

Widening Participation in Higher Education: A Quantitative Analysis

Our research provides a quantitative description of the educational trajectories of state school children, showing who goes on into higher education, the type of higher education experienced by different pupils and their subsequent success in the labour market. A central aim is to understand the importance of achievement at school from a young age in explaining the underrepresentation of some groups in higher education. Our research is innovative because we have new large-scale administrative data on higher education participants and non-participants, including information about their schooling.

- State school children from poor backgrounds remain far less likely to go to university than more advantaged children.



Policy attention needs to continue to focus on narrowing the socio-economic gap in HE participation.

- Poorer and richer students who achieve similarly in secondary school have similar HE participation rates.



We need to improve the achievement of poorer children in secondary school to widen their participation in HE.

- Ethnic minority students are generally more likely to go to university than White British students.



The educational achievement of ethnic minority students has improved and policy attention needs to shift to the type of HE accessed by these students.

The research

Aims

One aim of our project has been to understand whether individuals from poorer backgrounds or from particular ethnic minority groups are still less likely to attend higher education if one allows for their prior educational achievement, particularly GCSE and A level grades. If participation rates are similar among equally qualified individuals, regardless of their social or ethnic background, this suggests that gaps in participation rates are caused by educational inequalities in the school system. This analysis enables us to determine whether the big disparities in higher education participation rates between different groups of students, such as those from different socio-economic groups, are simply attributable to differences in choices made at age 17 and 18, or whether earlier educational achievement plays a more significant role. This in turn would imply that factors on entry into higher education at the age of 18, such as the financial costs of attending university, may be less important in determining participation than students' earlier achievement.

Another aim of our project is to describe and understand the types of higher education accessed by different students, and to quantify the subsequent differential impact of their degrees on their labour market success, as measured by their earnings several years after graduation. For example, the research investigates the extent to which students from different socio-economic or ethnic groups access higher education institutions that are more or less research intensive. In addition we measure the wage premium associated with degrees awarded by different types of institution.

Methods

Our work on participation relies on a new combination of large scale, individual-level administrative datasets that have been linked by the Department for Children, Schools and Families and the Department for Innovation, Universities and Skills. We have been granted access to these newly linked individual-level administrative datasets that enables us to follow every state school student in England in Year 11 in 2001/02.

The uniqueness of this project is that we have data on a particular cohort of children from age 11 right through to age 18. We are able to observe whether they continued into post-compulsory education in 2002/03 and/or 2003/04, and into higher education in 2004/05. This means that we can look at the academic trajectories of pupils from poorer socio-economic backgrounds and ethnic minority groups and identify when their relative education achievement falls away, if indeed it does.

Our analysis is based both on participants and non-participants. This allows for a more robust analysis than was possible in previous work using higher education records alone, for example. HESA data.

The additional analysis of the labour market outcomes of students makes use of rich data on four different cohorts of graduates: 1985, 1990, 1995 and 1999, though focusing most on the most recent cohort. With these sample data sets, we were able to investigate the difference in earnings accruing to individuals who have degrees in different subject areas and from different institutions.

We use a variety of different quantitative methods and datasets to undertake our modelling.

HE participation and socio-economic background

Children from poor backgrounds remain far less likely to go to university than more advantaged children, as shown in Figure 1 which illustrates that children eligible for Free School Meals are far less likely to attend university.

The large "raw" gap in participation between poorer and richer students is obvious from Figure 1. However, our analysis suggests that although there is a large socio-economic gap in the likelihood of participating in higher education, poorer and richer students have similar participation rates once we allow for prior achievement from Key Stage 2 to Key Stage 5, ages 11 to 18. Students with similar levels of achievement in secondary school are more or less equally likely to participate in higher education, regardless of their family background. Even only allowing for achievement up to GCSE, the 20 per

cent of most deprived males and females are just 3.2 or 4.8 percentage points respectively less likely to participate in higher education than their more advantaged counterparts. This work confirms the importance of secondary school achievement in explaining the large socio-economic gap in higher education participation rates. Broadly, the reason why poorer students do not access high education to the same extent as their more advantaged counterparts is not because of choices being made at age 18, but because disadvantaged students do so poorly in secondary school.

Poorer children tend to attend lower-achieving secondary schools. This work cannot prove a causal link between the quality of secondary schooling accessed by a pupil and his or her academic achievement. However, different types of students are accessing schools of different quality, and this is likely to be part of any explanation of the lower academic achievement of poorer children.

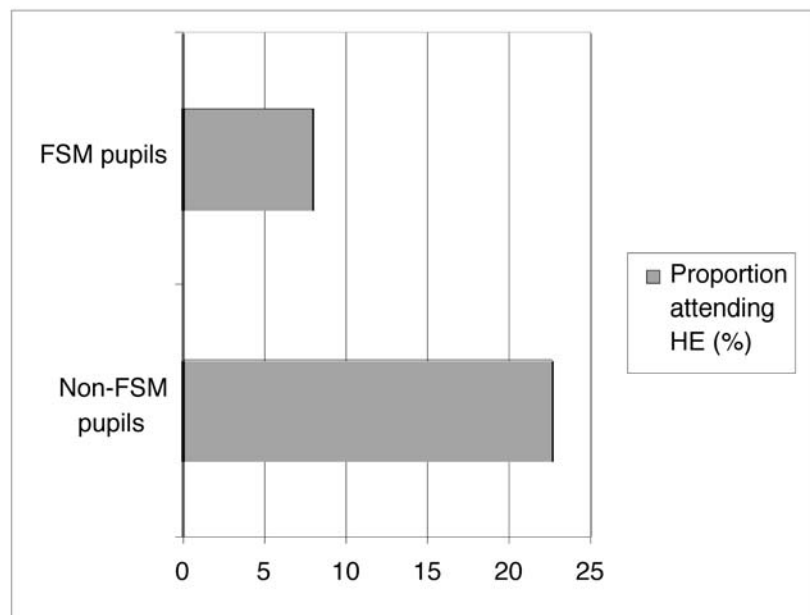
Poorer students may do poorly at school because they anticipate not going to university, or perhaps because others have low expectations of them and do not expect them to do so. But we found that whilst teachers tended to underestimate the achievement of the highest achieving students, there was no evidence of systematic bias in terms of teachers underestimating the achievement of poorer children, or children from particular ethnic minority groups.

HE participation and ethnicity

Our work shows that many ethnic minority students are more likely to participate in higher education than their White British peers. Once we allow for prior achievement, all ethnic minority

¹In the analysis we use a number of different indicators of the socio-economic background of each pupil and do not rely solely on the FSM indicator shown here.

Figure 1: HE participation by socio-economic background



Source: NPD/PLASC/ILR/HESA data for cohort in Year 11 in 2001/02.

groups are more likely to go to university than White British students, with the exception of Other Black males who are very slightly less likely (by 1.5 percentage points) to participate in higher education than White British males.

There is more upward mobility, in terms of academic achievement in secondary school, for most ethnic minority groups than for White British children.

HE participation and gender

As has been known for some time now, women are more likely to participate in higher education than males. This remains true even after allowing for the higher achievement of girls in secondary school.

Socio-economic background plays much the same role in determining higher education participation for girls as it is for boys. In fact the pattern of the relationship between socio-economic background, achievement in secondary school and higher education participation is very similar for both genders.

The HE experience and beyond

Poorer students who do go to university are more likely to attend lower status institutions, where status is measured in terms of research quality and institutional prestige. Our measure of higher education quality combines information on the quality of each institution's research from the Research Assessment Exercise with an indicator of whether the institution is a Russell Group university. This definition of high quality includes all 20 of the research-intensive Russell Group institutions, plus any UK Higher Education Institution with an average 2001 RAE rating that exceeds the lowest average RAE found among Russell Group universities.

We use this measure of institution status because it captures dimensions of quality that are important for student outcomes. For example, students at research intensive institutions are less likely to drop out and are more likely to achieve a higher quality of degree classification. These students then go on to earn an additional wage premium in the labour market than their graduate peers from other institutions. Students who have graduated from institutions which scored highly in the Research Assessment Exercise earn significantly more than their fellow graduates from institutions with lower RAE scores.

We also found that students from institutions with higher staff to student ratios, higher retention rates and higher expenditure per student earn a higher return to their degree.

Once we allow for the prior achievement of state school students, poor and rich students appear to attend similar-quality higher education institutions. But we were unable to consider privately educated students, who will be disproportionately represented in the highest quality

Major implications

- The gap in higher education participation between richer and poorer students is largely explained by the weak academic achievement of poor children in secondary school. These findings suggest that widening participation in higher education requires intervention well before the point of entry into higher education to increase the attainment of children from poorer backgrounds at earlier ages.

Students from materially deprived backgrounds are much less likely to participate in higher education than wealthier pupils. However, our findings suggest that this socio-economic gap in participation does not emerge at the point of entry into higher education. In other words, the socio-economic gap in participation does not arise because poorer students face the same choices at 18, but choose not to go to university. Instead it comes about because poorer pupils do not achieve as highly in secondary school as their more advantaged counterparts. The socio-economic gap that remains on entry into higher education, after allowing for prior attainment, is very small indeed. The implication of this finding is that focusing policy interventions on encouraging disadvantaged pupils at KS5 to apply to university is unlikely to have a serious impact on reducing the raw socio-economic gap in participation. That is not to say that universities should not carry out outreach work to disadvantaged students who continue into post-compulsory education. But this approach will not tackle the more major problem underlying the socio-economic gap in higher education participation, the underachievement of disadvantaged pupils in secondary school.

- Policy solutions therefore need to address the significant gap in academic achievement between poor and rich students that is evident at the start of secondary schooling and that then widens to the end of compulsory schooling.
- If the performance of poor students improves between age 11 and age 16 (Key Stage 4) they are as likely to go to university as students who performed well.

Our analysis of the transitions made by students between Key Stage 2 and Key Stage 4 is in some respects quite reassuring, in that those deprived students who do catch up and perform well at

institutions. That said, our analysis of state school students suggests that interventions to raise achievement in secondary school are likely to be needed to ensure that poorer students access the research-intensive universities and go on to earn more in the labour market as a result.

Although our research suggests that poor and rich students attend similar quality institutions, once we allow for their prior achievement, a different story emerges when we consider the nature of HE

Key Stage 4 have a similar probability of attending university as their more advantaged peers. Our work suggests that improving educational performance at Key Stage 4 is particularly important in terms of encouraging young people to stay on in post-compulsory education, and subsequently increasing poorer children's chances of participating in higher education. This means that secondary school interventions designed to improve the performance of disadvantaged children are more likely to increase their participation than interventions during post-compulsory education. Our analysis also shows that improving the educational achievement of disadvantaged students is likely to be quite challenging, given that there was far less upward mobility in their educational achievement throughout secondary school than their richer counterparts experienced.

- Poorer children and some ethnic minority groups access lower quality secondary schools (as measured by value added), so addressing school choice and access issues could play a role in addressing higher education participation gaps.

At least part of the explanation for the relatively low achievement of disadvantaged children in secondary school is likely to be rooted in school quality. Although our analysis cannot establish a causal link between the quality of secondary schooling accessed by a pupil and his or her academic achievement, it is apparent from our work that different types of students are accessing different-quality schools, and that this is likely to be part of the story behind the large socio-economic gaps in university participation that we observe. Our analysis suggests that school quality is likely to affect poorer pupils' achievement and the achievement of some ethnic minority groups. This in turn suggests that improving access to good schools may be one way in which the underachievement of disadvantaged pupils can be tackled

- Some ethnic minority groups are less likely to attend the most research-orientated prestigious universities, even allowing for their prior achievement. Policy interventions need to encourage high achieving ethnic minority students to apply to research intensive universities and ensure that such institutions are proactive in welcoming such applications.

participation by different ethnic groups. There remain differences in the quality of higher education institution accessed by different ethnic minority groups, even after allowing for prior achievement. On average, Black-Caribbean, Bangladeshi and Other Black ethnic minority students tend to access lower-status institutions than similarly-achieving White British counterparts. By contrast, Chinese, Other Asian and Mixed ethnicity students tend to access higher- status higher education than White British students.

Further information

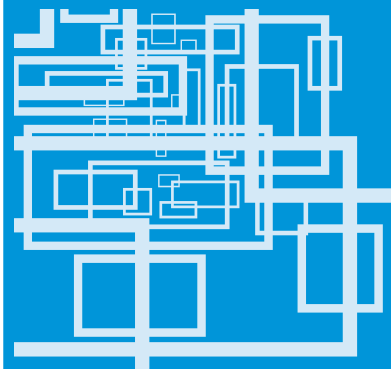
This project has generated a number of research papers and findings, all of which are listed at http://www.tlrp.org/proj/wphe/wp_vignoles.html. In particular, our comprehensive report 'Understanding the determinants of participation in higher education and the quality of institute attended: analysis using administrative data' is available on TLRP D-space. This report investigates the patterns of higher education participation by different types of young people, using the linked longitudinal administrative data set described in this brief. Our work describing the extent of non-completion and degree success using HESA data is also available on D-space. Work on the importance of teacher expectations and potential biases by socio-economic or ethnic background ('Students' Academic Self-Perception') is to be published shortly in a special edition of Research Papers in Education. Other related work on the economics of education by the research team, including work on the value of higher education and issues related to widening participation, can be found at the Centre for the Economics of Education website: <http://cee.lse.ac.uk/publications>.

The warrant

This research is particularly robust because of the nature of the data sets that we use. Our analysis of HE participation is the first to use data on an entire cohort of state school pupils, rather than a limited sample. We have been granted access to newly linked individual-level administrative datasets that enable us to follow (from entry into secondary school) the entire cohort of state school students in England who were in Year 11 in 2001/02. Our research is innovative because, unlike many studies that seek to explain higher education participation, we have data on both higher education participants and non-participants. Specifically, our data includes information on pupil achievement in both primary and secondary school. This enables us to analyse whether the big disparities in participation rates between different groups of students that we observe are simply attributable to differences in choices made at age 17 and 18, or whether earlier educational achievement plays a more significant role.

Of course any data set has its weaknesses. Our data do not include information on children in the independent school sector. Also, for our cohort of state school pupils, we are only able to observe whether they continued into higher education in 2004/05. This means that at present we are only able to consider the decision to participate in higher education at age 18/19. We are not yet able to distinguish between those who do not participate at this age but who return to higher education later from those who never participate.

Teaching and Learning Research Programme



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ISBN-978-0-85473-813-7



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April 2008