

Investigating the relationship between higher education participation, personal characteristics and area of residence among school or college leavers

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This Data Insight investigates the extent to which the personal characteristics and area of residence of school or college leavers in England have a bearing on the likelihood of participation in higher education. The personal characteristics considered include gender, ethnicity and parental household income. The analysis reported was carried out using linked administrative data from the Department for Education's National Pupil Database (NPD) and the Higher Education Statistics Agency's (HESA) student record. These are components of the [Longitudinal Education Outcomes \(LEO\) dataset](#).

Background

Higher education participation among school and college leavers in England has been steadily increasing for several decades. However, annual descriptive statistics published by the Department for Education (DfE) reveal that higher education participation rates vary considerably by characteristics such as gender, ethnicity, parental household income and area of residence¹. Previous analysis has used data concerning cohorts of students born in the late 1980s and early 1990s to look at disparities in access to higher education. This suggested that higher education access disparities by gender and parental household income can primarily be attributed to disparities in school attainment at age 16, whereas disparities in higher education access by ethnicity cannot be explained this way². Despite being very large, regional inequalities in higher education participation have received little attention in existing research. Not much is known about why the higher education participation rate of young people in London in particular is considerably higher than in every other region of England.

What I did

I analysed de-identified data concerning the entire cohort of young people attending state schools in England who took their GCSE examinations in 2015. These young people were born between September 1998 and August 1999. My research used the National Pupil Database (NPD), which includes de-identified information on pupils' gender, ethnicity and postcode of residence during their last year of schooling. I was also able to take into account whether pupils were living in households with a low income (as proxied by eligibility for free school meals) and pupils' attainment in their GCSE exams. I divided the cohort of young people into five equally-sized groups of GCSE attainment, based on pupils' performance in their best eight GCSE exams.

Additionally, I accessed de-identified data from the Higher Education Statistics Agency (HESA) student record, concerning all undergraduate students in the standard registration population at every UK university in autumn 2017 and/or those at university in autumn 2018. The NPD and HESA datasets were linked such that it was possible to observe, for all pupils in the 2015 GCSE cohort, whether they had progressed to higher education by age 19 and which institution they had progressed to.

I used the linked dataset to establish descriptive statistics concerning the overall rate of higher education participation for groups of students with particular characteristics. Then, I investigated the extent to which disparities in access to higher education persisted even once other average differences between groups of students were controlled for statistically. I used multivariate analysis for this – a statistical procedure that simultaneously examines multiple variables to identify relationships. I applied statistical controls in two stages:

1. Differences in GCSE attainment were controlled for using a points score measure in pupils' best eight GCSE exams, and a measure of whether or not pupils had met the criteria for the English Baccalaureate by achieving a good pass in a selection of more traditional academic subjects.
2. Other personal characteristics were controlled for. These were gender, ethnicity, free school meals eligibility, and neighbourhood characteristics as measured by the Index of Multiple Deprivation and POLAR metrics. POLAR (Participation of Local Areas) is a measure of the proportion of young people who have historically progressed to higher education within a given neighbourhood.

All analyses were carried out twice – once to investigate the issue of progression to higher education in general and once to investigate the issue of progression to more selective 'high-tariff' universities. High-tariff universities are defined as those in the top third when all universities are ranked in order of the average exam grades achieved by students who enrol.

What we found

More female pupils progress to higher education than male.

The proportion of female pupils who progressed to higher education (44.5%) was considerably higher than the proportion of male pupils who progressed (33.4%). This disparity could be explained predominantly, although not entirely, by the higher average attainment of female pupils in their GCSE exams. The progression rate to the most selective universities was also higher for young women (11.3%) than for young men (9.1%). However, the disparity between male and female participation at more selective universities was not as large as might be expected considering the size of the attainment gap between male and female school pupils.

Figure 1. Female likelihood of higher education participation (relative to male).

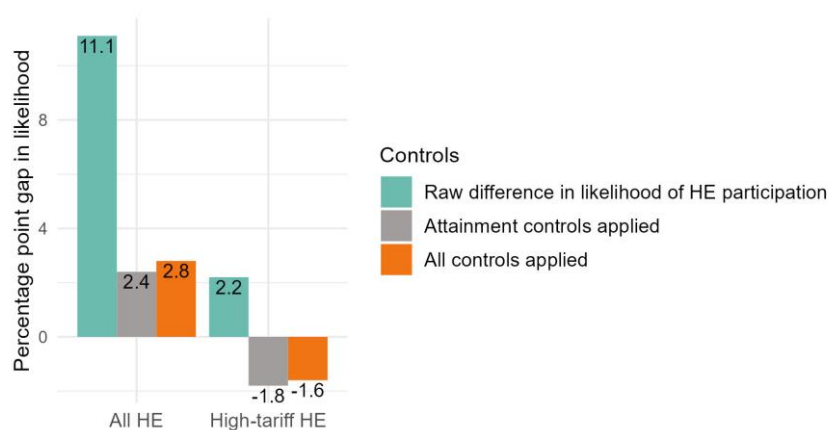
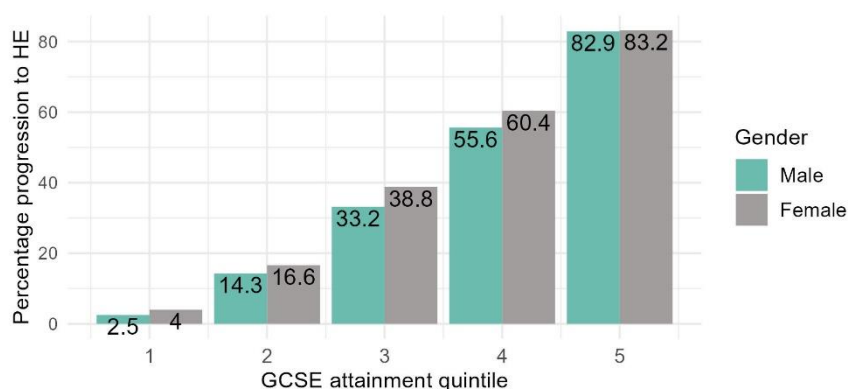


Figure 2 below reveals that male and female pupils in the top 20% of attainers overall at GCSE have a very similar likelihood of progressing to higher education (though it should be noted that female pupils are much more likely than male pupils to find themselves in the top 20% of attainers). Among those in the bottom 80% of attainers at GCSE, young women are more likely to progress to higher education than young men.

Figure 2. Higher education participation rates for five groups of pupils (quintiles) by gender and GCSE attainment.



Pupils in almost all ethnic minority groups are more likely to progress to higher education than those of White British ethnicity.

There is large variation in rates of higher education participation by ethnicity. For example, 34.4% of all school pupils of White British ethnicity were observed progressing to higher education by age 19, compared to 65.0% of those of Black African ethnicity. Members of almost all ethnic minority groups are more likely to progress to higher education than those of White British ethnicity, with the exceptions of those from Traveller backgrounds and those of mixed White and Black Caribbean ethnicity. Large disparities in higher education participation persist even once other factors (such as differences in average attainment or rates of free school meals eligibility) are controlled for statistically.

High attaining pupils from ethnic minority backgrounds are slightly more likely to progress to higher education than their high attaining White British counterparts. However, lower attaining pupils from ethnic minority backgrounds are *considerably* more likely to end up at university when compared to lower attainers of White British ethnicity.

Figure 3. Likelihood of higher education participation by ethnicity (relative to White British).

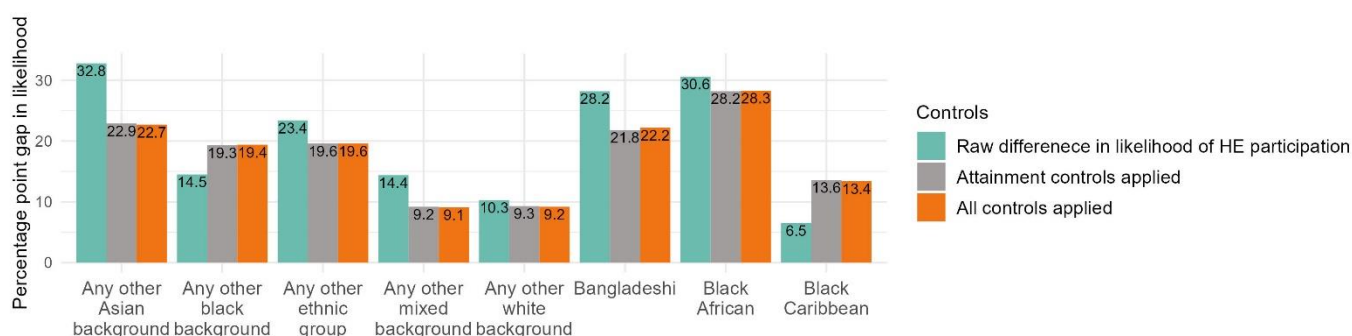
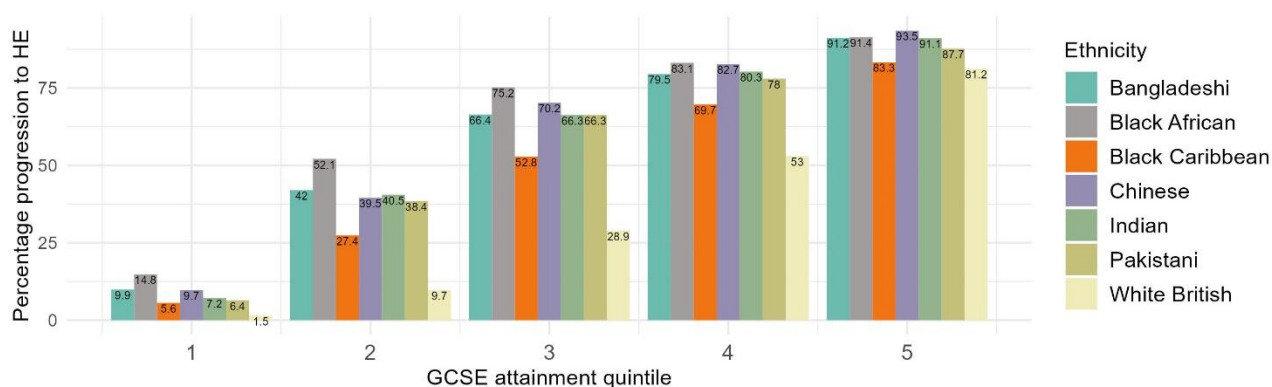


Figure 4. HE participation rates by ethnicity and GCSE attainment quintile.

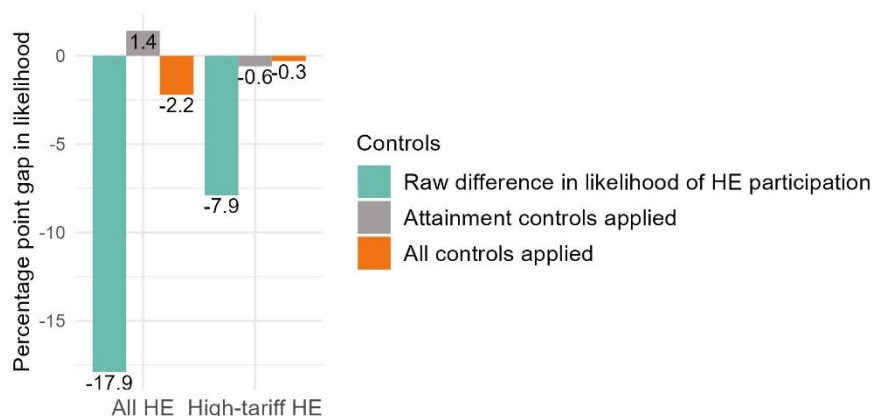


Pupils who were eligible for free school meals were less likely to progress to higher education.

The higher education progression rate of pupils who were not eligible for free school meals (41.3%) (a proxy for household income) was substantially higher than the rate for those who were eligible (23.4%). However, when considering pupils with the same level of attainment, free school meals eligible pupils appeared to be slightly more likely to progress to higher education than those who were not eligible. Having said this, being eligible for free school meals did reduce the likelihood of progressing to higher education once a range of additional factors – such as ethnicity and neighbourhood of residence – were also controlled for.

The proportion of free school meals eligible pupils who progressed to a selective university was very small (just 3.4%). The gap in participation between free school meals eligible and non-eligible pupils at more selective universities can be attributed to the large difference in average attainment between these groups of pupils.

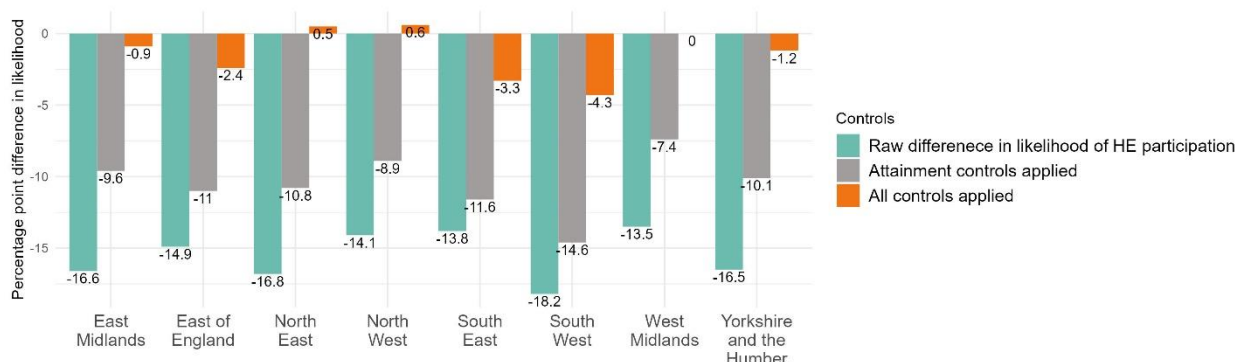
Figure 5. Likelihood of HE participation for those known to be eligible for free school meals (relative to those not eligible).



Over half of pupils in London go on to higher education, a much higher proportion than outside London.

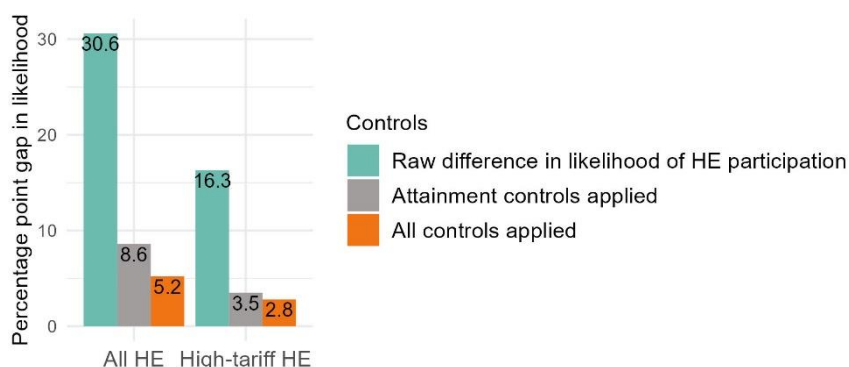
Young people growing up in London are much more likely to end up at university compared to those growing up in every other region of England. For example, 52.3% of all state school pupils in London progressed to higher education by the age of 19, compared to just 34.1% of those growing up in South West England. This phenomenon can be largely explained by a combination of London’s higher average school attainment and also average demographic differences, such as the greater tendency of those from ethnic minority backgrounds to grow up in the capital.

Figure 6. Likelihood of attending higher education by English region (relative to London)



Young people growing up in neighbourhoods where a smaller proportion of school and college leavers attend university are less likely to progress to higher education. Figure 7 below shows that young people living in the 20% of neighbourhoods with the highest higher education participation rates (POLAR quintile 5) are 5.2 percentage points more likely to progress to higher education than those growing up in the 20% of neighbourhoods with the lowest higher education participation rates (POLAR quintile 1). This is true even when average differences in attainment and other personal characteristics are controlled for.

Figure 7. Likelihood of HE participation for those who resided in POLAR quintile 5 (relative to those who resided in POLAR quintile 1).



Why it matters

University graduates tend to earn higher salaries on average compared to non-graduates once they enter the labour market³ and this is especially true for those who attend more selective universities⁴. Adults with higher levels of education also appear to enjoy a range of more favourable non-financial outcomes, such as longer life expectancies and a reduced likelihood of committing crime⁵. If young people are deprived of the opportunity to take part in higher education, they will miss out on many of the opportunities that it may afford them.

There is a particular challenge with respect to students from lower-income households. If these young people face barriers in accessing university, they may then struggle to access well-paid jobs in the future. This highlights the risk of the reproduction of disadvantage from one generation to the next.

What next?

Given that many disparities in access to higher education can be attributed primarily to disparities in school attainment, efforts should continue to narrow gaps in average school attainment by different personal characteristics. This is especially true with respect to socioeconomic disparities in school attainment. If the existing socioeconomic attainment gap in primary and secondary schools can be narrowed, then a corresponding narrowing of the socioeconomic gap in higher education participation should be expected. Similarly, initiatives to lower university entry requirements for disadvantaged students might help to narrow socioeconomic gaps in higher education participation. Any interventions which do not have the effect of narrowing attainment gaps – for example those that seek to simply raise pupils' aspirations or offer them more encouragement to apply to university – are less likely to be successful in narrowing socioeconomic participation gaps in higher education.

There are very large gaps in the likelihood of higher education participation by ethnicity. This appears to be explained in large part by the fact that many ethnic minority pupils with lower school attainment appear to be inclined to go to university, whereas lower attainers of White British ethnicity tend to pursue alternatives to higher education at age 18 or 19. Further research could explore the drivers of these different choices. Similarly, further research using the LEO dataset might usefully focus on identifying the pathways which tend to lead to the best employment and earnings outcomes for those with lower levels of school attainment.

Efforts to increase average school attainment outside of London, enabling other regions to 'catch up' with the capital, would be likely to narrow regional disparities in higher education participation. However, even if parity in attainment was achieved between London and the other English regions, geographical disparities in higher education participation rates would be likely to persist, given the greater tendency of ethnic minority pupils to reside in London and to progress into higher education.

References

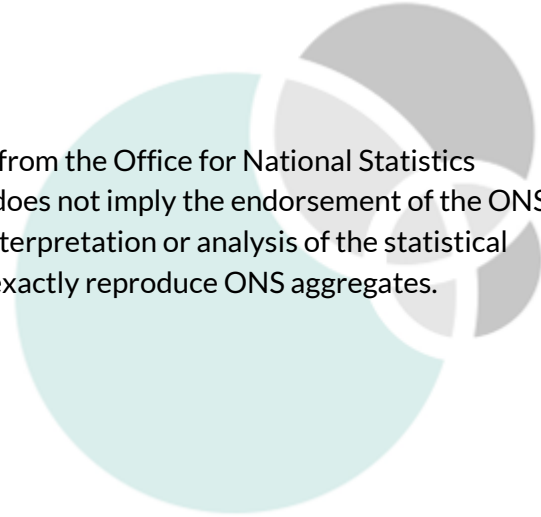
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Disclaimer

Parts of this work were produced using statistical data from the Office for National Statistics (ONS). The use of the ONS statistical data in this work does not imply the endorsement of the ONS or the data owners (DfE, HESA, etc) in relation to the interpretation or analysis of the statistical data. This work uses research datasets which may not exactly reproduce ONS aggregates.



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