Title To What Extent do Parental Income, Gender and Ethnicity Act as a Barrier to Higher Education Participation in England?

Dr Paul Martin, University College London

Proposal Information

Across the OECD countries, the proportion of young people who have attained a tertiary degree has increased by more than 20 percentage points to 47% over the past two decades (OECD, 2023). However, as participation in higher education (HE) continues to increase, concerns have been raised as to whether some groups of young people with certain characteristics may have benefited from HE expansion more than others (Montacute & Cullinane, 2023; Smith, 2018). Fair access to HE matters given that it is well established that graduates tend to earn higher average salaries in the labour market than their non-graduate counterparts (Britton et al., 2020; Eurostat, 2021). Furthermore, HE participation also appears to be positively associated with a number of favourable outcomes in later adulthood, such as longer life expectancy and greater civic engagement (Balaj et al., 2024; Brennan et al., 2013).

Research on patterns of access to HE in England in particular presents the opportunity to understand the impact of high university tuition fees, given that England is reported to have the highest tuition fees of any OECD country (OECD, 2021). Despite this, some international comparisons have suggested that England has performed well in enabling certain groups of disadvantaged students to access HE. For example, the UK as a whole was ranked in fifth place among the OECD countries with respect to access to HE for young people who have parents with lower levels of education (OECD, 2012). Whilst tuition fees in England appear to be exceptionally high, students are supported financially by a system of income-contingent loans. These can be used to finance the cost of HE and are only repaid by graduates who earn above a certain threshold (Murphy et al., 2019), potentially reducing the deterrent effect of high tuition fees.

Existing literature on access to HE in England has suggested that many inequalities in access to HE (such as those by socioeconomic background) can be largely explained by corresponding inequalities in attainment at the secondary education level (Crawford & Greaves, 2015; Croll & Attwood, 2013). This is in line with other international evidence on this issue, with the OECD reporting that 37% of all variance in disparities in access to HE by parental level of education (across the OECD countries) can be explained by inequalities in earlier schooling (OECD, 2012). However, some research suggests that some vulnerable groups (such as poorer students and those from ethnic minority backgrounds) may be disadvantaged in the HE admissions process, perhaps by being disadvantaged in the application process itself (Boliver, 2013; Jones, 2013).

The UK Government routinely collects data concerning the attainment and personal characteristics of all school pupils within state-funded schools in England and makes this data available to researchers via the National Pupil Database, which is believed to be one of the richest education datasets in the world (Department for Education, 2015). This study takes advantage the richness of administrative data available in England to explore the following research question:

- To what extent do the personal characteristics of English school pupils (such as parental income, gender and ethnicity) predict the likelihood of them progressing into higher education?

As well as considering absolute disparities in access to HE by different characteristics, there will also be consideration as to whether or not different inequalities in HE access can be explained by confounding variables such as disparities in attainment in secondary education. This will reveal the extent to which certain background characteristics may present a barrier to HE participation, within the context of one of the most expensive higher education systems in the world.

Methodology or Methods/ Research Instruments or Sources Used

The UK Government's National Pupil Database (NPD) was used to gather data concerning the entire cohort of young people in England who turned 16 years of age between September 2014 and August 2015. Data was gathered

concerning pupils' school attainment at age 16, gender, ethnicity and postcode of residence. Two different measures of school attainment were gathered. The first was a points-based measure of the 8 highest grades achieved in subject assessments and examinations and the second was a marker indicating whether or not each pupil had demonstrated a basic level of competency in a range of traditional academic subjects such as English, science, mathematics and foreign languages. Data was also accessed showing whether or not pupils were known to be eligible for free school meals. In England, young people are eligible for free school meals if their parents qualify for certain means-tested welfare benefits (HM Government, n.d.). Free school meals eligibility is therefore known to be a way of identifying pupils who are likely to be from a socioeconomically disadvantaged household (Ilie et al., 2017). The pupil postcode measure revealed the street on which pupils were residing. This data was cross-referenced against data from the UK's Index of Multiple Deprivation (IMD) to judge the extent to which pupils were living in more disadvantaged neighbourhoods.

Records from the UK's Higher Education Statistics Agency (HESA) were then used to identify whether each pupil had progressed to degree-level study by the age of 19. It was possible to match together both the NPD and HESA datasets using anonymous matching references supplied by both data providers.

In total, data concerning 565,169 pupils was available for analysis. Firstly, descriptive statistics were produced which revealed for each group of pupils with a given characteristics what proportion of the group had progressed to degree level study by the age of 19. Secondly, binary logistic regression analyses were performed which could isolate the extent to which any given characteristic could predict the likelihood of a young person progressing to degree-level study once other variables were controlled for statistically. These regression analyses were performed on a restricted dataset of 549,922 pupils, where any cases with missing data had been removed. Regression analyses were performed in stages – for each given variable of interest, disparities in secondary school attainment were controlled for first, before all other variables were then controlled for in a second analysis.

Conclusions, Expected Outcomes or Findings

The proportion of pupils eligible for free school meals progressing to HE (23.4%) was substantially lower than the proportion of pupils progressing to HE who were not eligible for free school meals (41.3%). However, the statistical modelling suggested that this could be explained entirely by disparities in secondary school attainment at age 16. This suggests that young people who achieve the same level of attainment in their secondary schooling tend to have an equal likelihood of progression to higher education irrespective of their level of household income. Policies which have the effect of reducing attainment gaps between more and less advantaged students earlier on in the education system would be likely to have the effect of narrowing socioeconomic participation gaps in higher education. Young people from a poorer background may not necessarily be deterred by England's high levels of tuition fees, perhaps due to the availability of income-contingent loans. More countries might therefore reasonably consider greater use of such income-contingent loans.

Female pupils progressed to HE at a much higher rate (44.5%) than male pupils (33.4%), however this observation could be explained predominantly – though not entirely – by their higher average attainment in school examinations at age 16.

Pupil ethnicity had a large bearing on the likelihood of young people progressing to HE. With a small number of exceptions, most ethnic minority groups had higher progression rates to HE than the white British ethnic group. Large disparities in access to HE by ethnicity still persisted once differences in school attainment and other factors were controlled for statistically. This could suggest that young people from ethnic minority backgrounds have a greater propensity to choose to take part in HE. Alternatively, young people from ethnic minority backgrounds might face greater barriers in accessing other pathways such as apprenticeships, technical education or employment.

References

Balaj, M., Henson, C. A., Aronsson, A., Aravkin, A., Beck, K., Degail, C., Donadello, L., Eikemo, K., Friedman, J., Giouleka, A., Gradeci, I., Hay, S. I., Jensen, M. R., McLaughlin, S. A., Mullany, E. C., O'Connell, E. M., Sripada, K., Stonkute, D., Sorensen, R. J. D., . . . Gakidou, E. (2024). Effects of education on adult mortality: a global

systematic review and meta-analysis. *The Lancet Public Health*. https://doi.org/10.1016/S2468-2667(23)00306-7

Boliver, V. (2013). How fair is access to more prestigious UK universities? *The British Journal of Sociology*, *64*(2), 344-364. https://doi.org/https://doi.org/10.1111/1468-4446.12021

Brennan, J., Durazzi, N., & Séné, T. (2013). *Things we know and don't know about higher education: a review of recent literature*. Department for Business Innovation & Skills. https://www.gov.uk/government/publications/wider-benefits-of-higher-education-literature-review

Britton, J., Dearden, L., van der Erve, L., & Waltmann, B. (2020). *The impact of undergraduate degrees on lifetime earnings*. Institute for Fiscal Studies. https://ifs.org.uk/publications/14729

Crawford, C., & Greaves, E. (2015). *Socio-economic, ethnic and gender differences in HE participation*. Department for Business Innovation and Skills. https://www.gov.uk/government/publications/higher-education-participation-socio-economic-ethnic-and-gender-differences

Croll, P., & Attwood, G. (2013). Participation In Higher Education: Aspirations, Attainment And Social Background. *British Journal of Educational Studies*, *61*(2), 187-202. https://doi.org/10.1080/00071005.2013.787386

Department for Education. (2015). *The national pupil database: User guide*. Department for Education.

Eurostat. (2021). *Earnings statistics*. Retrieved 24 January 2024 from https://ec.europa.eu/eurostat/statistics-explained/index.php?title=Earnings_statistics

HM Government. (n.d.). *Apply for free school meals*. HM Government,. Retrieved 19 August 2022 from https://www.gov.uk/apply-free-school-meals

Ilie, S., Sutherland, A., & Vignoles, A. (2017). Revisiting free school meal eligibility as a proxy for pupil socio-economic deprivation. *British Educational Research Journal*, *43*(2), 253-274. https://doi.org/https://doi.org/10.1002/berj.3260

Jones, S. (2013). "Ensure That You Stand Out from the Crowd": A Corpus-Based Analysis of Personal Statements according to Applicants' School Type. *Comparative Education Review*, *57*(3), 397-423. https://doi.org/10.1086/670666

Montacute, R., & Cullinane, C. (2023). *25 years of university access: How access to higher education has changed over time*. The Sutton Trust. https://www.suttontrust.com/wp-content/uploads/2023/10/25-Years-of-University-Access.pdf

Murphy, R., Scott-Clayton, J., & Wyness, G. (2019). The end of free college in England: Implications for enrolments, equity, and quality. *Economics of Education Review*, *71*, 7-22. https://doi.org/https://doi.org/10.1016/j.econedurev.2018.11.007

OECD. (2012). *Education at a Glance 2012*. https://www.oecd-ilibrary.org/content/publication/eag-2012-en

OECD. (2021). *Education at a Glance 2021*. https://www.oecd-ilibrary.org/content/publication/b35a14e5-en

OECD. (2023). *Education at a Glance 2023*. https://www.oecd-ilibrary.org/content/publication/e13bef63-en

Smith, E. (2018). *Key Issues in Education and Social Justice: 2nd Edition*. SAGE.