Working with the 2011 Irish Census of Population Figures

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Abstract

The most recent Irish Census of Population was completed in April 2011. In addition to the statistics produced in previous censuses, this one also provides figures for small areas with between 50 and 200 dwellings. This small area data may be used either alone or in conjunction with the data for larger areas, such as towns or for the whole country. This paper outlines some possible uses of this data both for Junior Certificate and for Leaving Certificate Students. Of course, the data would also be of use for work in Transition Year as well.

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Introduction

While many people suggest that the figures produced by the Central Statistics Office [CSO] based on the results of the Census of Population should be used in class, the possibilities of those for the most recent Census have not yet been fully explored in many schools. The data may be used in the Junior Certificate programme particularly in relation to Unit B1: Population – distribution, diversity and change; Key idea (iii) which involves study at both a local level and at a national level of the characteristics of population groupings. Use of these data would also facilitate the development of a number of skills, such as drawing and interpreting graphs and various numerical skills.

In the Leaving Certificate Programme there is a specific reference to the need for students to study recent census returns for Ireland and to study the demographic structure of the population. The use of these data would also, presumably, be of relevance to the 2013 Geographical Investigation topic of a local demographic study and, no doubt, to other similar topics in the future.

Current JC geography programme (Education, n.d.)	LC Geography programme (Education and Skills, 2003)	Revised Junior Cycle programme [Key skills] (Education and Skills, 2012)
Use and interpretation of information sources: figures, statistics, electronic	Information gathering: figures, statistics, ICT	Literacy
Presentation and communication of ideas: figures, statistics, written	Presentation and communication of ideas: figures, statistics, written	Numeracy
Collecting, recording, analysing, interpreting information	Investigative skills: using secondary sources of information	Managing information and thinking
Synthesising and evaluating information	Synthesise, analyse, interpret and evaluate information	Working with others
Social skills: working alone, in groups, teamwork, verbal communication	Social skills: working alone, in groups, teamwork, verbal communication	Communicating
		Using digital technology

Table 1: Skills potentially developed using SA Census data

of a wide number the skills which are identified as objectives for both the Junior Certificate and Leaving Certificate Geography courses and also in the list of 'Key Skills' identified in the new Junior Cycle programme, as shown in Table 1.

What Are Small Areas (SAS)?

'Small Areas are areas of population comprising between 50 and 200 dwellings created by The National Institute of Regional and Spatial Analysis (NIRSA) on behalf of the Ordnance Survey Ireland (OSi) in consultation with CSO. Small Areas were designed as the lowest level of geography for the compilation of statistics in line with data protection and generally comprise either complete or part of townlands or neighbourhoods' (CSO, 2013). In urban areas these SAs are often specific estates or clearly designated parts of estates, making it very easy for student to identify their specific home place. In more rural areas the SA is likely to cover a larger area, but by zooming into the area, students find it easy to identify the correct area. The same categories of information are available for the SAs as for the State, and other areas in the country [Table 2].

Theme 1:	Sex, age and marital status
Theme 2:	Migration, Ethnicity and Religion
Theme 3:	Irish language
Theme 4:	Families
Theme 5:	Private Households
Theme 6:	Housing
Theme 7:	Communal Establishments
Theme 8:	Principal Status
Theme 9:	Social Class and Socio-Economic Group
Theme 10:	Education
Theme 11:	Commuting
Theme 12:	Disability, carers and general health
Theme 13:	Occupation
Theme 14:	Industries
Theme 15:	PC and Internet Access

Table 2: Statistics available for Small Areas

The SA data is readily available from the CSO website – at http://www.cso.ie/en/census/ and the tables of statistics are readily downloadable as Excel files, which may be used on virtually any computer. If you know the location exactly, the zoom tool may be used to find the relevant SA. However, it is very easy to find the SA using the <Find your address> tool. This is explained here.

Finding An SA

a. In the <CSO Boundary Layers> box select <Small Areas> [Figure 1]

b. Click on the red <Find your address> pin

c. Type at least part of your home address in the <Find your address> dialogue box

   If you live in a rural area, type in the name of your townland followed by a comma[,] and it should appear. You do need to know your home county for this to work!!!!

d. Scroll down the list of alternatives and click on the correct one.
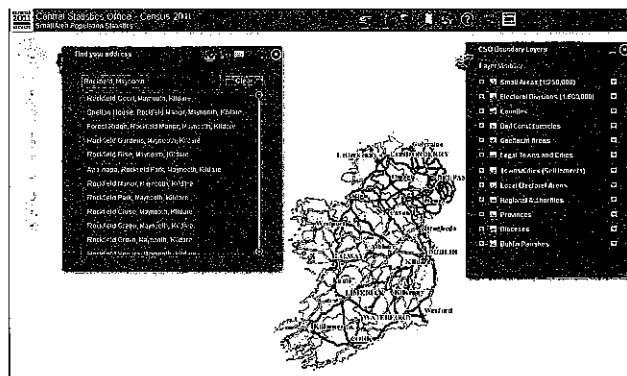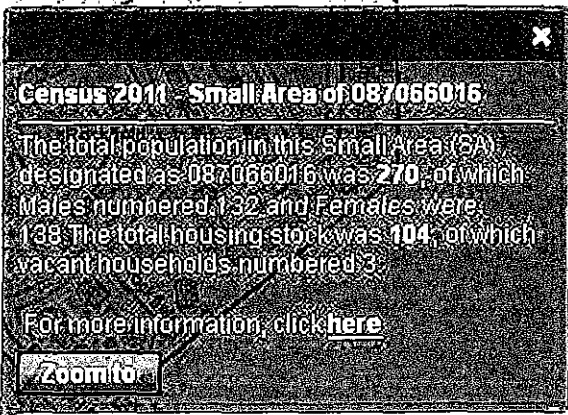

Figure 1: Finding SA statistics [image courtesy of CSO, 2013]

e. A map showing the exact location of the street/townland will normally appear.

f. If you have identified a particular road, then you should double click on the red pin and then a map outlining the relevant SA plus a small information board giving basic data about the SA [Figure 2].

g. Click on the word here and map outlining the area plus a list of <Themes> (those shown in Table 1) will then appear, such as Figure 3.

h. Below the Themes list all of the data for the SA is shown.

Census 2011 - Small Area of 087066016

The total population in this Small Area (SA), designated as 087066016 was **270**, of which Males numbered **132** and Females were **138**. The total housing stock was **104**, of which vacant households numbered **3**.

For more information, click **here**

Zoom to

i. To download this to an Excel file, click on the <Excel> symbol and follow the instructions on screen
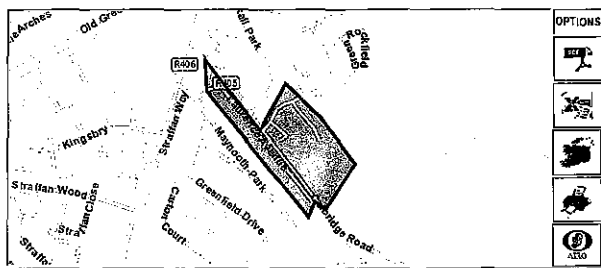
Small Area 087066016 (CSO Area Code SA 087066016)
- Theme 1: Sex, age and marital status
- Theme 2: Migration, Ethnicity and Religion
- Theme 3: Irish language
- Theme 4: Families
- Theme 5: Private Households
- Theme 6: Housing
- Theme 7: Communal Establishments
- Theme 8: Principal Status
- Theme 9: Social Class and Socio-Economic Group
- Theme 10: Education
- Theme 11: Commuting
- Theme 12: Disability, carers and general health
- Theme 13: Occupation
- Theme 14: Industries
- Theme 15: PC and Internet Access

Figure 3: The SA data [image courtesy of CSO]

The information may now be graphed or presented as tables in exactly the same way as any other data in an Excel file.

Using The Data

a. Use the Sex, age and marital status data to draw a population pyramid for the SA.

The most obvious use of the CSO data is to draw a population pyramid for the SA and use this for comparisons within the local area, e.g. the ED, town or county or with national figures. Drawing a population pyramid using Excel is a fairly straightforward process, although it may be somewhat complicated for those who are unused to using Excel for drawing charts. If you wish to do this a search using the terms < drawing a population pyramid with excel> will provide guidance (but you may need to look beyond the first choice to find one which you understand!!). However, if this is not possible for your students then they can draw their own pyramid using a prepared template [See Worksheet 1] or on graph paper and you can supply them with the others. Even though hand drawing a pyramid does not develop students ICT skills it does use numerical and graph drawing skills and the same graph interpretation skills will be used whatever the technique for drawing a pyramid.

Alternative exercise

This exercise may be used with pyramids from other countries rather than those for Ireland, such as Brazil or Germany – as used in many text books. A good source of pyramids from other countries is The United States Census Bureau: International programmes which include population data for countries of the world and include both past years and future predictions up to 2050 (USCensus, n.d.) . This could also provide an alternative class exercise, in which the present population pyramid for Ireland is compared with either past or future data. Other information is also available – check the drop down menu < Select Report> to investigate the possibilities.

b. Using other SA data

All of the other themes could be used for comparisons between a student's home SA and their local ED, County, Province or the State. Selection of particular themes might be left to students themselves or selected by the teacher. A basic format for using this data is shown in Worksheet 2. As shown in Table 1, work with these data may develop a wide range of skills.

If group working skills is one of those to be developed a team of students should agree on which aspects they want to investigate, as this would enable comparisons to be made between SAs as well as with figures for larger areas – of course it would be important for each student to come from a different SA! It is also recommended that a check is made by the teacher to ensure that the data have sufficient variation between different SAs. For example, Private Households by type of accommodation may be virtually all of the same type (usually house/bungalow)in the different SAs in some areas.

The amount of work using Excel can be modified to take account of the students' experience in using the programme. For example, for less experienced students a spreadsheet template could be prepared which would

carry out all the required calculations and provide the students with a straightforward table from which the graph may be produced [See on-line resources: SAcalculations.xls]. For those with more experience, this is an opportunity to use functions and do all of the calculations for themselves. An example of the type of graph which might be produced is shown as Figure 4, which uses data for age of housing.

Figure 4: Age of housing in 2011
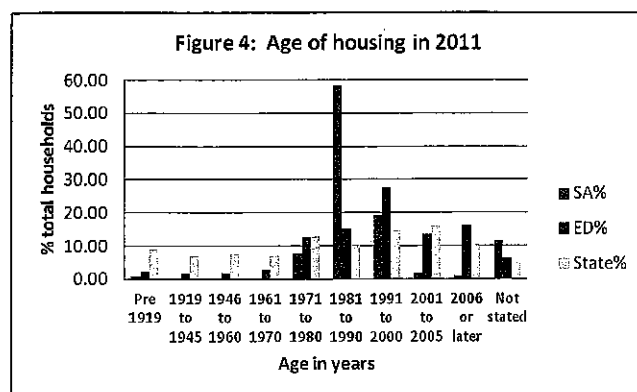
Conclusions

The use of the SA statistics from the 2011 Census of Population provides a way to make geography immediately relevant by enabling students to learn about their home area, and to make comparisons with that provided for larger areas, such as town, county or the State. The up-to-date nature of the data also facilitates students consideration of reasons for distributions in the classroom.

This paper only touches the surface of ways in which the 2011 Census data can be used. The 2011 Census website also provides other possible sources of up-to-date information about Ireland and its regions, for example area profiles are available (for the Counties, Dáil Constituencies or towns with over 1000 population). Another useful source of information is the All Ireland Research Observatory [AIRO] database [click on the AIRO button on the SA web page [See Figure 1] where there are GIS maps available for a wide variety of options, such as level of deprivation, in addition to the Census variables.

While Internet access and other IT issues may limit use of the Census data in some schools, it is possible to bring this up-to-date and relevant information into almost all geography classrooms in some way or another. The present report suggests a limited number of possibilities, but there is so much more possible once a basic understanding is gained. Go on and explore!

References

Education, Department of (n.d.) *The Junior Certificate: Geography Syllabus,* Dublin, The Stationery Office.

Education and Skills, Department of (2003) *Leaving Certificate: Geography Syllabus,* Dublin, Department of Education and Skills

Education and Skills Department of 2012) *A framework for Junior Cycle,* Dublin, The Stationery Office.

United States Census Bureau (n.d.) *International Data Base,* Washington, D.C., U.S.A.

http://www.census.gov/population/international/data/idb/informationGateway.php [accessed 19/8/13]

Appendix

Worksheet 1: Population Pyramids *(see box overleaf)*

1. Use the figures from the Age, sex and marital status table for your home area to complete this table

2. Add together the number of boys aged between 0 and 4 years and write the total in the correct space shaded like this.

3. Add together the number of girls aged between 0 and 4 years and write the total in the next space along the row.

4. Then find the totals for both males and females between 5 and 9 years, 10 and 14 years, and 15 to 19 years. Write your answers in the correct boxes.

5. Complete the table by copying the rest of your figures from the spreadsheet.

6. Use the outline below here to draw a population pyramid for your own SA.

Age group [years]	Male	Female	Total people
0-4			
5-9			
10-14			
15-19			
20-24			
25-29			
30-34			
35-39			
40-44			
45-49			
50-54			
55-59			
60-64			
65-69			
70-74			
75-79			
80-85			
85+			

Population of _____, 2011		
85+		
80-85		
75-79		
70-74		
65-69		
60-64		
55-59		
50-54		
45-49		
40-44		
35-39		
30-34		
25-29		
20-24		
15-19		
10-14		
5-9		
0-4		
	Males	Females

You should look at the pyramid which you have been given to show you how this should be done.

Check the age group carefully – the pyramid is 'upside-down' compared to the Census figures!!

Use your finished pyramid and the other[s] provided to answer the questions below.

7. Complete the table below. Write in the name of your own small area in the spwre is says 'My small area is' and the name of your home town in the space 'My home town is:'

	My small area is:	My home town is:	Ireland
Age group[s] with most people in total			
Age group[s] with least people in total			
Age group[s] with most women			
Age group[s] with most men			
Age group[s] with fewest women			
Age group[s] with fewest men			

For these questions

8. How is my SA's population like that of other places?

a. our home town;

One way in which the population of my SA is like that of our home town is that

Another way in which the population of my SA is like that of our home town is that

b. Ireland.

One way in which the population of my SA is like that of Ireland is that

Another way in which the population of my SA is like that of Ireland is that

9. How is my SA's population different from that of other places?

a. our home town;

One way in which the population of my SA is different from that of our home town is that

Another way in which the population of my SA is different from that of our home town is that

b. Ireland.

One way in which the population of my SA is different from that of Ireland is that

Another way in which the population of my SA is different from that of Ireland is that

10. (a) Write two sentences suggesting reasons for the similarities and differences between your SA and the town as a whole.

    (b) Write two sentences suggesting reasons for the similarities and differences between your SA and the State.

Worksheet 2: Working with other SA Data

Note for the teacher – this example uses age of housing data, but the same format may be used for other data if the final section on the interpretation of the data is rewritten.

1. Write down the first theme you have chosen to explore here _____

   The theme name is the TITLE of the table!

2. Copy the data table for your home SA from the CSO SAPMAP site and paste it into an Excel file.

3. Copy the corresponding data table for your home ED from the CSO SAPMAP site and paste it into the same Excel spreadsheet as the SA information.

4. Copy the corresponding data table for the State from the CSO SAPMAP site and paste it into the same Excel spreadsheet as the SA information.

So that you can compare information from different sizes of area, you must now calculate the percentage of the total 'population' for each category.

Note for the teacher – if your students are experienced Excel users then they can calculate the percentage totals for themselves. However, a template – where students just enter the data into the spreadsheet and the calculations are done automatically – is quite easy to create –see on-line resource .

5. Copy the figures from your spreadsheet into the correct place in the template file. This will automatically calculate the percentage for each size of area.

6. Use your percentage figures to draw a bar chart (called a 2-D column chart) in Excel.

7. 'Don't forget to label your bar chart so that people know what it shows.

8. Use your bar chart to complete the task below:

Note for the teacher –the format of the data interpretation task may be varied to suit the age, experience and abilities of students. This can range from cloze tasks, through short questions to an extended writing task.

Sample Cloze task

Either fill in the blanks or cross out whichever word does not apply in the sentences below

Describing my home SA

a. The most common age for houses in my home SA is _____, with _____% [percent] of all houses being of this age group.

b. There are fewest houses in my home SA in the _____, with _____% [percent] of all houses being of this age group.

Comparing my home SA with the whole ED

a. The most common age for houses is the same/ different for my home SA and my home ED.

b. If the age group is different write down which is the most common age for your ED here _____.

c. In my ED the percentage is _____.

d. The least common age for houses is the same/ different for my home SA and my home ED.

e. If the age group is different write down which is the least common age for your ED here _____.

f. In my ED the percentage is _____.

Comparing my home SA with the State [the whole of Ireland]

g. The most common age for houses is the same/ different for my home SA and for the State.

h. If the age group is different write down which is the most common age for the State here _____.

i. In the State the percentage is _____.

j. The least common age for houses is the same/ different for my home SA and for the State.

k. If the age group is different write down which is the least common age for the State_____.

l. In the State the percentage is _____.

m. Write two sentences explaining why there are similarities between the housing age profile of your SA and that of the whole of your ED.

n. Write two sentences explaining why there are similarities between the housing age profile of your SA and that of the whole State.

Sample Short questions

a. State two similarities between your home SA and:
   i. Your home ED
   ii. the State [all of Ireland]

b. State two differences between your home SA and:

i. Your home ED

ii. the State [all of Ireland]

c. Write two sentences explaining why there are similarities between the housing age profile of your SA and that of the whole of your ED.

d. Write two sentences explaining why there are similarities between the housing age profile of your SA and that of the whole State.

Sample extended writing task

Use the percentage table and the bar chart which you have drawn to compare the housing age profile of your home SA with:

a. that of your home ED

b. that of the State [all of Ireland].

Points to help you

You will need to make sure you look at both similarities and differences.

You need to think about explanations for the similarities and differences, not just state them

Remember to quote figures to support what you write BUT make sure you select relevant figures. Don't just copy out lots of figures from the table or from your bar chart!!