

Using Curated Datasets

NOMIS: Official Labour Market Statistics

Royal
Geographical
Society
with IBG

Advancing geography
and geographical learning



www.nomisweb.co.uk/

What is NOMIS?

NOMIS is a collection of different sets of statistics that have been collated about the UK population. It is a service provided by the Office for National Statistics, so is to a large extent populated by statistics from the UK National Census. In addition, there are statistics collected openly by other national bodies such as the Business Register and Employment Survey and the Births and Deaths Register.



How do I access the data?

The above link is for the homepage of NOMIS. There are two ways of finding particular data. A **Query** allows the researcher to download data from a single data set in a spreadsheet for ease of sorting and gives them the scope to manipulate and present the data in different ways. Equally, researchers can look at all the statistics available for a local area of their choice by viewing a **Local**

Area Report which can be accessed through typing in a postcode or area name. Usefully, these results are displayed as both raw figures and percentages.

In a **Query**, one can select a dataset (from the list, left) and explore the statistics in more detail. For most students, the four years of census data are likely to be the most useful and understandable datasets to access. Each dataset selected brings up a further menu of possible sub-sets to explore.

The **Step by Step Guidance** talks the researcher through the process of drilling down into the data, firstly through the geographical area they wish to consider. There are a variety of scales to choose from, including super-output areas, parliamentary constituencies and smaller parishes and the map function allows researchers to zoom into particular areas. Once the geographical range of the data has been selected, one can choose exactly which variables within the dataset are going to be downloaded - a useful tool given that some datasets can be extremely comprehensive and somewhat overwhelming.

The data can then be **extracted and downloaded** into a variety of different spreadsheet formats from where data analysis can begin.

Data sets available

- Annual Civil Service Employment Survey
- Annual Population Survey/Labour Force Survey
- Annual Survey of Hours and Earnings
- Business Register and Employment Survey
- Census 1981
- Census 1991
- Census 2001
- Census 2011
- Claimant count
- DWP Benefits [discontinued in 2019]
- Jobcentre Plus Vacancies [discontinued in 2012]
- Jobs density
- Jobseekers Allowance
- Life events
- Population Estimates/Projections
- Regional Accounts
- UK Business Counts
- VAT Registrations & Stocks [discontinued in 2007]
- Workforce Jobs



How can I use this in my teaching?

The volume and quality of data held on NOMIS is so vast and comprehensive that its use in the classroom is extremely wide-ranging. Any investigation of UK place can be bolstered by the use of real (and in most cases very up-to-date) statistics on the nature of that location, its people and its future.

Before commencing the study of a new UK location, it can be useful for students to undertake a fact finding mission using the NOMIS website. Data on population size, population characteristics (such as socio-economic indicators) as well as how these statistics have changed over time allow students to develop a greater understanding of place and have a good grounding on which to base any further understanding of relationships with other geographical phenomena being studied.

It is also important that students are able to think about and recognise the ways in which the data has been collected and the impact this may have on the quality and quantity of the data itself, as well as what the future of the UK Census might look like. Students can investigate the methods used to collect census data both in this country and elsewhere and assess the degree to which the data on the NOMIS site is accurate and the reasons there might be for any inaccuracy. Students should be able to critique the data and identify gaps in the subsets of data available in different years.



Curriculum Links

This curated dataset links to a number of parts of the National Curriculum and is relevant to GCSE and A Level Specifications.

Key Stage Three: An understanding, through the study of place, of the key processes in population, urbanisation and economic activity.

GCSE: A recognition of the inter-relationships between places at a range of scales.

A knowledge and understanding of the UK's geography including its changing economy and society.

An understanding of the impacts of national and international migration on the growth and character of cities and the political and social context within which a country is placed.

A Level: A knowledge and understanding of the local place within which students live or study.

An understanding of the changing demographic and cultural characteristics of place and the economic changes and social inequalities found there.

An understanding of how the demographic, socio-economic and cultural characteristics of places are shaped by shifting flows of people at a range of scales.

The following specifications make particular reference to the use of census data as a learning tool:

GCSE:		A Level:	
Cambridge iGCSE	Edexcel B	AQA	OCR
Edexcel A		Eduqas	



An example data walk-through

A student is wishing to study a particular area of London and is interested to find out more about how the number of people in the Polish community there has increased since Poland joined the EU in 2004. They want to use the data from the NOMIS site to find data for the numbers of people who identify as Polish and live in Croydon in the two censuses either side of the 2004 ascension - those in 2001 and 2011.

First, the student goes to the **Query** section of the NOMIS website and selects **Census 2001**. They then select the **Univariate Statistics** (those that involve the study of just one variable), and from there the dataset relevant for this study - in this case, the **UV008 - Country of birth** data set.

The student then uses the step-by-step guide (selecting **Begin first step of guidance**) to allow them to more easily navigate the data available to them. The map tool allows them to drill down to the appropriate geographical area (first selecting Greater London and then selecting **Croydon Local Authority (District)**).

On the next page the student selects the country of birth being investigated - in this case, **Poland**, and on the subsequent page, the format in which the data is presented digitally. This student simply requires the raw data so a simple spreadsheet is sufficient.

The website then extracts the relevant data for the student to use. Opening the spreadsheet shows that there were **714 people who identified as Polish living in Croydon in 2001**.

A similar method is then used to find the same data in 2011. Under a new query the **Census 2011** data set is selected along with the **Quick Statistics** subset titled **QS203EW - Country of birth (detailed)**.

Selecting the same map area (Croydon) and Poland under the country of birth selection allows the student to see comparable data when it is extracted and downloaded. In this case, **5,233 people identified themselves as Polish and living in Croydon in 2011**.

The student then realises that additional information may make the data more interesting to interpret and they wonder if the Polish community in Croydon displays any interesting additional characteristics such as gender disparity, educational status or the potential for socio-economic mobility.

The student returns to the **Query** section of the website and under the **Census 2011** menu finds a huge range of data subsets under **Detailed Characteristics**. These datasets combine more than one variable together to allow the student to investigate a geographical idea in more depth and add extra layers of meaning to their investigation. For example, the following subsets of data are available:

- **DC2103EW - Country of birth by sex by age**
- **DC2122EW - Country of birth by number of children in family**
- **DC2207EW - Country of birth by religion by sex**
- **DC5203EW - Highest level of qualification by country of birth by age**

The student can also use the same method to compare the Polish community in Croydon with other London boroughs, or to compare the Polish community in Croydon with other migrant communities from the 2004 Ascension countries.



Suggested delivery activities

Urban transects

Students can develop hypotheses about how the economic characteristics of a large urban area may change as one moves along a mapped transect from the CBD to the outer suburbs. Each student can select a different dataset (which separately has to be justified as an indicator of economic status) and extract and download data for a number of wards or sub-divisions of Built Up Areas (BUAs) at different points along the transect.

Students can then choose an appropriate proportional symbol to geolocate their data on a map and analyse the extent to which their initial hypotheses were correct. Students can try to find reasons for any anomalies and predict how future maps of this kind might look.



Correlation or Causation?

In pairs, students download two data sets. Student A's dataset should represent the social character of a place while Student B's should represent a place's economic character. Data is then extracted for ten different locations and a scatter graph of the data is plotted.

The students should then work out if the graph shows a correlation between the data sets and its relative strength. Where there is no correlation students might like to speculate whether they are considering enough samples. Then students can use their geographical knowledge and understanding to find reasons for any correlation (or for any lack of one).



Future Cities

Students should choose a dataset from the UK census data covering all four of those listed (1981 to 2011), such as total population of a location or the level of employment. Using a line graph, this can then be plotted and students can comment on the general trend they see in their data over the thirty year period that it covers.

Students can then consider the future trend and where they think a plot for the 2021 census might fall. This introduces the idea of extrapolating data and the equal importance of applying geographical reasoning to such a task. Students can also discuss the accuracy of interpolating data between the ten year periods.



Location Quotients

Location Quotients calculate the level of concentration of a variable (such as different age groups of a population) in a small area (such as a city ward) and compare it with that variable found at a larger spatial area (such as the larger city). It can be expressed as a ratio or as a single calculated figure.

In this case, a particular variable could be downloaded for different city wards, allowing them to be compared through location quotients with each other, or data for one variable in one city ward could be downloaded from each of the four census data sets and compared through location quotients with itself. A guide to Location Quotients appears on the next page.





A Guide to Calculating Location Quotients using Census Data

A location quotient measures how concentrated a particular geographical variable is in a particular location. It compares the chosen variable in a small area with that of the larger spatial area within which that location sits. It is expressed as a single figure and compared to the nominal value of 1 given to the larger spatial area. So, if the location displays a greater concentration of the variable compared to the larger space, it would have a value greater than 1. Geographers best use location quotients to compare more than one smaller locations with each other (and the larger area in which they sit) or to investigate how a concentration changes over time compared to how the concentration of the variable found within the larger area changes over time.

Using the data from the NOMIS site a student might compare the number of people who identify as Polish in the London borough of Croydon to those in the whole of London and see how this concentration has changed between the 2001 and the 2011 censuses.

Worked example:

The relevant data was extracted and downloaded from the NOMIS site.

	Number of Polish people (V)	Total number of people (T)
Croydon 2001	714 (v ₁)	330,587 (t ₁)
Croydon 2011	5,233 (v ₂)	363,378 (t ₂)
Greater London 2001	22,224 (V ₁)	7,172,091 (T ₁)
Greater London 2011	158,300 (V ₂)	8,173,941 (T ₂)

The following formula was then used to calculate the location quotient (LQ) for each of the years.

$$LQ = \frac{(v_x / t_x)}{(V_x / T_x)}$$

$$LQ (2001) = \frac{(714 / 330587)}{(22224 / 7172091)} \quad LQ (2001) = 0.69$$

$$LQ (2011) = \frac{(5233 / 363378)}{(158300 / 8173941)} \quad LQ (2011) = 0.74$$

These location quotient figures tell us that the concentration of Polish people in Croydon is unrepresentative of Greater London as a whole. As the location quotient figures are both below 1 (which is the value assigned to Greater London), this indicates that the borough of Croydon is less concentrated in people who identify as Polish than London more widely.

The location quotient value for Polish people in Croydon has increased between 2001 and 2011 indicating that the concentration of Polish people in Croydon compared to London as a whole has increased, suggesting that in that ten year period, Croydon has seen a disproportionate increase in Polish people compared to other boroughs.