

GEOLYTIX



CENSUS 2021

Preface

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Background to UK Censuses

Since 1801 the UK has conducted a census of its citizens every 10 years, with the sole understandable exception of 1941. Individual census returns are kept confidential for 100 years, but aggregated data for small areas are released. These data are invaluable for many applications in both the public and private sector. Since 2001 these data have been released at no charge. All the 2021 Census data is released under the Open Government License (OGL). The data within the Geolytix Census pack are similarly released under the OGL with no additional attribution requirements. A copy of the OGL licence is available at the following URL:

<http://www.nationalarchives.gov.uk/doc/open-government-licence/>

The Geolytix Census Pack contains a selection of the most widely used variables, all at the smallest areas available; these areas are called variously Output Areas (OA's) in England and Wales, and Data Zones in Northern Ireland.

Scotland postponed their census for one year due to the coronavirus (Covid-19) pandemic. The census data will begin to be published in Autumn 2023, so are not currently included in the Geolytix Census pack.

The 2021 Census covered England, Wales and Northern Ireland but was administered by two different bodies for the constituent countries of the UK:

- England and Wales - Office for National Statistics (ONS)
- Northern Ireland – Northern Ireland Statistics and Research Agency (NISRA)

Each body releases the data at different times and in different formats. The Geolytix Data pack contains data from both sources.

This document does not seek to replicate the user guides and extensive documentation provided by the statistical agencies. Definitive guidance and clarifications will almost always be included in one of the many documents curated by the agencies themselves.

The 2021 Census Dictionary for England and Wales can be found here:

<https://www.ons.gov.uk/census/census2021dictionary>

More information about the Census in Northern Ireland can be found at the following URL:

<https://www.nisra.gov.uk/statistics/census>

Reporting Geography

Output Areas are the smallest area for which comprehensive Census data is released, each one covers a small area designed to be socially homogeneous and spatially compact and contiguous.

For the 2021 Census, new OA boundaries were released for England and Wales. 2021 Census data was used to make changes to the 2011 OAs as a result of population and household changes since 2011. Around 200 OA boundaries were also selectively realigned to ward boundaries. For England and Wales in 2021, there are 188,880 Output Areas.

It has been reported that the thresholds of OAs still being made up of between 40 and 250 households and a usually resident population of between 100 and 625 people did not change. New 2021 OAs were created by merging or splitting 2011 OAs to make sure they fitted within the thresholds of the unchanged 2011 OAs. However, there are some exceptions where OAs may have more than 625 people, e.g. where there is a large prison.

Full census data for Northern Ireland at the smallest area is yet to be released. At the time of the release of the Geolytix Census data pack (June 2023) - total population, number of households, population density, age and household size are the only variables released for 2021 Northern Ireland census at Data Zone level. [‘Data Zones’](#) are the smallest area boundaries released for the Northern Ireland census data in 2021. The 3,780 Data Zones nest within the 850 Super Data Zones; both of these geographies nest within the 80 District Electoral Areas and 11 Local Government Districts in Northern Ireland.

Population Definitions and Imputation

Base	Definition
Total Population: Usual Resident Population	Usual resident is anyone who on Census Day, 21 March 2021, was in the UK and had stayed or intended to stay in the UK for a period of 12 months or more, or had a permanent UK address and was outside the UK and intended to be outside the UK for less than 12 months.
Households	One person living alone, or a group of people (not necessarily related) living at the same address who share cooking facilities and share a living, sitting or dining room. At least one person must be usually resident at the address.
Population Density	This is the number of people who live within an area per square kilometre. One square kilometre is equal to 100 hectares.
Dwellings	A dwelling is a unit of accommodation that may be empty or being lived in, for example houses or flats. They are usually made up of one household, but those with more than one household are shared and called a “shared dwelling”.
Population Resident in Households	People usually resident in households and not communal establishments
Population Resident in a communal establishment	A communal establishment is an establishment with full-time or part-time supervision providing residential accommodation, such as student halls of residence, boarding schools, armed forces bases, hospitals, care homes, and prisons.

Data Pack

This data pack contains 172 variables covering 18 topics. The first six variables are the various 'bases' used to denominate the 17 blocks of data. The first 12 topics are 'people' based while the final 5 are 'household' based. A number of variables have been grouped together to remain consistent with what was released in the previous Geolytix Census Pack. You will find descriptions of each variable under each topic which will enable you to see which variables have been grouped together.

Each variable is given a short label capped at 10 characters made up of letters and numbers only. These short labels avoid the use of any key words likely to be reserved words in development languages such as 'Admin', 'Access' or 'White'. An additional long label gives more detail and may contain spaces etc.

Null or Missing Values

As mentioned in the Reporting Geography section, the only variables released for Northern Ireland at the smallest area are total population, number of households, population density, age and household size therefore there are null or missing values for the remaining variables for the Northern Ireland Data Zones.

User Notes

When using the data provided in this data pack, it is important to remember that the census was conducted during the coronavirus (Covid-19) pandemic. This will have affected many of the variables including causing changes in where people were living, how they were travelling and how questions such as economic activity and industry were answered for example.

It is also important to remember that not all variables are directly comparable to variables released in previous censuses. You are able to find more information on each variable topic and their comparability here:

<https://www.ons.gov.uk/census/census2021dictionary/variablesbytopic>

The totals that ONS have reported might not fully match the sums of totals in this data pack due to rounding in the data and this should be minimal differences.

CENSUS 2021 OUTPUT AREA

File Name: uk_glx_geodata_census_oa_21

Record Count: 192,660 (E: 178,604, W: 10,275, N: 3,780)

Coverage: England, Wales and Northern Ireland

Column	Type	Description
id	char	id assigned by Geolytix
oa_code	char	2021 OA Code for England and Wales. Data Zone code for Northern Ireland (DZ2021)
oa_code_11	char	2011 OA Code for the OA boundaries that are unchanged, split or are new in 2021
change1121	char	2021 OA's assigned 'Merged', 'New', 'Split' or 'Unchanged'
lsoa_code	char	2021 LSOA Code which the OA falls within

Base

The first six variables provide a base and key denominators for the remaining variables.

For England & Wales, Geolytix calculated the total population variable using the Sex variables released by ONS. Definitions of the base variables can be found in the **Population Definitions and Imputation** section of this User Guide.

totpop	int	Total Population (attribute not released by ONS, Geolytix have totalled female and male)
hhd	int	Number of Households
pop_dens	int	Population density
dwellings	int	Number of Dwellings
hhdpop	int	Residence Type: Living in a household
commpop	int	Residence Type: Living in a communal establishment

Sex

This is the sex recorded by the person completing the census. The options were “Female” and “Male”. Summing males and females together will generate a count that exactly equals the ‘usually resident population’ stored in totpop variable in the **Base** section.

male	int	Total - Males
female	int	Total - Females

Age

A person’s age on Census Day, 21 March 2021 in England and Wales. Infants aged under 1 year are classified as 0 years of age. Age at the smallest area available to download for England and Wales are split into the 23 categories below. Single years of age at Data Zone level for Northern Ireland were downloaded and grouped up into the same categories by Geolytix.

age_0_2	int	Aged 2 years and under
age_3_4	int	Aged 3 to 4 years
age_5_7	int	Aged 5 to 7 years
age_8_9	int	Aged 8 to 9 years
age_10_14	int	Aged 10 to 14 years
age_15	int	Aged 15 years
age_16_17	int	Age 16 to 17 years
age_18_19	int	Aged 18 to 19 years
age_20_24	int	Aged 20 to 24 years
age_25_29	int	Aged 25 to 29 years
age_30_34	int	Aged 30 to 34 years
age_35_39	int	Aged 35 to 39 years
age_40_44	int	Aged 40 to 44 years
age_45_49	int	Aged 45 to 49 years
age_50_54	int	Aged 50 to 54 years
age_55_59	int	Aged 55 to 59 years
age_60_64	int	Aged 60 to 64 years
age_65	int	Aged 65 years
age_66_69	int	Aged 66 to 69 years
age_70_74	int	Aged 70 to 74 years
age_75_79	int	Aged 75 to 79 years
age_80_84	int	Aged 80 to 84 years
age_85_pl	int	Aged 85 years and over

Legal Partnership Status

The legal partnership status variable topic is the same as the 2011 census variable "Marital status" but has been updated for Census 2021 to reflect the revised Civil Partnership Act that came into force in 2019 (including the addition of same sex and opposite sex categories).

divorced	int	Divorced
msnotapply	int	Does not apply
formciv	int	Formerly in a civil partnership now legally dissolved
civil_os	int	In a registered civil partnership: Opposite sex
civil_ss	int	In a registered civil partnership: Same sex
married_os	int	Married: Opposite sex
married_ss	int	Married: Same sex
single	int	Never married and never registered a civil partnership
sep_civ	int	Separated, but still in a registered civil partnership
sepmarried	int	Separated, but still married
survciv	int	Surviving partner from civil partnership
widowed	int	Widowed

Ethnicity

The ethnic group that the person completing the census feels they belong to. This could be based on their culture, family background, identity or physical appearance.

aabwbang	int	Asian, Asian British or Asian Welsh: Bangladeshi
aabwchin	int	Asian, Asian British or Asian Welsh: Chinese
aabwindia	int	Asian, Asian British or Asian Welsh: Indian
aabwoth	int	Asian, Asian British or Asian Welsh: Other Asian
aabwpak	int	Asian, Asian British or Asian Welsh: Pakistani
bbwcafr	int	Black, Black British, Black Welsh, Caribbean or African: African
bbwcacar	int	Black, Black British, Black Welsh, Caribbean or African: Caribbean
bbwcaoth	int	Black, Black British, Black Welsh, Caribbean or African: Other Black
mixedeth	int	Mixed Ethnicity variable has been calculated by grouping together the following ethnicity variables released by ONS: White and Asian, White and Black African, White and Black Caribbean, Other Mixed or Multiple ethnic groups
othereth	int	Other ethnic group variable has been calculated by grouping together the following ethnicity variables released by ONS: Arab and any other ethnic group
whitetot	int	White Total variable has been calculated by grouping together the following ethnicity variables released by ONS: White including: English, Welsh, Scottish, Northern Irish or British, Gypsy or Irish Traveller, Irish, Roma, Other White
whitebr	int	White British variable has been calculated by grouping together the following ethnicity variables released by ONS: White including: English, Welsh, Scottish, Northern Irish or British, Gypsy or Irish Traveller, Irish

Country of Birth

The country in which a person was born. For people not born in one of the four countries of the UK or the Republic of Ireland, there was an option to select "elsewhere". People who selected "elsewhere" were asked to write in the current name for their country of birth.

cobafrica	int	Africa
cobanocoth	int	Antarctica and Oceania (including Australasia) and Other
cobbriosea	int	British Overseas
cobeuother	int	Europe: EU countries: All other EU countries
cobeu14	int	Europe: EU countries: European Union EU14
cobeu2	int	Europe: EU countries: European Union EU2
cobeu8	int	Europe: EU countries: European Union EU8
cobnoneu	int	Europe: Non-EU countries: All other non-EU countries
cobuk	int	Europe: United Kingdom
cobmea	int	Middle East and Asia
cobamca	int	The Americas and the Caribbean

Religion

The religion people connect or identify with (their religious affiliation), whether or not they practise or have belief in it.

This question was voluntary and included people who identified with one of 8 tick-box response options, including "No religion", alongside those who chose not to answer this question.

rbuddhist	int	Buddhist
rchrist	int	Christian
rhindu	int	Hindu
rjewish	int	Jewish
rmuslim	int	Muslim
noreligion	int	No religion
noanswer	int	Not answered
otherrel	int	Other religion
rsikh	int	Sikh

Health

A person's assessment of the general state of their health from very good to very bad. This assessment is not based on a person's health over any specified period of time.

badhealth	int	Bad health
fairhealth	int	Fair health
ghealth	int	Good health
vbadhealth	int	Very bad health
vghealth	int	Very good health

Economic Activity

People aged 16 years and over are economically active if, between 15 March and 21 March 2021, they were in employment (an employee or self employed), unemployed but looking for work and could start within two weeks or unemployed but waiting to start a job that had been offered or accepted.

eaempft	int	Economically active (excluding full-time students): Employee: Full time
eaemppt	int	Economically active (excluding full-time students): Part-time
eaeself	int	Economically active (excluding full-time students): Self-employed has been calculated by grouping together the following variables: Self employed with employees full time, self employed with employees part time, self employed without employees full time and self employed without employees part time
eaunemp	int	Economically active (excluding full-time students): Unemployed
eafutist	int	Full time student variable has been calculated by grouping together the following variables: Economically active and a full-time student: Employee Full time, Employee Part time, Self employed without employees full time, Self employed without employees part time, Self employed with employees full time, Self employed with employees part time, Unemployed
eiltsdis	int	Economically inactive: Long-term sick or disabled
eihfam	int	Economically Inactive: Looking after home or family
eiioth	int	Economically inactive: Other
eiret	int	Economically inactive: Retired
eistu	int	Economically inactive: Student

Industry

Usual residents aged 16 years and over in employment the week before the census in England and Wales by industry.

agricult	int	A Agriculture, forestry and fishing
extractive	int	B Mining and quarrying
manufact	int	C Manufacturing
energysup	int	D Electricity, gas, steam and air conditioning supply
ind_dna	int	Does not apply
watersup	int	E Water supply; sewerage, waste management and remediation activities
construct	int	F Construction
retail	int	G Wholesale and retail trade; repair of motor vehicles and motor cycles
transport	int	H Transport and storage
accommfood	int	I Accommodation and food service activities
infocomms	int	J Information and communication
finserv	int	K Financial and insurance activities
propserv	int	L Real estate activities
proftech	int	M Professional, scientific and technical activities
administ	int	N Administrative and support service activities
pubaddef	int	O Public administration and defence; compulsory social security
education	int	P Education
health	int	Q Human health and social work activities
otherind	int	R, S, T, U Other

NS-SEC Grade

The National Statistics Socio-economic Classification (NS-SEC) indicates a person's socio-economic position based on their occupation and other job characteristics. It is an Office for National Statistics standard classification. NS-SEC categories are assigned based on a person's occupation, whether employed, self-employed, or supervising other employees. Full-time students are recorded in the "full-time students" category regardless of whether they are economically active.

nssecdna	int	Does not apply
l123hmapro	int	L1, L2 and L3: Higher managerial, administrative and professional occupations
l1011stec	int	L10 and L11: Lower supervisory and technical occupations
l12semrou	int	L12: Semi-routine occupations
l13routine	int	L13: Routine occupations
l14nwlune	int	L14.1 and L14.2: Never worked and long-term unemployed
l15ftstu	int	L15: Full-time students
l456lmapro	int	L4, L5 and L6: Lower managerial, administrative and professional occupations
l7inter	int	L7: Intermediate occupations
l89seoacc	int	L8 and L9: Small employers and own account workers

Qualifications

The highest level of qualification is derived from the question asking people to indicate all qualifications held, or their nearest equivalent. This may include foreign qualifications where they were matched to the closest UK equivalent.

lq_appren	int	Apprenticeship
lq_na	int	Does not apply
lq_level1	int	Level 1 and entry level qualifications: 1 to 4 GCSEs grade A* to C, Any GCSEs at other grades, O levels or CSEs (any grades), 1 AS level, NVQ level 1, Foundation GNVQ, Basic or Essential Skills
lq_level2	int	Level 2 qualifications: 5 or more GCSEs (A* to C or 9 to 4), O levels (passes), CSEs (grade 1), School Certification, 1 A level, 2 to 3 AS levels, VCEs, Intermediate or Higher Diploma, Welsh Baccalaureate Intermediate Diploma, NVQ level 2, Intermediate GNVQ, City and Guilds Craft, BTEC First or General Diploma, RSA Diploma
lq_level3	int	Level 3 qualifications: 2 or more A levels or VCEs, 4 or more AS levels, Higher School Certificate, Progression or Advanced Diploma, Welsh Baccalaureate Advance Diploma, NVQ level 3; Advanced GNVQ, City and Guilds Advanced Craft, ONC, OND, BTEC National, RSA Advanced Diploma
lq_level4	int	Level 4 qualifications and above: degree (BA, BSc), higher degree (MA, PhD, PGCE), NVQ level 4 to 5, HNC, HND, RSA Higher Diploma, BTEC Higher level, professional qualifications (for example, teaching, nursing, accountancy)
lq_no	int	No qualifications
lq_other	int	Other: vocational or work-related qualifications, other qualifications achieved in England or Wales, qualifications achieved outside England or Wales (equivalent not stated or unknown)

Students

The student variables indicate whether a person aged 5 years and over was in full-time education on Census Day, 21 March 2021. This includes schoolchildren and adults in full-time education. Schoolchildren and students in full-time education studying away from home are treated as usually resident at their term-time address.

edu_na	int	Does not apply
notstudent	int	Not a student
student	int	Student

Household Composition

Household composition variables classify households according to the relationships between members.

multoth	int	Multiple-family household: Other, including all full-time students and all aged 66 years and over
multdepkid	int	Multiple-family household: With dependent children
pens1pers	int	One person household: Aged 66 years and over
other1pers	int	One person household: Other
pensfamily	int	Single family household: All aged 66 years and over
condepkid	int	Single family household: Cohabiting couple family: All children non-dependent
conokid	int	Single family household: Cohabiting couple family: No children
codepkid	int	Single family household: Cohabiting couple family: With dependent children
lpndepkid	int	Single family household: Lone parent family: All children non-dependent
lpdepkid	int	Single family household: Lone parent family: With dependent children
mandepkid	int	Single family household: Married or civil partnership couple: All children non-dependent
madepkid	int	Single family household: Married or civil partnership couple: Dependent children
manokid	int	Single family household: Married or civil partnership couple: No children
singoth	int	Single family household: Other single family household: Other family composition

Accommodation Type

The type of building or structure used or available by an individual or household. The any converted building variable has been calculated to match the previous Geolytix Census data pack.

at_mobile	int	A caravan or other mobile or temporary structure
at_detach	int	Detached
at_comm	int	In a commercial building, for example, in an office building, hotel or over a shop
at_flat	int	In a purpose-built block of flats or tenement
at_anyconv	int	Any converted building variable calculated by grouping together the following variables released by ONS: Part of a converted or shared house, including bedsits or Part of another converted building, for example, former school, church or warehouse
at_othconv	int	Part of another converted building, for example, former school, church or warehouse
at_semdet	int	Semi-detached
at_terr	int	Terraced

House Tenure

Whether a household owns or rents the accommodation that it occupies. Owner occupied can be owned outright, owned with a mortgage or part-owned on a shared scheme.

ten_rentfr	int	Lives rent free
ten_ownout	int	Owned: Owns outright
ten_ownmort	int	Owned: Owns with a mortgage or loan
ten_proth	int	Private rented: Other private rented
ten_prllla	int	Private rented: Private landlord or letting agency
ten_so	int	Shared ownership: Shared ownership
ten_sroth	int	Social rented: Other social rented
ten_srrent	int	Social rented: Rents from council or Local Authority

Household Access to Cars

The number of cars or vans in an area relates only to households, this could include motor homes, pick-ups and camper vans. Vehicles that are kept at another address or not easily accessed are not included. Cars or vans used by communal establishment residents are not counted.

cva_1	int	1 car or van in household
cva_2	int	2 cars or vans in household
cva_3pl	int	3 or more cars or vans in household
cva_no	int	No cars or vans in household

Household Size

The number of people in the household. Visitors staying at an address do not count to that household's size.

pers1hhd	int	1 person in household
pers2hhd	int	2 people in household
pers3hhd	int	3 people in household
pers4hhd	int	4 people in household
pers5hhd	int	5 people in household
	int	6 or more people in household.
pers6plhhd		For England and Wales, '6 people in household', '7 people in household' and '8 or more people in household' variables have been grouped together to match the Northern Ireland census.

Approximated Social Grade

The modelled social grade for a household based on data from the 2021 National Readership Survey (NRS).

abhrp	int	Higher and intermediate managerial, administrative and professional occupations
c1hrp	int	Supervisory, clerical, and junior managerial, administrative and professional occupations
c2hrp	int	Skilled manual occupations
dehrp	int	Semi-skilled and unskilled manual occupations; unemployed and lowest grade occupations