



**DUBLIN INSTITUTE  
of TECHNOLOGY**  
*Institiúid Teicneolaíochta Bhaile Átha Cliath*

# **Geographical Information Systems**

## **Assignment 2 – Census Data**

**DT228**

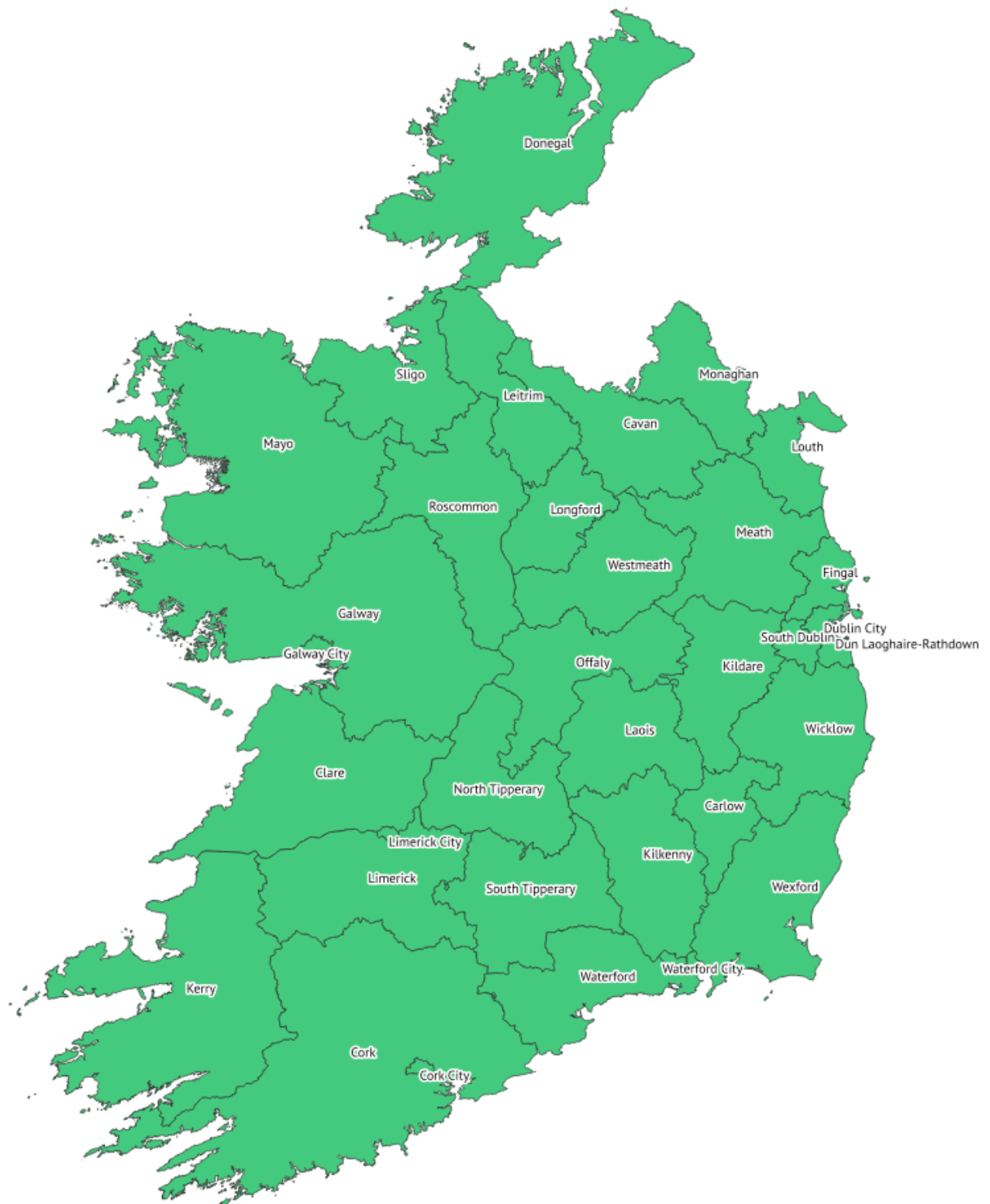
**BSc in Computer Science**

**Paul Petrisor**

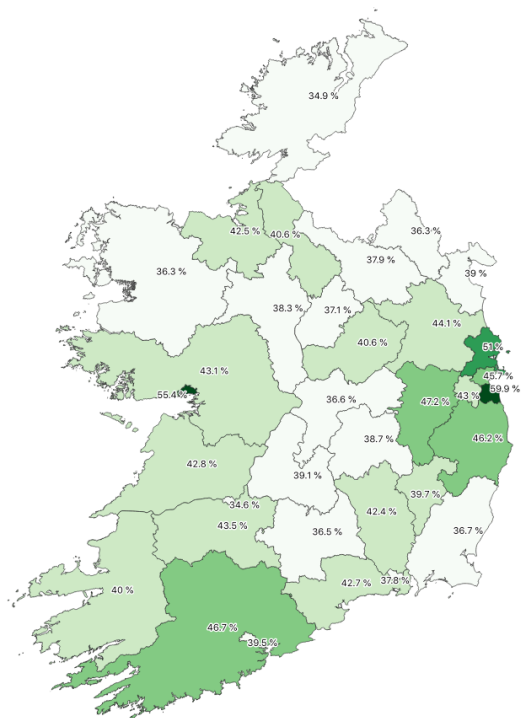
School of Computing  
Dublin Institute of Technology  
05<sup>th</sup> May 2019



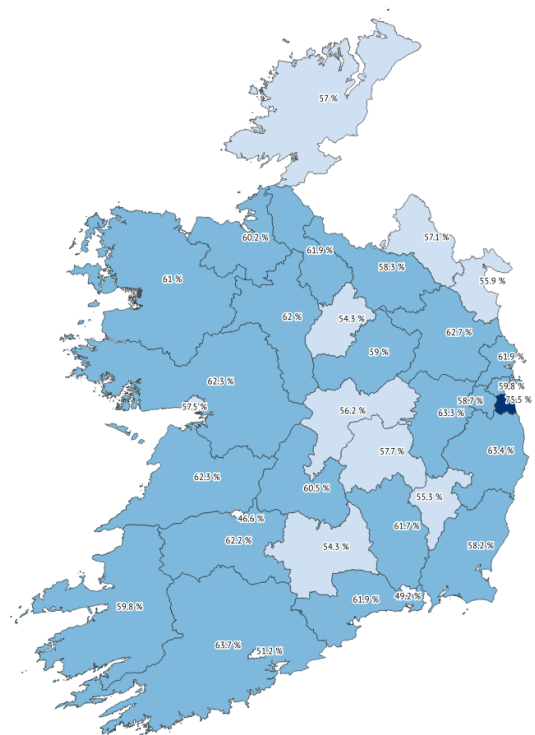
The map used for the assignment is divided into 29 counties and five Cities representing the local authority areas. There are 26 administrative counties outside Dublin and 4 Cities, Cork, Limerick, Waterford and Galway. Dublin is divided into 4 local authority areas, Dublin City, Fingal, South Dublin and Dún Laoghaire-Rathdown.



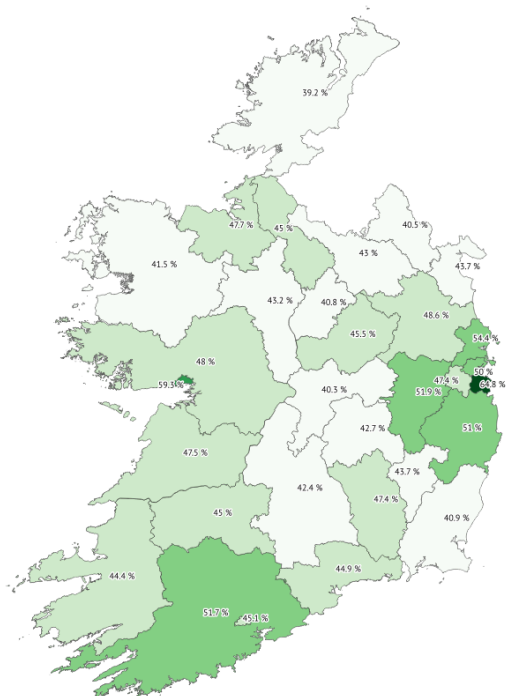
# Educational achievements vs. employment prospects



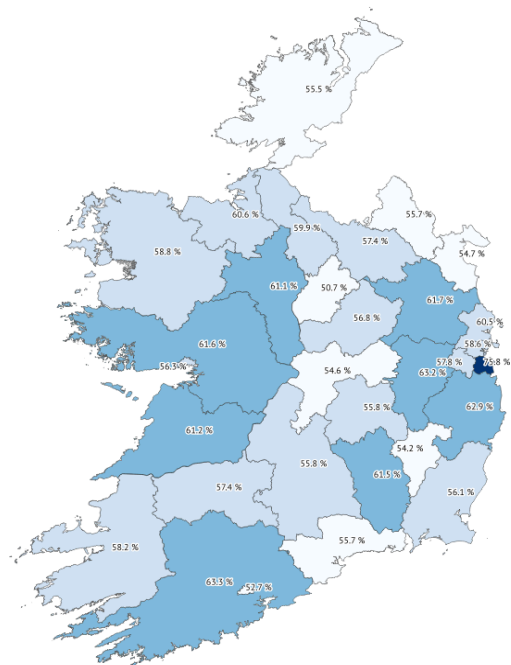
Third level holders 2011



Skilled occupations 2011



Third level holder 2016



Skilled occupations 2016

The image above presents the third level education holders and skilled workers in Irish counties between 2011 and 2016. The scope is to find if there is a correlation between higher education and employment prospects for highly skilled people.

Third level education is considered any studies completed after secondary school. The data used for this is Technical or Vocational qualification Advanced Certificate/Completed Apprenticeship, Higher Certificate, Ordinary Bachelor Degree or National Diploma, Honours Bachelor Degree, Professional Qualification or both, Postgraduate Diploma or Degree and Doctorate(PhD) or higher.

Skilled occupations are considered occupations that require one form of higher education. These occupations include Manager, Directors, Professional, Associate Professional, Technical, Administrative, Secretarial and other Skilled occupations.

Between 2011 and 2016 was a 5% average national increase in third level education holders. On the other side, the skilled jobs occupancy remains at the same levels or dropped slightly in some areas. This proves that there is no correlation between education achievements and employment prospects.

Given that the unemployment rate also dropped by a national average of around 6 per cent from 2011 to 2016, it means that highly qualified people are working in positions they are over-qualified for.

Map of Ireland showing the percentage of the population aged 65 and over in each county for 2006. The map uses a color scale from light orange (lowest percentage) to dark red (highest percentage). The highest percentages are in Dublin (49.9%) and Wick (35.9%).

County	Percentage (%)
Carlow	21.2
Cavan	26.8
Clackmannanshire	23.5
Clackmannanshire	20.3
Clackmannanshire	23.5
Clackmannanshire	22.5
Clackmannanshire	26.8
Clackmannanshire	23.3
Clackmannanshire	22.7
Clackmannanshire	19.4
Clackmannanshire	24.7
Clackmannanshire	26.4
Clackmannanshire	33.9
Clackmannanshire	35.9
Clackmannanshire	49.9
Clackmannanshire	27.7
Clackmannanshire	30.7
Clackmannanshire	29.4
Clackmannanshire	21
Clackmannanshire	19.8
Clackmannanshire	25.3
Clackmannanshire	21.3
Clackmannanshire	19.2
Clackmannanshire	24.3
Clackmannanshire	25.2
Clackmannanshire	23.4
Clackmannanshire	29.1
Clackmannanshire	29.1
Clackmannanshire	28.2
Clackmannanshire	41.2

Dún Laoghaire-Rathdown recorded 49.9% and Galway City 41.2% of their occupants as holding such a qualification.

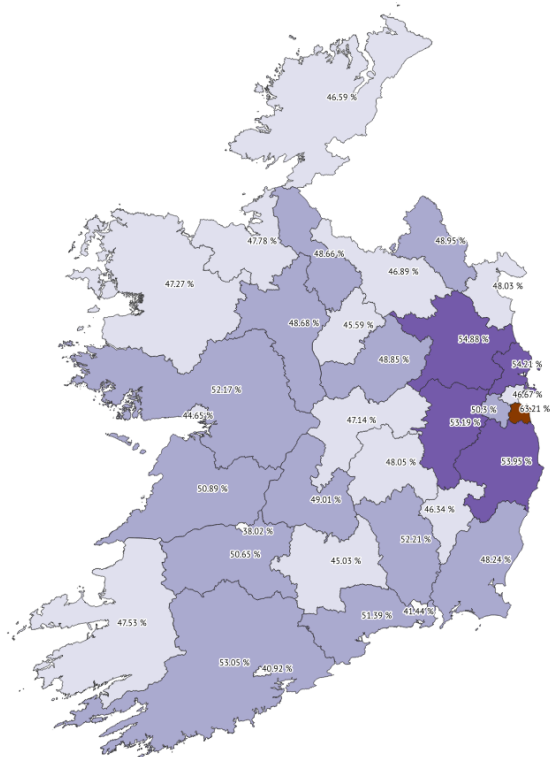
The figure consists of two maps of Ireland, each showing the percentage of the population aged 65 and over in 2006. The left map displays data by county, while the right map displays data by region. The maps use a color scale from light green (lower percentages) to dark green (higher percentages) to represent the age distribution. The left map shows a higher overall percentage of the population aged 65 and over compared to the right map, with several counties exceeding 20%.

**County-level data (Left Map):**

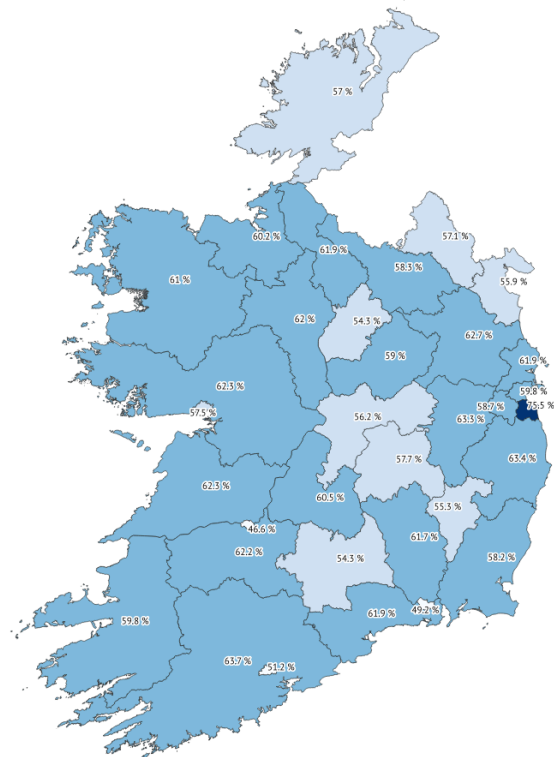
County	Percentage (%)
Donegal	26.2
Sligo	23.8
Galway	20.6
Mayo	20.5
Leitrim	21.2
Fermanagh	21.4
Monaghan	21.4
Louth	23.2
Westmeath	23.5
Longford	24
Wexford	25.1
Wick	24.7
Carlow	24.7
Waterford	24.7
County Kerry	24.7
County Cork	24.7
County Clare	24.7
County Tipperary	24.7
County Limerick	24.7
County Dublin	24.7
County Wick	24.7
County Wexford	24.7
County Carlow	24.7
County Waterford	24.7
County Kerry	24.7
County Cork	24.7
County Clare	24.7
County Tipperary	24.7
County Limerick	24.7
County Dublin	24.7
County Wick	24.7
County Wexford	24.7
County Carlow	24.7
County Waterford	24.7
County Kerry	24.7
County Cork	24.7
County Clare	24.7
County Tipperary	24.7
County Limerick	24.7
County Dublin	24.7
County Wick	24.7
County Wexford	24.7
County Carlow	24.7
County Waterford	24.7
County Kerry	24.7
County Cork	24.7
County Clare	24.7
County Tipperary	24.7
County Limerick	24.7
County Dublin	24.7
County Wick	24.7
County Wexford	24.7
County Carlow	24.7
County Waterford	24.7
County Kerry	24.7
County Cork	24.7
County Clare	24.7
County Tipperary	24.7
County Limerick	24.7
County Dublin	24.7
County Wick	24.7
County Wexford	24.7
County Carlow	24.7
County Waterford	24.7
County Kerry	24.7
County Cork	24.7
County Clare	24.7
County Tipperary	24.7
County Limerick	24.7
County Dublin	24.7
County Wick	24.7
County Wexford	24.7
County Carlow	24.7
County Waterford	24.7
County Kerry	24.7
County Cork	24.7
County Clare	24.7
County Tipperary	24.7
County Limerick	24.7
County Dublin	24.7
County Wick	24.7
County Wexford	24.7
County Carlow	24.7
County Waterford	24.7
County Kerry	24.7
County Cork	24.7
County Clare	24.7
County Tipperary	24.7
County Limerick	24.7
County Dublin	24.7
County Wick	24.7
County Wexford	24.7
County Carlow	24.7
County Waterford	24.7
County Kerry	24.7
County Cork	24.7
County Clare	24.7
County Tipperary	24.7
County Limerick	24.7
County Dublin	24.7
County Wick	24.7
County Wexford	24.7
County Carlow	24.7
County Waterford	24.7
County Kerry	24.7
County Cork	24.7
County Clare	24.7
County Tipperary	24.7
County Limerick	24.7
County Dublin	24.7
County Wick	24.7
County Wexford	24.7
County Carlow	24.7
County Waterford	24.7
County Kerry	24.7
County Cork	24.7
County Clare	24.7
County Tipperary	24.7
County Limerick	24.7
County Dublin	24.7
County Wick	24.7
County Wexford	24.7
County Carlow	24.7
County Waterford	24.7
County Kerry	24.7
County Cork	24.7
County Clare	24.7
County Tipperary	24.7
County Limerick	24.7
County Dublin	24.7
County Wick	24.7
County Wexford	24.7
County Carlow	24.7
County Waterford	24.7
County Kerry	24.7
County Cork	24.7
County Clare	24.7
County Tipperary	24.7
County Limerick	24.7
County Dublin	24.7
County Wick	24.7
County Wexford	24.7
County Carlow	24.7
County Waterford	24.7
County Kerry	24.7
County Cork	24.7
County Clare	24.7
County Tipperary	24.7
County Limerick	24.7
County Dublin	24.7
County Wick	24.7
County Wexford	24.7
County Carlow	24.7
County Waterford	24.7
County Kerry	24.7
County Cork	24.7
County Clare	24.7
County Tipperary	24.7
County Limerick	24.7
County Dublin	24.7
County Wick	24.7
County Wexford	24.7
County Carlow	24.7
County Waterford	24.7
County Kerry	24.7
County Cork	24.7
County Clare	24.7
County Tipperary	24.7
County Limerick	24.7
County Dublin	24.7
County Wick	24.7
County Wexford	24.7
County Carlow	24.7
County Waterford	24.7
County Kerry	24.7
County Cork	24.7
County Clare	24.7

- The dataset considered for this exercise was *people looking for first regular job and unemployed people having lost or given up the previous job*. Retired people, children, students and people with disabilities unable to work have been excluded from the equation, as they are not considered to actively seeking work.
- Between 2011 and 2016 unemployment levels dropped across the country.
- Higher levels of unemployment were recorded in many rural areas with Donegal being the first place with 26.2% in 2011 and Longford holding the national high in 2016 with 19.6%.
- The lowest rate recorded was 11.2% in 2011 and 7.4% in 2016 in Dún Laoghaire-Rathdown.
- Apart from Dublin the lowest unemployment rate is recorded in Cork County 14.8% in 2011 that dropped to only 9.2% in 2016. Cork city recorded 22.2% in 2011 and 15% in 2016. The conclusion can be that people are living outside the urban area but travel for work into the big cities.

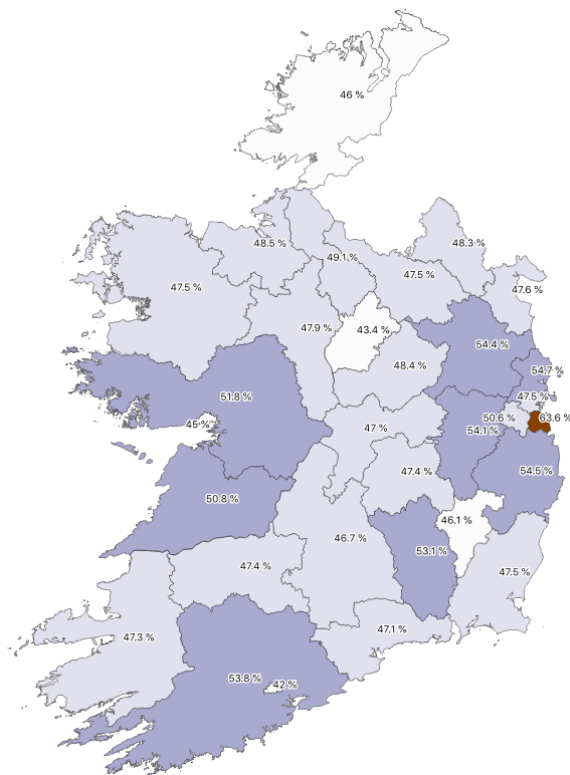
The question to be answered in the next part is if there a correlation between employment/unemployment – socio-economic group and occupation



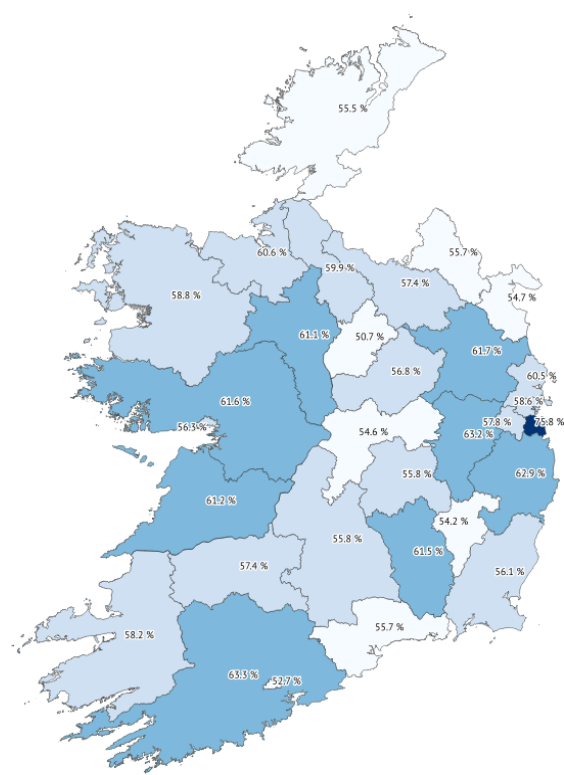
Socio-economic category 1 - 2011



Skilled occupations - 2011



Socio-economic category 1 - 2016



Skilled occupations - 2016

For the purpose of this exercise, I considered classifying the socio-economic group 1 as consisting of *Professional, Managerial, Technical and Skilled* workers.

Skilled occupations considered for this category are *Managers, Directors, Professional, Associate Professional, Technical, Administrative, Secretarial and other Skilled occupations*.

By comparing the *socio-economic group 1, skilled occupations and unemployment rate maps* from 2011 and 2016 it can be observed that low unemployment rates are recorded in areas where dominant is socio-economic group 1, and the occupations related to the social category.

This show there is a correlation between employment – socio-economic groups and occupations with people belonging to a good socio-economic category more likely to be employed.