Q Step Internship: Widening Participation and Attainment

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My Q Step journey began at the Planning Support Office, University of Manchester. I undertook a research project to aid the Widening Participation Team track the attainment of Widening Participation graduates and to compare to that of other graduates. I used regression analysis to determine whether the Widening Participation status of graduates held a significant effect on their

Research Aims

- A profile of the characteristics of WP/non-WP students
- A profile of the attainment of WP/non-WP students
- Comparative regression analysis of WP/non-WP students
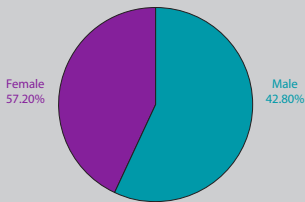
Sample

In total, a sample of 23, 872 University of Manchester graduates have been collated using the HESA data return, all having graduated between the academic years of 2009/10 to 2013/14, which have then been split into two populations:

- Graduates with a 'WP flag', total count: 4212 students
- Graduates without a 'WP flag', total count: 19660 students

Methodology

This analysis focuses on the trends of undergraduate attainment in accordance with WP status. Although analysis focused on the attainment and widening participation status of the student, other characteristics were taken into account (e.g. age, gender, ethnicity etc.) to draw comparisons. In order to test the significance of the WP flag variable on attainment with controls for other variables I implemented logistic regression analysis.
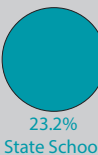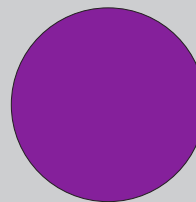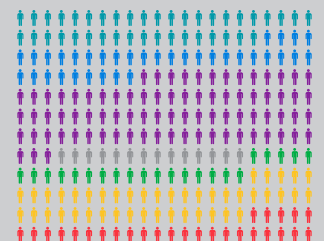
Defining WP Students…

- It is determined by geo-demographic markers in accordance with the POLAR 3 dataset (Lower Participation Neighbourhoods) and/or the ACORN dataset (groups 4 and 5) and/or
- Have experienced Local Authority Care for more than 3 months

Problem Solving...

- Unfortunately, 260 graduates were missing 'WP flag' data and have therefore been removed from the analyses. Those without a classified degree outcome (including an intercalating degree) have also been removed in order to provoke a more reliable outcome.
- Initially, WP flag data as is collated today was not available before the year 2012 . We therefore had to create a WP flag dataset from raw postcode data in accordance with the POLAR 2 and ACORN datasets.

Software Used
Excel
R Studio
Access
ArcGIS

Entry Qualifications
Socio-Economic
Attainment
Participation
Ethnicity
Gender
Equality
Widening

Profile

Female 57.20%   Male 42.80%

57.2% Female

Asian   Black   Mixed Other   White

63.3% White

23.2% State School

76.8% Independent School

76.8% from a state school

Higher Managerial   Intermediate Occupations   Lower managerial / Professional Occupations
Lower Supervisory / Technical Occupations   Routine Occupations   Semi-routine Occupations
Small Employers & Own Account Workers

31% have at least one parent/guardian within a lower managerial/professional role

Regression Analysis

- Regression modelling is a form of analysis which can give a prediction of the dependent variable when controlling for numerous other variables. The dependent variable must be dichotomous and in this case is the binary degree classification: good degree and lower degree. We determine whether a variable is significant by establishing whether it makes an impact on attainment despite the control for other variables.
- Both ethnicity and gender have a strong significance with females more likely to achieve a higher classification than males ($p<0.001$)
- White students more likely to achieve a higher classification than black and Asian students ($p<0.001$) when other variables were controlled for.
- The average A level grade held a strong significance ($p<0.001$): the higher the grade, the higher the degree classification.
- There was a significant difference in attainment when comparing independent schools with state schools. All state school students were more likely to achieve a good degree than from an independent school with the most significant differences being between the independent school and a) state grammar ($p<0.001$) b) state comprehensive ($p<0.001$).
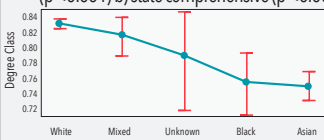

Ethnicity Group Effect Plot
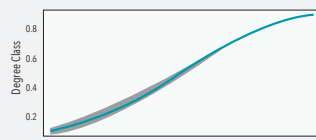
Average A Lev Effect Plot

Mapping

To demonstrate the proportions of both populations per domicile, I have used two cartograms featured below which distort the geographical area of the UK to reflect the proportion of graduates per Local Authority. For example, Manchester is shown physically bigger than on a standard geographical map in order to reflect the large number of graduates from this area.

I also used a colour coded cartogram in order to determine the concentration of WP graduates in the North West area.

Count of graduates per Local Authority, 2014 WP graduates
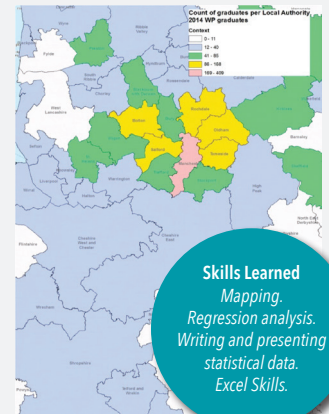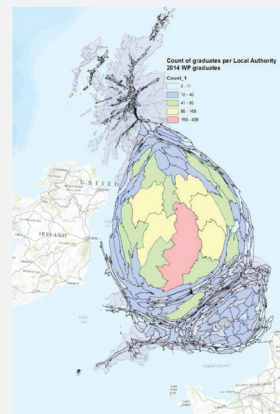
Skills Learned
*Mapping.
Regression analysis.
Writing and presenting statistical data.
Excel Skills.*