	Single	Full-ti	Sales
14	16 to 2	C1	UK	Economi	White	Not in	Good he	No code	Single	No code	No co
15	16 to 2	DE	UK	Economi	White	Lone pa	Good he	Wholesa	Single	Part-ti	Sales
16	16 to 2	C1	UK	Economi	White	Not in	Good he	Transpo	Single	No code	Sales
17	16 to 2	DE	UK	Economi	White	Cohabit	Very go	Constru	Single	Full-ti	Proce
18	16 to 2	C1	UK	Economi	White	Cohabit	Very go	No code	Single	No code	No co
19	35 to 4	DE	UK	Economi	White	Not in	Fair he	Mining/	Single	Full-ti	Proce
20	0 to 15	No code	UK	No code	White	Married	Very go	No code	Single	No code	No co
21	55 to 6	DE	UK	Economi	White	Married	Fair he	Mining/	Married	No code	Elem

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# Why use this type of data?

- Very flexible
  - Can create your own tables
  - Can combine characteristics to create new ones
  - Can define sub populations
  - Can undertake multivariate analysis
- But
  - Sample data, means that results are estimates
  - Geographical detail is limited

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# Types of 2011 census microdata

- Teaching files (Open) – available from census offices for some time
  - 1% taster file
  - Regional geography
  - England and Wales file available in Nesstar
- Safeguarded files – available from UK Data Service
  - Each file contains a 5% sample
  - Regional file for each territory (slightly more individual detail than the: )
  - Grouped local authorities for each territory (minimum LAD population threshold = 120,000)
- Controlled files – contact relevant census office
  - 10% sample
  - Very detailed with true LAD geography

More info:


<https://census.ukdataservice.ac.uk/get-data/microdata>

# Dataset summary for England and Wales

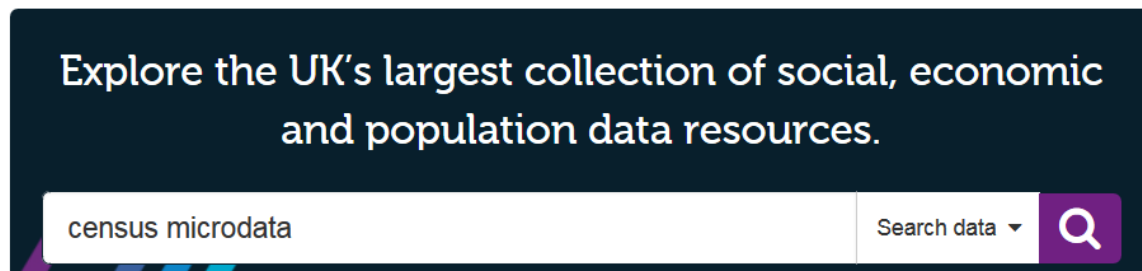
Characteristic	Teaching	Safeguarded Regional	Safeguarded grouped LA	Secure individual	Secure Household
Number of variables	18	121	121	258	245
Smallest geography	Region	Region	LAD > 120,000	LAD	LAD
Licence	OGL	End User Licence	End User Licence	Approved Researcher	Approved Researcher
Sample size	n=569,741 1%	n=2,858,155 5%	n=2,795,020 5%	n>5 million 10%	n>5 million 10%
Age detail	8 age groups	Individual yrs to 70, then 5 groups	Individual yrs to 70, then 5 groups	Individual yrs to 94, then 95-96, 97+	Individual yrs to 94, then 95-96, 97+
Occupation detail	9 classes	25 classes	25 classes	Full: 369 classes of SOC plus ISCO	Full: 369 classes of SOC plus ISCO
Ethnic group	5 classes	18 classes	13 classes	Full: 151 categories	Full: 151 categories

# e.g. Safeguarded Regional for England and Wales:

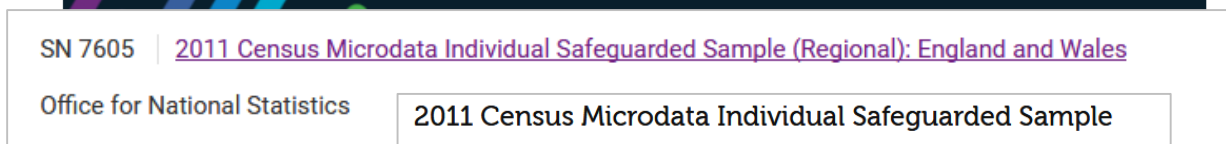


 Register / Login

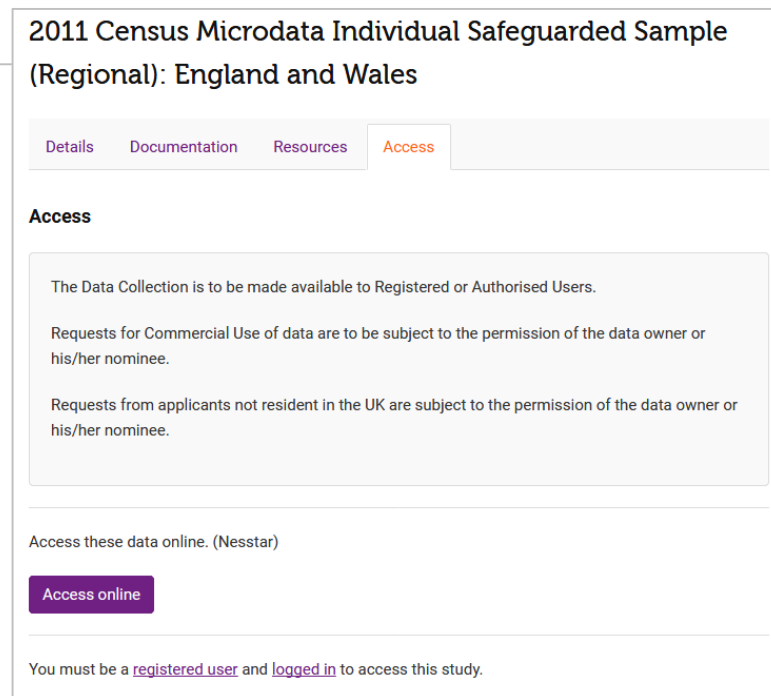
1. Quick to find using discover...



2. Click the relevant search result



3. Click “Access” tab, then “Access online”



4. You will need to be registered to interrogate the data

# Population Base – Short term migrants (STR in England and Wales and NI files only)

“A STR was defined in the 2011 Census as anyone living in England and Wales who was born outside the UK and who intended to stay in the UK for a period of between three and 12 months, for any reason.” [ONS 2013](#)

## Full-time students/schoolchildren by population base and age Census Microdata Teaching File for England and Wales 2011

Population Base			Age group			
			Less than 16	16-24	25-34	35+
Usual resident	Student	Yes	81737	31166	3608	2204
		No	23993	35122	71608	311602
	Total		105730	66288	75216	313806
Student living away from home during term-time	Student	Yes	944	5572	185	29
	Total		944	5572	185	29
Short-term resident	Student	Yes	115	711	233	33
		No	43	214	314	308
	Total		158	925	547	341
Total	Total		106832	72785	75948	314176

# Data about areas

- known as aggregate data
- counts of people, households, etc. with particular combinations of characteristics for an area
- areas vary from large to very small
- example:  
number of females aged 30-34 who are married and live in private rented accommodation in the county of Devon





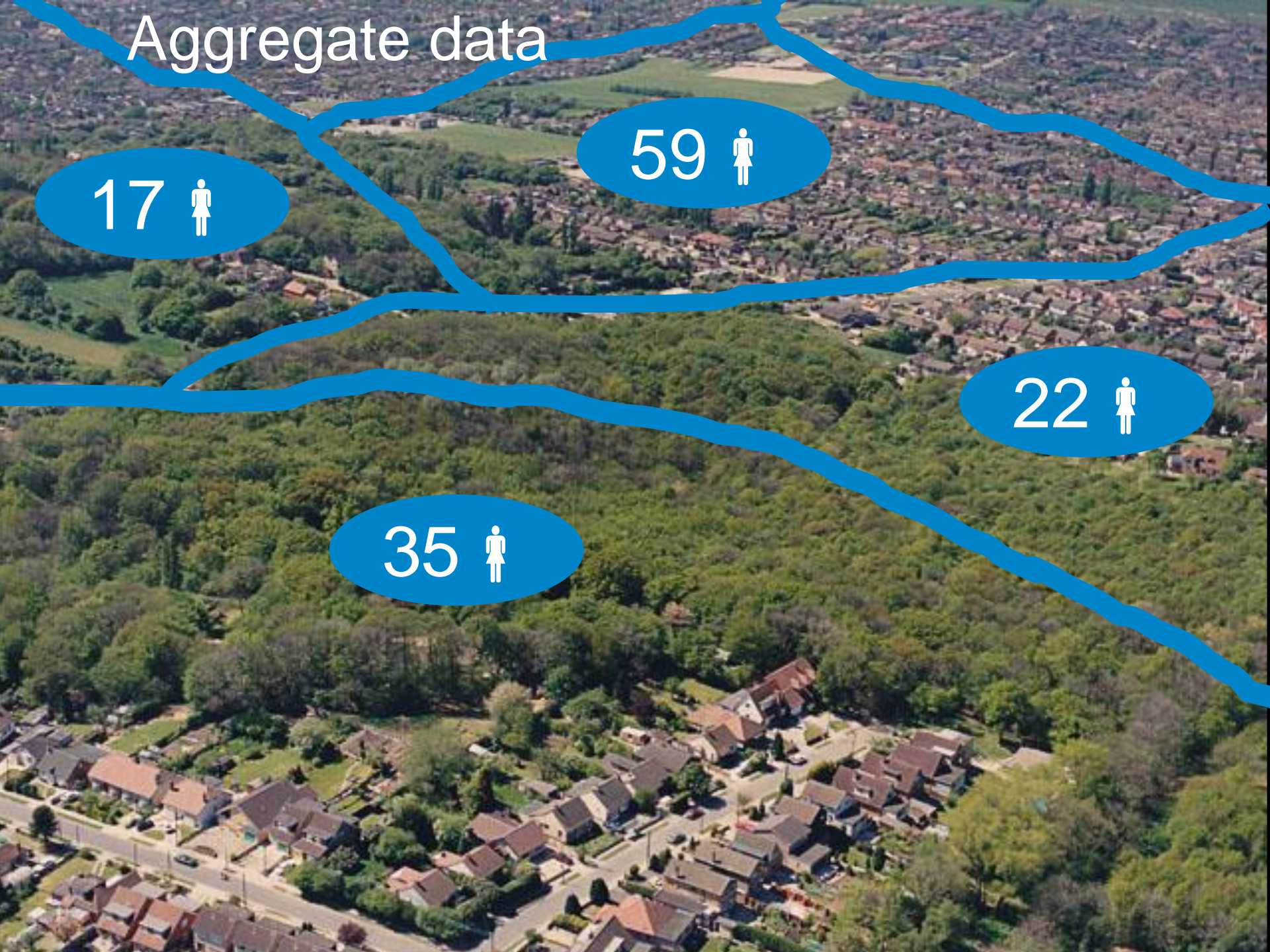
# Aggregate data

17 ♀

59 ♀

22 ♀

35 ♀

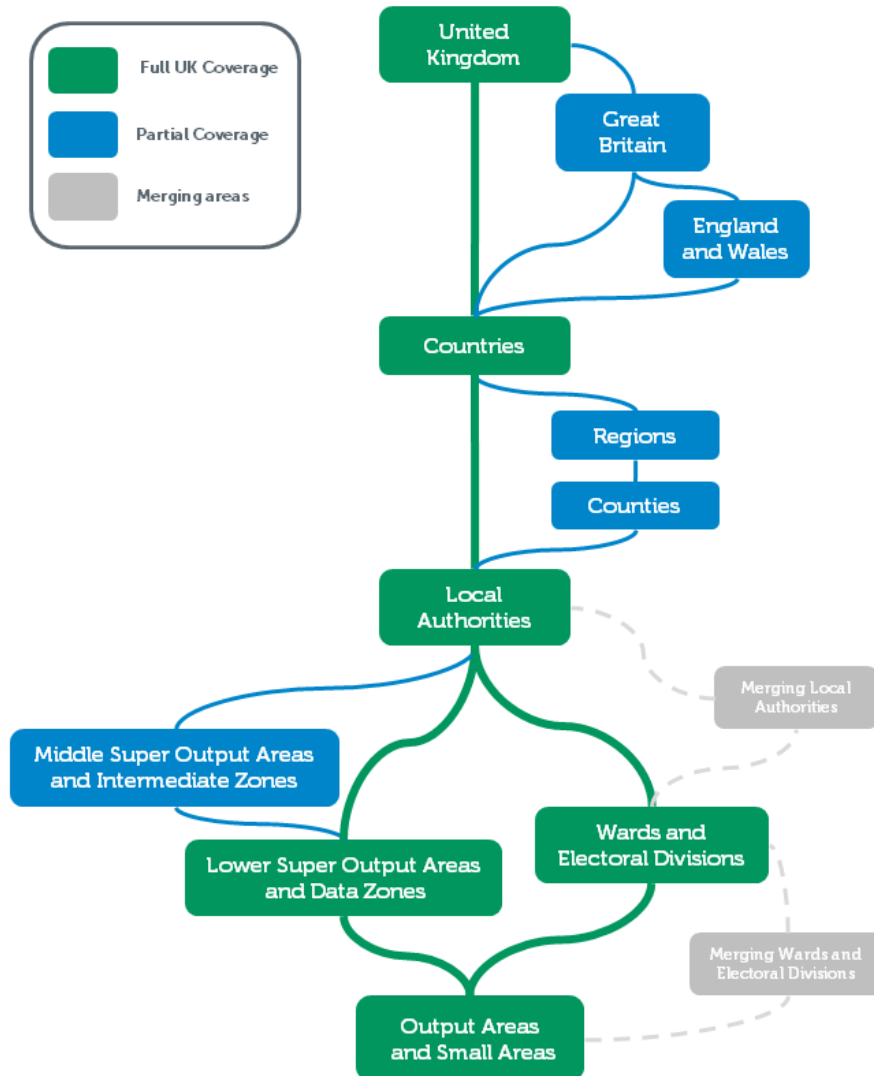


# Example data

Age : 16 to 24 years old - Religion (England and Wales) : Muslim - Unit : People

CDU_ID	GEOGRAPHY	GEOGRAPHY LABEL	GEOGRAPHY TYPE	F79175	F79176	F79177	F79178	F79179	F79180	F79181	F79182	F79183
				Age : 16 to 24 years old - Religion (England and Wales) : Muslim - Unit : People	Age : 16 to 24 years old - Religion (England and Wales) : Muslim - Unit : People	Age : 16 to 24 years old - Religion (England and Wales) : Muslim - Unit : People	Age : 16 to 24 years old - Religion (England and Wales) : Muslim - Unit : People	Age : 16 to 24 years old - Religion (England and Wales) : Muslim - Unit : People	Age : 16 to 24 years old - Religion (England and Wales) : Muslim - Unit : People	Age : 16 to 24 years old - Religion (England and Wales) : Muslim - Unit : People	Age : 16 to 24 years old - Religion (England and Wales) : Muslim - Unit : People	Age : 16 to 24 years old - Religion (England and Wales) : Muslim - Unit : People
10251	16UB	16UB : Allerdale	Districts	6803	0	6	0	10	0	15	1038	504
10252	16UC	16UC : Barrow-in-Furness	Districts	4972	3	0	3	23	0	10	1131	500
10253	16UD	16UD : Carlisle	Districts	7395	14	3	3	48	6	15	1857	827
10254	16UE	16UE : Copeland	Districts	5514	6	9	3	12	0	3	684	424
10255	16UF	16UF : Eden	Districts	3142	5	3	0	6	0	3	729	274
10256	16UG	16UG : South Lakeland	Districts	6073	17	6	3	3	3	13	1810	648

# 2011 geographical levels



## Area data coverage

Census	Coverage	Tool
2011	UK	InFuse
2001	UK	InFuse (E&W) Casweb
1991	UK	Casweb
1981	GB	Casweb
1971	GB	Casweb

# Casweb

- [casweb.ukdataservice.ac.uk](http://casweb.ukdataservice.ac.uk)
- 1971-2001 aggregate data
- select by table
- open to everyone



The screenshot shows the Casweb website interface. At the top left, it says "UK Data Service Census Support" with a logo. The main heading is "Casweb". To the right is a colorful graphic of diagonal bars. Below the heading, there is a navigation menu with "Casweb Home Guide" selected. The main content area states: "Casweb provides access to UK census aggregate data". It then explains that it provides access to England, Wales, and Scotland 2001, 1991, 1981, 1971 data and 2001 and 1991 Northern Ireland data. A bold statement says "Casweb will NOT provide access to 2011 Census data." followed by two bullet points: "England and Wales 2011 data is available via [InFuse](#)" and "Take a look at our [2011 Census plans](#) page for more information". At the bottom, there is a red button that says "Start Casweb".

UK Data Service  
Census Support

## Casweb

- Casweb Home Guide

### Casweb provides access to UK census aggregate data

We provides access to England, Wales, and Scotland 2001, 1991, 1981, 1971 data and 2001 and 1991 Northern Ireland data.

**Casweb will NOT provide access to 2011 Census data.**

- England and Wales 2011 data is available via [InFuse](#)
- Take a look at our [2011 Census plans](#) page for more information

[Start Casweb](#)

# InFuse

- [infuse.ukdataservice.ac.uk](http://infuse.ukdataservice.ac.uk)
- 2011 UK aggregate data
- 2001 England and Wales aggregate data
- integrated metadata
- select by topic or geography
- makes it easy
- open to everyone

The screenshot shows the InFuse 2011 web application interface. At the top left, it says "UK Data Service Census Support" with a logo. The main title "InFuse 2011" is prominently displayed in the center. To the right of the title is a colorful graphic of several vertical bars in shades of blue, green, and purple. Below the title, there are "Steps: 1 2 3 4" and a "Start A" button. The main content area is titled "Topics" and includes a "Show Guidance" button. Below this, there is a "Filters" section with a "Clear filters" button. The filters are organized into a grid of topic combinations, each with a "Select" button. The first row shows combinations of "Accommodation type", "Accommodation type, Bedrooms, number of persons per bedrooms in household, Tenure", "Age, Sex", and "Age, Main language (detailed)". The second row shows combinations of "Accommodation type, Household spaces", "Accommodation type, Dependent children, age of, Bedrooms, number of, Usual resident population", "Age, Care (unpaid), provision of", and "Age, Marital and civil partnership status".

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## InFuse 2011

Steps: 1 2 3 4

### Topics

Show Guidance

Showing 277 topic combinations  
Page 1 of 18

First < 1 | 2 | 3 > Last

**Filters** Clear filters

- Ethnic group (write-in responses)
- Ethnic group of Household reference person
- Ethnic group UK
- Ethnic groups, multiple
- Family reference person, age of
- Family status
- General health
- Hours worked
- Household composition
- Household composition (alternative child and adult definitions)

• Accommodation type

• Accommodation type  
• Bedrooms, number of persons per bedrooms in household  
• Tenure

• Age  
• Sex

• Age  
• Main language (detailed)

Select Select Select Select

• Accommodation type  
• Household spaces

• Accommodation type  
• Dependent children, age of  
• Bedrooms, number of  
• Usual resident population

• Age  
• Care (unpaid), provision of

• Age  
• Marital and civil partnership status

# Census bulk download – New interface

- [statistics.digitalresources.jisc.ac.uk](http://statistics.digitalresources.jisc.ac.uk)
- 2011 Census data (aggregate, flow, boundaries)
- UK wide
- BUT - Only selected datasets at moment
- Bulk download
- Search
- Open to everyone

The screenshot displays the UK Data Service interface for Census data. The header includes navigation links for 'Datasets' and 'About', and the main title 'UK Data Service | Census data'. A left-hand sidebar contains filters for 'Topics' (with 262 results), 'Keywords', 'Area Type', 'Year', 'Format', and 'Units'. The 'Topics' list includes categories like Demography (134), Accommodation and housing (78), Labour market (76), Migration (36), Health (30), Transport (25), Ethnicity (23), Travel to work/study (23), Identity (20), Education and qualifications (16), Language (16), Geography (15), Religion (13), and Armed Forces (1). The main content area shows '262 results' with search and sorting options. Three search results are visible, each with a cube icon, a title, a source link, topic tags, and dataset population information.

UK Data Service | **Census data**

262 results

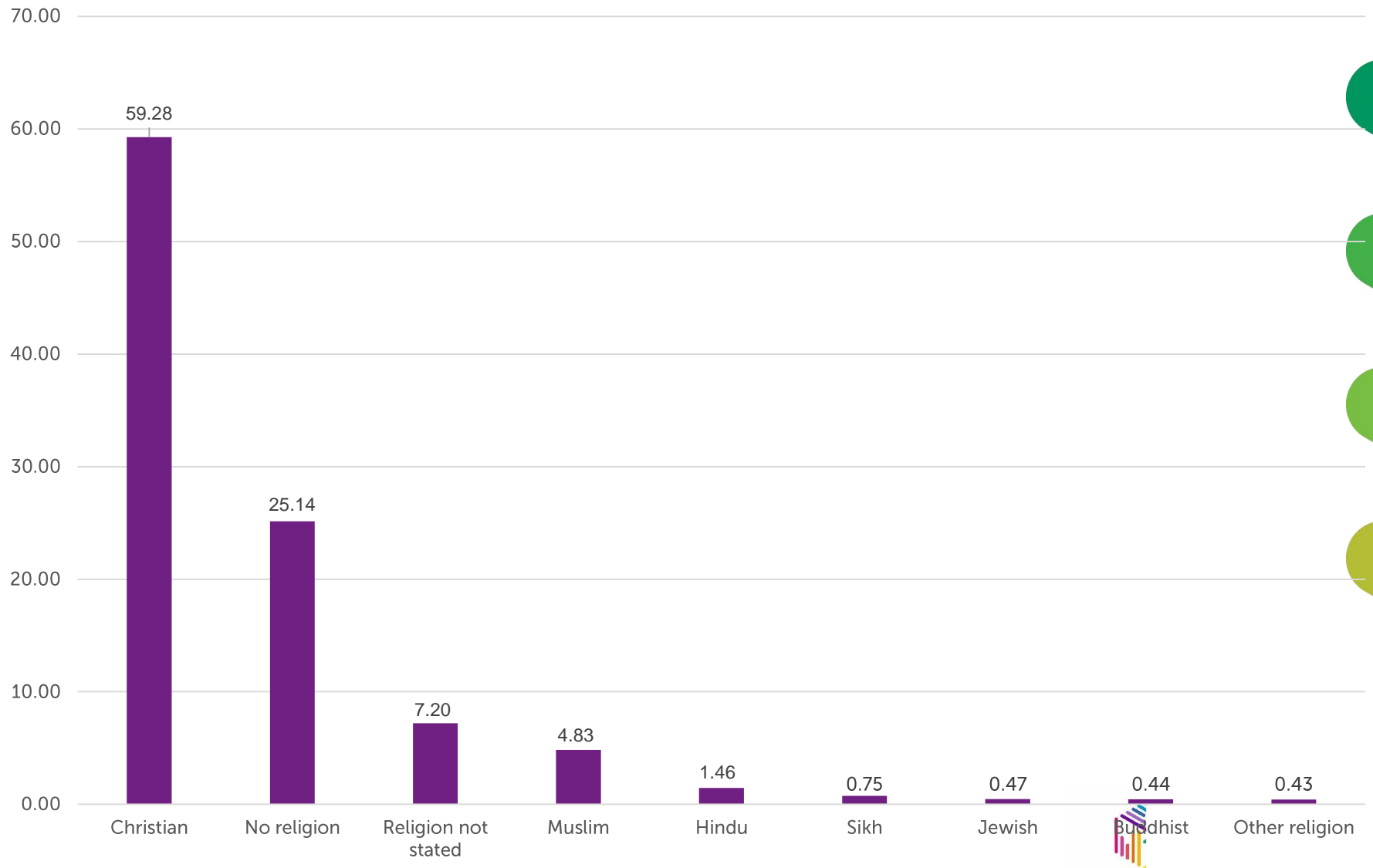
Search  Sort by  Order

Age by Economic activity by Occupation 2011  
Office for National Statistics; National Records of Scotland; Northern Ireland Statistics and Research Agency; UK Data Service.  
**Topics:** Demography Labour market  
**Dataset population:** Persons aged 16 and over in employment the week before the census  
5x  3x

Age by Sex 2011  
Office for National Statistics; National Records of Scotland; Northern Ireland Statistics and Research Agency; UK Data Service.  
**Topics:** Demography  
**Dataset population:** Persons  
4x  4x

Unpaid carers by Number of people with a long-term health problem or disability (Council Areas in Scotland) 2011  
Office for National Statistics; National Records of Scotland; Northern Ireland Statistics and Research Agency; UK Data Service.  
**Topics:** Demography Health

# Religion England and Wales % (2011)



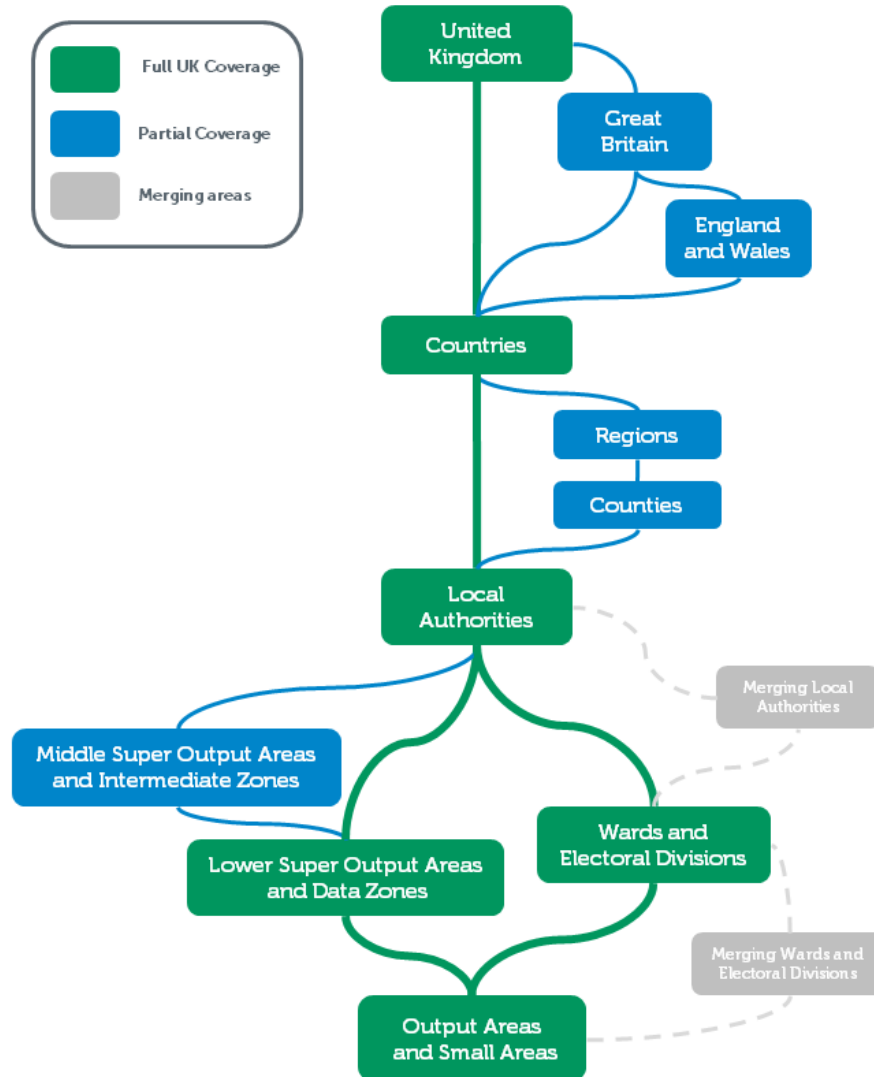


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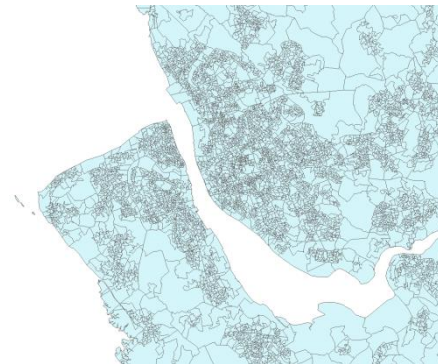
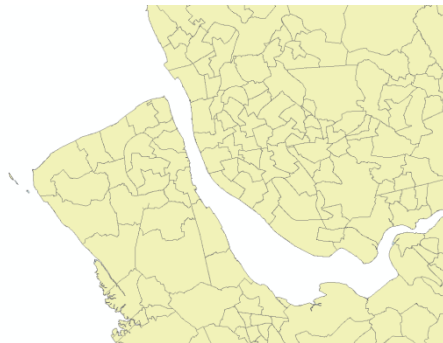
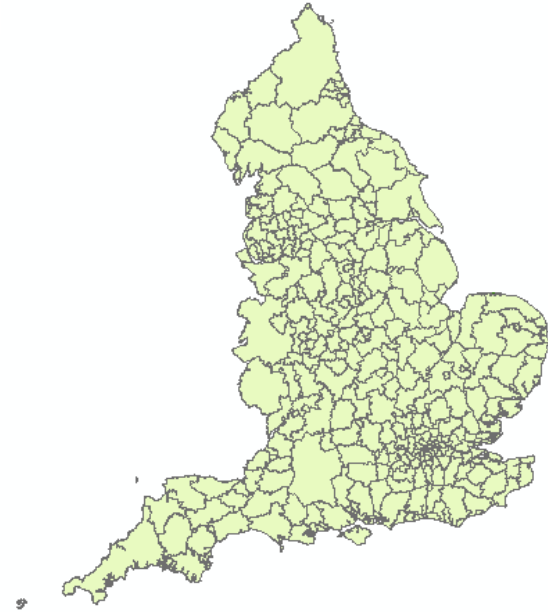
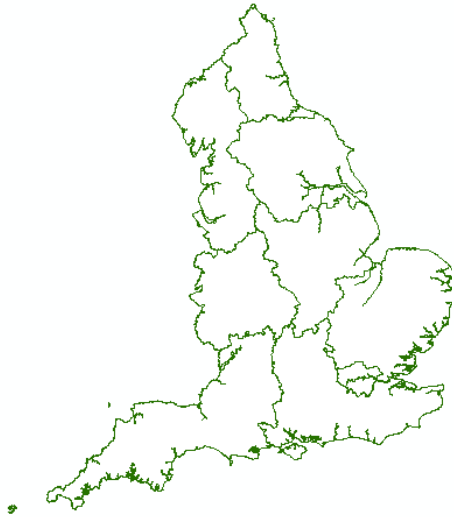
# Boundary data

- 1971-2011 (also some historical boundaries)
- most data open to all (some restricted to UK FE/HE)
- GIS formats
- delivered through:
  - Easy Download
  - Boundary Data Selector
- Thematic Mapper

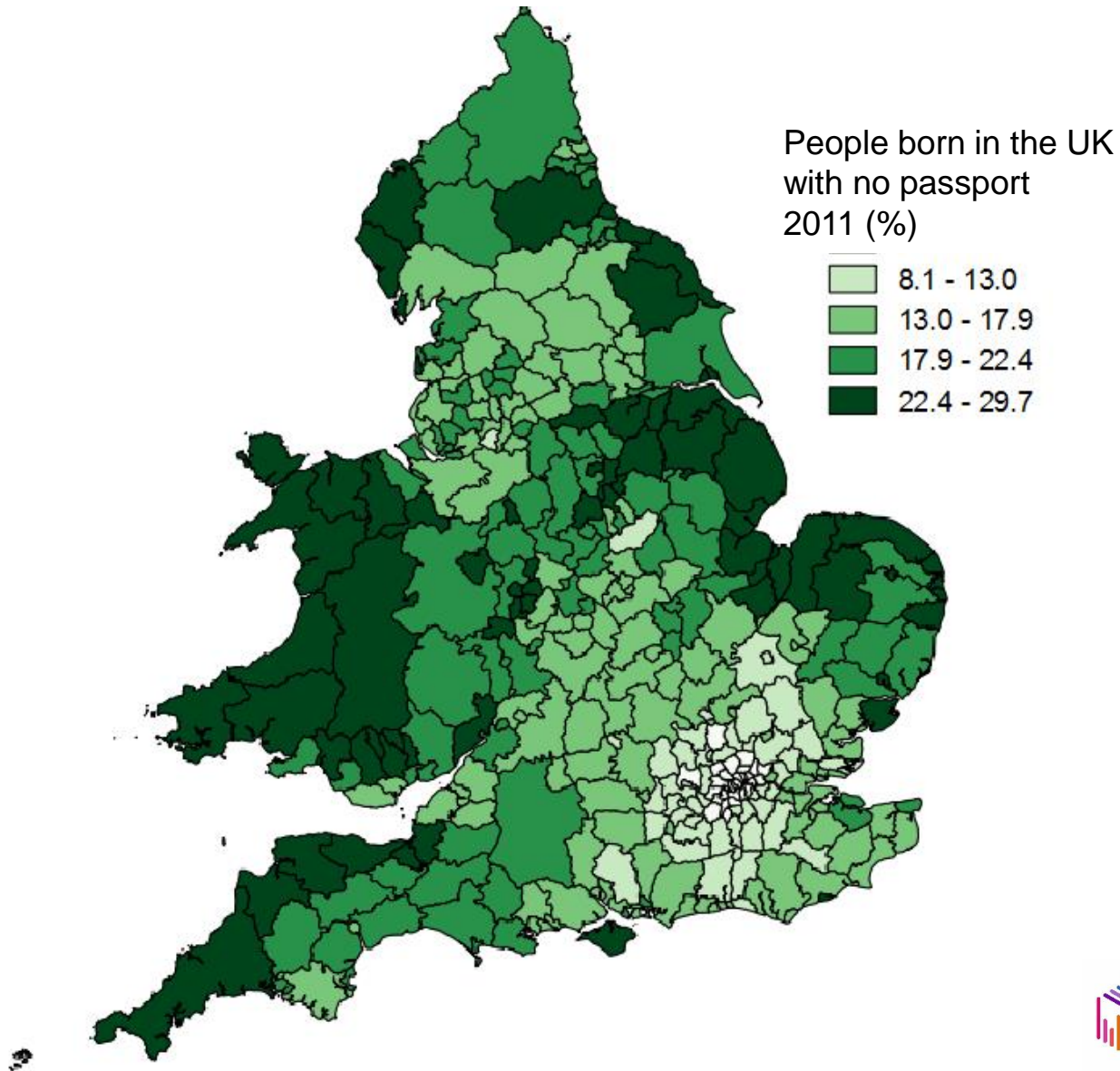
# 2011 geographical levels



# Census boundary data



# Putting data in maps



# Census flow data

- special type of aggregate data, where there is an origin and destination
- two main types
  - commuting
  - migration
- 1981-2011, and non census data
- access levels
- [wicid.ukdataservice.ac.uk](http://wicid.ukdataservice.ac.uk)



# Flow data – Travel by train Local Authorities (2011 Census)

2011 SWS Merged LA/LA [Location of usual residence and place of work by method of travel to work] - WU03UK - Open

**Origin geography:** UK Local Authorities (merged) 2011 **Destination geography:** UK Local Authorities (merged) 2011

Layer: Table WU03UK cell 4 - Method of travel to work Train;

Origins	Destinations				
	Hartlepool	Middlesbrough	Redcar and Cleveland	Stockton-on-Tees	Darlington
Hartlepool	26	32	0	49	11
Middlesbrough	6	75	23	53	40
Redcar and Cleveland	3	295	124	125	26
Stockton-on-Tees	25	132	33	93	71
Darlington	2	77	9	61	79



Register / Login

Explore the UK's largest collection of social, economic and population data resources

Search data [input field] [magnifying glass icon]

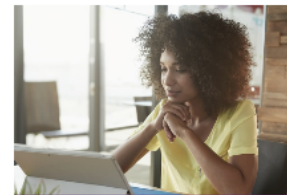
### About the UK Data Service



### Guides and resources

- Dataset guides
- Topic guides
- Methods and software guides
- Guides to exploring online

See more >



#### Video tutorials

See our range of training videos

See data from all over the world

Browse our data map

### Data types

Census data

International macrodata

Longitudinal studies

Qualitative/mixed methods

UK surveys

### Data Skills Modules

Longitudinal Data  
Aggregate Data  
Survey Data



#### Data Skills Modules

Learn more about longitudinal, survey and aggregate data in our new Data Skills Modules



### Our impact

Find out how data from the UK Data Service...

### Latest data

Active Lives Survey, 2016-2017

British Household Panel Survey: Waves 1-18, 1991-2009: Special Licence Access

National Survey for Wales



# Census Support

**Who we are**

We provide access to and user support for 1971, 1981, 1991, 2001 and 2011 UK census data

[Read more](#)

START

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DATA CATALOGUE

Search and browse the UK Data Service Census Support data collection:

GO

Want to search wider? [Search the whole of the UK Data Service](#)

LATEST TWEETS

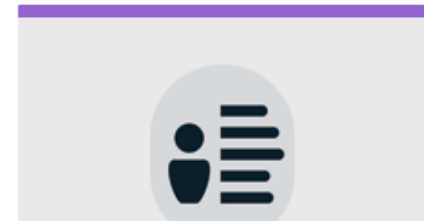
RT [@UKDataArchive](#):  
Join us this Thursday  
[@UniEssexLibrary](#) for a  
Open Access afternoon

LATEST NEWS

Changes in UK Data Service Terms and Conditions



UK DATA SERVICE CENSUS SUPPORT



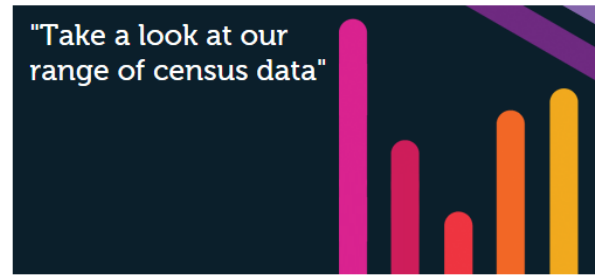


# Census > Get data



Census > Get data

## Get census data



SHARE

We hold a range of different types of census data, such as:

- [aggregate data](#)
- [flow data](#)
- [microdata](#)
- [boundary data](#)

We also hold [data related to the census](#), such as Experian data and deprivation data.

Aggregate, flow and some of the boundary data are available to anyone. Microdata has different access conditions depending on the dataset.

We do not hold the census longitudinal data. However, these can be found at:

- England and Wales (ONS LS): [CeLSIUS](#)
- Scotland (SLS): [SLS-DSU](#)
- Northern Ireland (NILS): [NILS-RSU](#)
- information on all three census longitudinal studies at [CALLS Hub](#)

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GO

Census Data Website

QUICK ACCESS TO

UK Data Service key data

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# Census > Use data



## Guides

### Citing data

#### ● About UK censuses

Census forms

Census definitions

Census agencies

Other census tools

### Use of census data

About Census Support

Get census data

Use census data

Census news and events

Census > Use data > About UK censuses

## About UK censuses

SHARE

The census in all UK countries has been undertaken in a consistent manner. However, there are differences in some of the questions asked, processing, and detailed methodology.

Before using census data you should ensure that the census covers the right topics for you.

Questions and definitions often change between censuses. You can access the [census forms](#), [definitions](#), and the [census agencies websites](#) for further information.



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Census Data  Website

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# Useful resources and help

- **Help**

- [ukdataservice.ac.uk/help/](http://ukdataservice.ac.uk/help/)

UK Data Service

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[About us](#) [Get data](#) [Use data](#) [Manage data](#) [Deposit data](#) [News and Events](#)

Home > Help

## Help

"How can we help?"

Advice for new users  
FAQ  
Get in touch

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GO

Data  Website

SHARE

If you are new to our service, you may find the [New user](#) page or our [FAQs](#) helpful.

If you do need to contact us, please [get in touch](#).