Phase 1 Report:

The value of higher education

Rapid evidence review and initial data analysis

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State of Life

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CONTENTS

GLOSSARY OF TERMS

BAME – A collective term for those from Black, Asian and Minority Ethnic backgrounds.

Disadvantage – Any classification of socioeconomic disadvantage. While the Department for Education (DfE) has a specific definition of a disadvantaged student,[1] the rapid evidence review took a broad definition of disadvantage to include any measure of economic disadvantage, for example, eligibility for free school meals or certain socioeconomic categorisations. This ensured that evidence was not excluded on the grounds that it did not use a specific measure of disadvantage.

Eudaimonic happiness – Satisfaction achieved through experiences of meaning and purpose, rather than experiences of pleasure.

Fixed effects – An extension of the linear regression model for longitudinal (panel) data, that is, where the same individuals are observed at multiple points in time. A fixed effects estimation is only appropriate when examining changes in outcomes and explanatory variables over time for the same individuals. The consequence is that all time-constant individual characteristics are removed from the equation, even if they are not observed in the data. This can help causal inference by removing some bias in the model.

Heteroskedasticity-robust standard errors – Standard errors for linear regression estimated by a slightly more complex formula that does not rely on the assumption that the variance of the residual (error) term is constant regardless of the levels of the explanatory variables.

Higher education (HE) – A course at Level 4 or above that is primarily provided by a higher education institution.

Pathway – The type of higher level course pursued, for example through university, a further education college or an apprenticeship.

Key stage 4 (KS4) – The two years of school education that end with GCSEs. Almost all pupils will finish KS4 in the academic year in which they turn 16 years old.

Longitudinal educational outcomes (LEO) – The LEO data brings information from the Department for Education together with employment, benefits and earnings information from the Department for Work and Pensions and Her Majesty's Revenue and Customs. This allows researchers to track individuals over time, through education and employment.

Multivariate linear regression – An econometric analysis methodology based on modelling an outcome variable (also known as a dependent variable) as a linear function of multiple explanatory variables (also known as independent variables). The estimates of the linear coefficients of the independent variables are chosen to be those which result in the smallest sum of squared error terms for all observations in the sample. This estimation method is known as Ordinary Least Squares (OLS).

Self-actualisation – The subjective feeling of having achieved one's potential. This includes feeling fulfilled and worthwhile.

Statistical significance (of a regression coefficient) – This is usually expressed as the probability of observing that, for a particular coefficient in the linear regression estimation under the null hypothesis, the respective explanatory variable has no effect on the outcome (this probability is also known as the p-value). The lower the p-value, the higher the likelihood that the explanatory variable has an effect. Another way to express statistical significance is to say that a coefficient is significant at the x% level, which means that the respective probability (p-value) is less than x%.

Type of higher education institution – This usually refers to a categorisation of the university attended, for example, a Russell Group university, and is often based on how selective the university is.

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[1] The DfE defines a disadvantaged student as one who is eligible for free school meals or has been in local authority care.

EXECUTIVE SUMMARY

A belief in the value of higher education for disadvantaged students underpins the mission of the Centre for Transforming Access and Student Outcomes in Higher Education (TASO) to close equality gaps in higher education. To better understand the various benefits of higher education, TASO commissioned State of Life and Mime to conduct research to understand the individual and societal impacts of disadvantaged young people graduating from higher education courses. This research involved:

A. an initial rapid evidence review to expose the gaps in the existing literature

B. analysis of publicly available UK Households Survey data to fill some of those gaps

C. a proposal for further research to be carried out, through an application to the Longitudinal Education Outcomes (LEO) dataset.

A.   Findings from the rapid evidence review

- The rapid evidence addressed five research questions, each of which explored a possible impact of higher education on disadvantaged young people. Evidence that analysed the *causal* impact of higher education was prioritised. There is strong evidence that disadvantaged young people who attend higher education have higher future earnings than disadvantaged young people who do not. For example, Anderson and Nelson (2021) find this average earnings difference is around £8,300 at 15 years after KS4.

- However, there is also evidence that disadvantaged graduates earn less than non-disadvantaged graduates, with one paper estimating that this earnings gap is around 10%, even when controlling for other factors, such as the specific university attended.

- Britton et al. (2019) find that when controlling only for the subject group studied at university, there is little change from the raw earning gap. However, when controls are added for UCAS tariff score,

ethnicity and gender, this accounts for the majority of the reduction in the earnings gap to around 10%. Entry tariff score for higher education courses appears to explain more of the average earnings gap between disadvantaged and non-disadvantaged graduates than subject choice. Subject choice and university attended only partly explain this gap.

- Graduates from low socioeconomic backgrounds appear to benefit from higher levels of measures linked to wellbeing, such as perceived financial prosperity. On average, graduates also report higher levels of life satisfaction and happiness than non-graduates (although this is not specific to disadvantaged graduates).

- There is evidence that higher education can increase social and geographical mobility for disadvantaged young people. For example, Britton, Drayton & Van der Erve (2021) found that 22% of FSM graduates were in the top quintile of earners at age 30, compared to only 6% of FSM non-graduates, suggesting that attending university is associated with social mobility.

- There is a lack of high-quality research on the impact of higher education on self-actualisation and attitudes towards other people and communities.

This review identified key gaps in the existing literature. There is little evidence on how outcomes for disadvantaged graduates vary according to the specific education pathway pursued. Additionally, there is a lack of evidence surrounding the role that additional factors play in causing the disparities observed in outcomes between disadvantaged and other graduates, for example, on how disadvantaged graduates' prior attainment, ethnicity and home region affect how they benefit from higher education. Finally, there is a general lack of high-quality, UK-specific evidence on the value of higher education for disadvantaged students in terms of 'softer' outcomes, such as wellbeing and attitudes, in comparison to the evidence available on economic outcomes.

B.   Findings from the analysis of public data

In order to address the gap identified around softer outcomes (personal wellbeing, mental health, confidence, social capital and community cohesion), we analysed publicly available data from the UK Household Longitudinal Survey – Understanding Society (Usoc). While we can observe higher levels of soft outcomes among higher education graduates, this difference is probably because they are likely to be younger, more affluent and employed.

Applying a more thorough analysis, we find that most of these relationships can indeed be accounted for by demographic data. However, the correlation between higher education and a series of social capital outcomes – number of close friends, diversity of friends and reduced loneliness – remains positive and significant. Furthermore, there is some evidence that this positive correlation between higher education and social capital outcomes may be stronger for particular groups in society, such as ethnic minorities, women, and people with low income.

C.   Next steps

Informed by the findings of this report, further investigation of LEO data will be undertaken to allow a more detailed analysis of long-term economic outcomes in order to address the gaps identified in the existing literature. Specifically, the analysis will consider the impacts of the specific education pathway pursued and the additional factors that could influence these outcomes.

Recommendations

- While attending higher education has clear economic benefits, higher education providers must do more to address the gap in labour market outcomes between disadvantaged graduates and their peers.

- The literature identifies subject and institution choice as factors that may partly determine future earning potential. Pre-entry information, advice and guidance may help students enter courses which are a better match for their long-term earning potential based on prior attainment. To address the remaining gaps which exist between more and less advantaged graduates, higher education providers must take a strategic approach to employability support, developing and evaluating programmes specifically designed for disadvantaged students.

- Further research is needed to identify the impact of other characteristics such as ethnicity, gender and prior attainment on the outcomes of disadvantaged graduates.

- To accompany the evidence on the economic value of higher education, there is a clear need for more evidence on the non-economic outcomes for disadvantaged graduates.

INTRODUCTION

The Centre for Transforming Access and Student Outcomes (TASO) commissioned State of Life and Mime to conduct research to understand the individual and societal benefits of higher education (HE) for disadvantaged young people. This focused on the role of HE in addressing equality gaps between advantaged and disadvantaged students. A variety of research projects have shown the benefits of HE both to the individual and society (Hunt & Atfield 2019; Ma, Pender & Welch, 2016), but this report explores in more depth the value of HE for disadvantaged young people specifically. The research involved two distinct phases of work:

Phase 1:

- An initial rapid evidence review to expose the gaps in the existing literature (Section A)

- Analysis of publicly available UK Households Survey data to fill the gaps identified (Section B)

Phase 2:

- Further primary research to be carried out through an application to the Longitudinal Education Outcomes (LEO) dataset.

The rapid evidence review, conducted between October and November 2021, examined the existing evidence around five key research questions. These explored the impact of disadvantaged young people graduating from HE on economic, wellbeing and social outcomes (see the methodology for the full research questions).

This rapid review exposed three important gaps in the existing literature:

- There is little evidence on how outcomes for disadvantaged graduates vary according to the specific education pathway pursued.

- There is a lack of evidence on the role that additional factors, such as prior attainment, play in the disparity in outcomes between disadvantaged and other graduates.

- There is a general lack of high-quality evidence on the impact of HE on softer outcomes, such as wellbeing and attitudes, for disadvantaged students.

Analysis of public data was used to address these gaps at least partially, and an application was made to access the LEO dataset.

This Phase 1 report outlines the approach and key findings from the rapid evidence review in Section A and the analysis of public data in Section B. The overall conclusions from the rapid evidence review and data analysis are summarised in Section C. Finally, Section D outlines the rationale for further research to be conducted with the LEO dataset.

METHODOLOGY

The approach to this research involved an initial rapid literature review to identify gaps in the existing evidence base. This was followed by an analysis of publicly available survey data to address some of these gaps. Finally, scoping for new primary research using the LEO dataset was completed in order to address additional research gaps. This approach ensures that this project builds on, rather than replicates, existing work and therefore adds to the growing evidence base.

Approach to the rapid evidence review

Research questions

The rapid evidence review, conducted between October and November 2021, set out to address seven initial research questions around the different possible impacts of disadvantaged students completing HE. However, over the course of the review, we identified a clear overlap between two of the questions, and another was excluded due to a lack of evidence. The seven initial research questions were therefore condensed to the following five research questions:

1. How does HE impact future **income**, **the** likelihood of **stable employment** and **type of career** for disadvantaged graduates?

2. How does HE impact the future **wellbeing** of disadvantaged students? [3]

3. How does HE impact disadvantaged students' **attitudes towards other people** and communities, and how does HE impact non-disadvantaged students' attitudes towards disadvantaged people?

4. To what extent does HE for disadvantaged students contribute to **social mobility**?

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[3] This research question was combined with a separate initial research question: "To what extent does HE help disadvantaged students to realise their potential?"

5. What are the broader **social**, **environmental** and **economic** benefits of disadvantaged students attending HE (not just those attributable to the individual attending), and what is the financial value of these?

These research questions were intended to cover a broad range of potential benefits from HE for disadvantaged young people.

Demographic groups of focus

This research focused on the impact of HE on *disadvantaged* graduates. While the Department for Education (DfE) has a specific definition of a disadvantaged student,[4] the rapid evidence review took a broad definition of disadvantage to include any measure of economic disadvantage, for example, eligibility for free school meals or certain socioeconomic categorisations. This ensured that evidence was not excluded on the grounds that it did not use a specific measure of disadvantage.

To understand the value of HE for disadvantaged young people, we looked for any evidence that compared this group to:

A. **Disadvantaged** young people who **did not complete HE** (as the priority was to look at the impact of HE on disadvantaged young people)

B. **Non-disadvantaged** young people who **did complete HE** (to look at the narrowing of outcome gaps among graduates)

C. **Non-disadvantaged** people who **did not complete HE** (to look at the narrowing of gaps across society).

For the purpose of this project, **HE was defined as qualifications at Level 4 or above primarily provided through an HE institution**.[5] However, we took an inclusive approach to the rapid evidence reviewed where details of the institutions providing the courses were not specified. This meant including evidence in this review that may be based partly on Level 4 or above courses taken in further education institutions or apprenticeships provided by employers, despite these falling outside TASO's remit.

Identification of relevant research

Evidence was found by searching for key terms in online research libraries including Google Scholar as well as education-specific libraries such as ERIC. We used a number of synonymous search terms to ensure important literature was not missed, for example, 'disadvantaged', 'deprivation', 'free school meals', and 'inequality'.

Research that was not published in English or that was more than 20 years old was excluded. Where it filled a gap that was not otherwise addressed, some research that analysed the impact of HE in other countries was included.

All evidence found, including lower quality evidence that we do not explore in this report, was recorded on a grid, with key details, and categorised according to the Office for Students (OfS) standards of evidence:[6]

1. **Type 1** – Narrative: there is a clear narrative for why we might expect an activity to be effective. This narrative is normally based on the findings of other research or evaluation.

2. Type 2 – Empirical Enquiry: data suggest that an activity is associated with better outcomes for students.

3. **Type 3** – Causality: the method used demonstrates that an activity has a 'causal impact' on outcomes for students.

During the review, we found no evidence that presented a truly robust *causal* impact of HE. We instead found several research papers that made some attempt to compare data before and after HE to a similar group who did not undertake HE. However, the weakness of the counterfactual, for example, the existence of other clear differences between the groups that are not accounted for, meant that this evidence could not be classified as causal. We, therefore, classified these papers as '**Type 2 with counterfactual**' to distinguish them from Type 2 evidence where no counterfactual is presented.

A condensed version of the evidence grid with all the evidence referenced in Section A can be found in Appendix A.

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[4] The DfE defines a disadvantaged student is one who is eligible for free school meals, or has been in local authority care.

[5] For more information on qualification Levels see: https://www.gov.uk/what-different-qualification-levels-mean/list-of-qualification-levels

[6] https://taso.org.uk/evidence/toolkit/evidence-standards/

A total of 78 papers were added to the evidence review grid, as their titles contained relevant search terms. Of these, 62 were found to provide evidence relating to the specific research questions. The table below summarises the quality of evidence, showing that – while most literature drew some empirical conclusions – 19 presented empirical evidence with some use of a counterfactual group in the analysis.

OfS standard of evidence	Number of papers reviewed
Type 1 – Narrative	4
Type 2 – Empirical enquiry	51
Type 2 with counterfactual	19
Type 3 – Causal	0
Meta-analysis	4
Total	**78**

The highest quality evidence relating to each research question (often Type 2 with counterfactual) was prioritised for deeper analysis and is described in Section A below.

Approach to data analysis to fill evidence gaps

Following the identification of gaps in the existing literature, we conducted an analysis of the UK Household Longitudinal Survey – Understanding Society dataset.

This analysis involved cross-tabulating key variables to explore the relationships between outcomes, education and indicators of disadvantage. We considered two types of disadvantage indicator:

- Income-based indicators, which are a function of the individual's position in the income distribution of the survey respondents in the same wave (for example, above median or below median, top 25%/middle 50%/bottom 25%)

- Occupation-based indicators, which are derived from the respondent's ONS Socio-Economic Classification (NS-SEC), which is in turn based on their most recent job.[7] In this study, 'higher and middle SEC' refer to NS-SEC Classes 1–5, 'lower SEC' refer to NS-SEC Classes 6–8, and 'SEC residuals' refer to those who are not classified by NS-SEC as they are not in the labour force (those who are full-time students, retired or whose occupation cannot be determined).

The respondent's level of education is defined as their highest educational qualification, grouped into six categories, as follows:[8]

- University degree or higher (Levels 6–8)
- Other HE (Levels 4–5)
- A-level or equivalent (Level 3)
- GCSE or equivalent (Levels 1–2)
- Other qualifications
- No qualifications

The outcomes we considered were life satisfaction (the key indicator of personal wellbeing normally used for evaluation, as per the latest HMT Green Book 2020 and the 2021 Wellbeing Supplementary Guidance), general health, mental health indicators (the GHQ and WEMWBS scales), as well as questions about trust, confidence, resilience, number of friends, diversity of friends, physical activity and volunteering, among others. A full list can be found in the respective tables of the Findings subsection in Section B below.

The cross-tabulations (descriptive statistics) we produce are of two types: 1) outcomes and education, and 2) education (including attitudes to education) and indicators of disadvantage. The first type will show whether respondents with HE qualifications exhibit better outcomes (such as greater wellbeing and social mixing), while the second type will explore whether prominent differences in socio-economic class relate to the decision to enrol in HE, as these may offer alternative explanations for the differences revealed in the first type.

As this happens to be the case, we then used multivariate regression analysis to establish a more accurate relationship between education and the outcomes under consideration, controlling for a range of demographic and socio-economic variables:

- Age
- Gender
- Marital status
- Household composition (number of adults and children)
- Employment status
- General health
- Disability
- Rural/urban area
- Being religious
- UK region
- Broad ethnic group (White/Mixed/Asian/Black/Other)

7 http://...thenationalstatisticssocioeconomicclassificationnssecrebasedonsoc2010

8 https://www.understandingsociety.ac.uk/documentation/mainstage/dataset-documentation/variable/hiqual_dv

- Wave of the survey (to control for the time trend)
- Month of interview (to control for seasonal patterns in wellbeing and other outcomes)
- NS-SEC
- Accommodation status
- Household income (see note below).

Note: Increased income is one of the most strongly evidenced outcomes of HE, and is also responsible for increased wellbeing, health and other outcomes (Fujiwara 2013[9]). Therefore, it could be considered a 'channel' of the positive effects of HE on other outcomes and its inclusion as a control would understate the relationship between HE and these outcomes, as it would remove the element that can be attributed to increased income as a result of HE. Therefore, we run alternative model specifications where we do not control for income but replace it with the mother's and father's education to control for prior expectations.

Thanks to the longitudinal nature of the data, we can perform both OLS and fixed effects regressions for most of the outcomes considered. Fixed effects regressions generally produce more robust evidence as they automatically control for unobservable individual characteristics that are constant over time. We also split the sample into subgroups by gender, Black, Asian and Minority Ethnic (BAME) status, and the indicators of disadvantage mentioned above, to observe how this relationship varies across these subgroups.

Further research

Given the gaps identified in the existing literature that could not be addressed by the analysis of the Understanding Society data, further analysis of the LEO data has been scoped out. More detail is provided in Section D.

[9]   http://eprints.lse.ac.uk/51577/1/dp1233.pdf
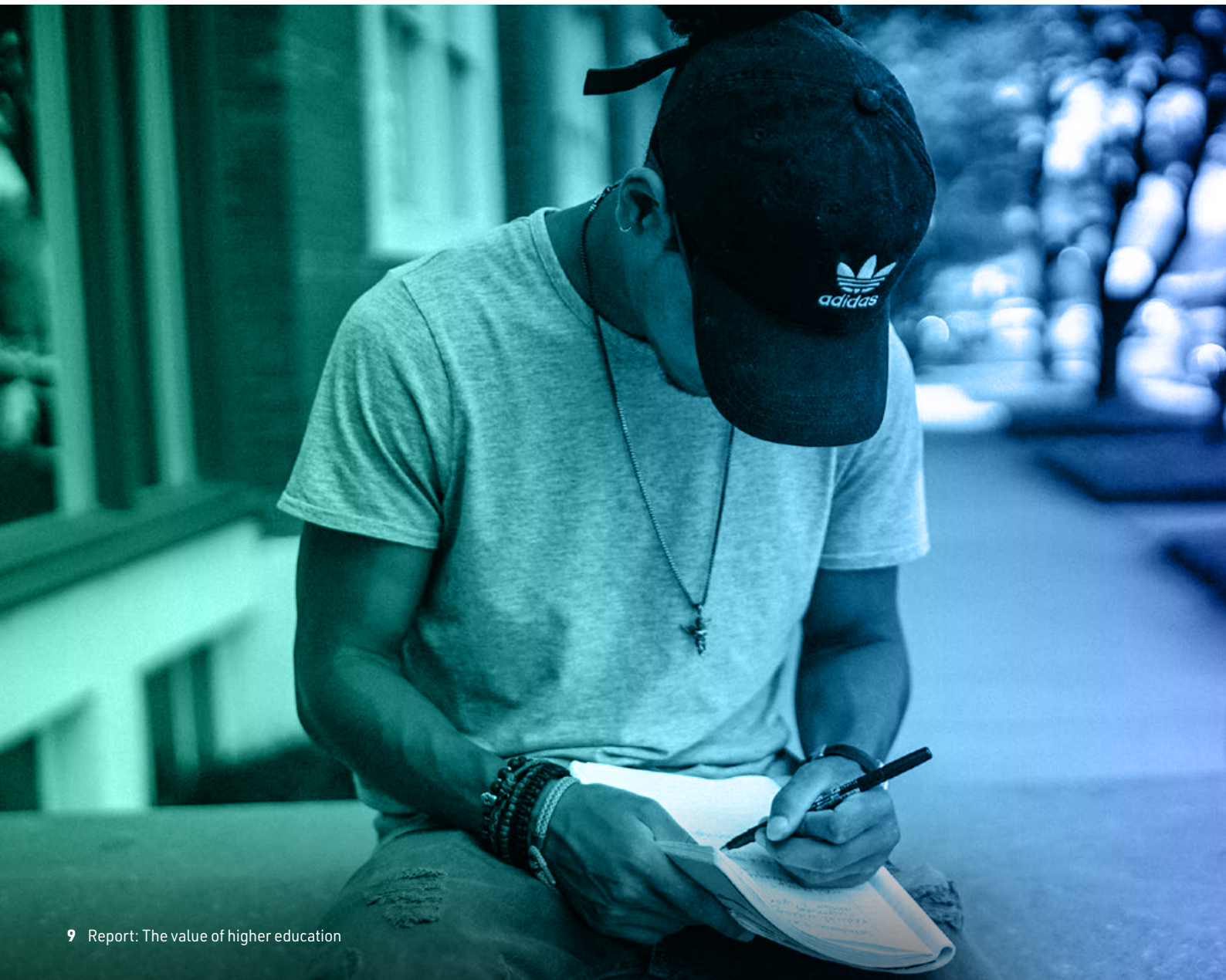
A. FINDINGS OF RAPID EVIDENCE REVIEW

A1. How does HE impact future income, likelihood of stable employment and type of career for disadvantaged graduates?

The rapid evidence review identified 46 papers that discussed the impact of HE on the economic outcomes of disadvantaged graduates. Around one-quarter of these papers included some type of control/counterfactual.

OfS standard of evidence	Number of papers reviewed
Type 1 – Narrative	1
Type 2 – Empirical enquiry	31
Type 2 with counterfactual	13
Meta-analysis	1
Total	**46**

Headline findings:

- Disadvantaged young people who attend HE tend to go on to have **higher earnings** than disadvantaged young people who do not. The best available evidence shows that, 15 years after KS4, the average earnings of FSM graduates are around £8,000 higher than those of FSM non-graduates.

- However, most research also finds that **there is a gap** in economic outcomes between disadvantaged and non-disadvantaged graduates, as there is **between disadvantaged and non-disadvantaged non-graduates**. The best available evidence shows that, 15 years after KS4, the earnings of FSM graduates are approximately £4,000 lower than those of non-FSM graduates.

- Despite evidence that other factors, such as gender and ethnic group, play a role in economic outcomes, there is **little evidence exploring the impact of these additional demographic factors on the outcomes of disadvantaged graduates** specifically.

Best available evidence:

Some of the strongest evidence of the impact of HE on disadvantaged students' economic outcomes comes from a paper that uses LEO data to explore different post-16 pathways (categories include KS5, HE, Other Education, adult FE and Employment) and labour market outcomes (Anderson & Nelson, 2021). In this paper, the median earnings for employed individuals[10] across several LEO cohorts[11] are measured over time for a number of different subgroups. One of these groups is those who received free school meals (FSM) in the last year of KS4. Receipt of FSM is used in this paper as a measure of socioeconomic disadvantage. Each subgroup is also split into graduates and non-graduates, with graduates defined as all individuals who have achieved a Level 6 qualification or above.[12] No additional factors are considered, meaning that FSM graduates are compared to their non-graduate FSM peers without consideration of other important differences between the two groups, such as A-level attainment.

Figure 19 below, from this study, compares the average earnings of **disadvantaged graduates** to the three key comparison groups outlined above. It shows that 15 years after the last year of KS4, graduates who received FSM:

- earn **£8,326 more** than **disadvantaged non-graduates**

- earn **£4,213 less** than **non-disadvantaged graduates**

- earn **£4,901 more** than **non-disadvantaged non-graduates**.

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[10] Defined as those in employment for at least one day in each of the 12 months of the tax year.

[11] Cohorts are combined where data is available. For years 1 to 10 after KS4, all cohorts of individuals are included in the analysis; however, for year 15, it is only the 2001/02 cohort (see the technical report for more information).

[12] In this paper, an individual is classed as a graduate if they have achieved a qualification of at least Level 6 in a UK HE institution.

Figure 1: Average earnings of FSM eligible and non-eligible individuals in employment with and without a degree for KS4 cohorts in 2001-02 to 2006-07 (tax years: 2003-04 to 2017-18)

Source: Figure 19 reproduced from Anderson and Nelson (2021)
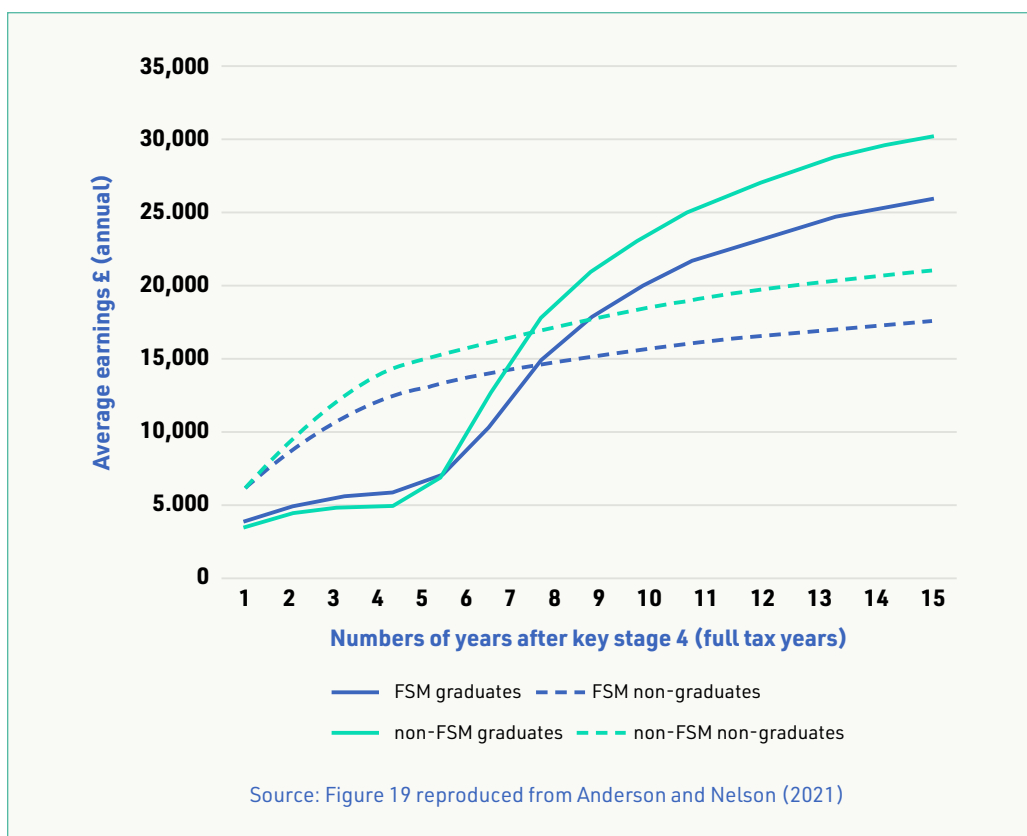
While this study presents strong evidence of earnings gaps between disadvantaged graduates and the three key comparison groups, it has an important limitation. It controls for just one individual characteristic at a time (in this case FSM), so does not account for key differences across the subgroups (for example, prior attainment, ethnicity or geography). It demonstrates that other individual characteristics do impact future earnings for graduates but these other characteristics are not explored in combination with disadvantage.

Additional Type 2 evidence with a counterfactual demonstrates the earnings gap for disadvantaged students. For example, one study (Britton et al., 2016) links educational background information held by the Student Loan Company to tax records to investigate average earnings for students who took out a student loan. As the maximum loan available to students is related to parental income, this is used to create a binary measure to determine whether students are from a high- or low-income household, and level of loan is, thus, used as a measure of socioeconomic disadvantage. Using this method, the paper finds that those from high-income households go on to earn 25% more than those from low-income households. However, this earnings gap falls to 10% when controlling for the specific HE institution[13] attended and the subject studied.

A further study (Britton et al., 2019) by the same researchers (using a similar methodology) further investigates the breakdown of this earning gap between disadvantaged and non-disadvantaged graduates. When controlling only for the subject group studied at university, there is little change from the raw earning gap. However, when controls are added for UCAS tariff score, ethnicity and gender, these account for the majority of the reduction in the earnings gap to around 10%. It concludes that the entry tariff score for HE courses appears to explain more of the average earnings gap between disadvantaged and non-disadvantaged graduates than their subject choice. This study also highlights the complexity of exploring disadvantaged graduates' earnings in combination with other interrelated factors, such as HE institution, subject choice and other background characteristics, but it does indicate that an earning gap remains when controlling for some of these characteristics in combination. It mentions several key limitations of the analysis, including not controlling for factors such as degree class achieved at university, employment sector, postgraduate study and geographical location, and the use of a blunt, binary measure of disadvantage.

[13]   This includes all officially recognised HE learning institutions where students are eligible for loans. These are defined by the government as either 'recognised' or 'listed'. This means students achieving their degrees at some Further Education Colleges will be included.tax year.

Another study (Belfield et al., 2018), using LEO data, explains that it is difficult to measure the earnings difference between disadvantaged and non-disadvantaged graduates due to differences in both background characteristics and HE courses chosen:

> *High-earnings subjects and institutions typically take students with higher prior attainment and from higher socio-economic backgrounds who would have gone on to have higher earnings anyway.*

It goes on to estimate the financial returns from different university degrees whilst controlling for background characteristics, and finds a large variation. For example, economics and medicine degrees increase average earnings by an average of 20% five years after graduation. A comparison of the relative returns from HE for disadvantaged and non-disadvantaged students by subject type[14] reveals that, in general, there is a high degree of correlation between the returns for students of high socioeconomic status (SES) and those of low SES by subject. However, several key outliers were also found which, should be kept in mind when considering financial returns from HE for disadvantaged students. For example, medicine and education were found to have higher relative financial returns for students from lower socio-economic backgrounds. This may be because these subjects lead to occupations with controlled wages, meaning that those from a high socioeconomic background are at less of an advantage.

Crawford and Van der Erve (2015) find similar patterns in their analysis of data from the British Cohort Study, which tracks individuals born in a particular week of April 1970 through their lives, up to and including the latest survey in 2012, when the individuals were aged 42. They break down post-HE outcomes for graduates whose father was in a higher managerial or professional occupation when they were aged 10 and those whose father worked in any other occupation. At age 26, the high-SES graduates earned just under 12% more, on average, than those from other backgrounds. Comparing graduates who go into similar jobs helps account for some SES differences, suggesting that part of the benefit of coming from a higher SES background is to enable access to higher-status jobs. However, even amongst similarly qualified graduates who work in the same occupations, there remain some significant differences in earnings by SES.

Campbell et al. (2022) use national administrative data to complete an extensive analysis of a cohort of 140,000 students moving from school to HE. They construct measures of student-to-university/subject match (which they call 'degree match'). They rank students nationally based on qualifications at the end of secondary school, and also rank degrees by the qualifications of the median students on each course and the median earnings of previous graduates from that degree course. The authors then look at 'match' by examining the difference in the percentile ranking of students and degrees to understand whether certain types of student are systematically entering degree courses which are ranked higher or lower than expected based on their entry qualifications. The analysis finds that in the top quintile of the achievement distribution, disadvantaged students are matched 8 percentile points lower than their more advantaged counterparts. These gaps do not appear to be driven by the subjects chosen at university. In summary, even among students with similar prior attainment, studying similar degree subjects, low-SES individuals tend to enter courses with lower earning potential.

Looking at a different but related measure of disadvantage, Lee (2022) uses a geographical measure of participation in HE (POLAR4[15]) and the Destination of Leavers from HE (DLHE) survey data to find that graduates from neighbourhoods with the highest university participation rate have, on average, higher earnings than those from the lowest-participation neighbourhoods, holding demographic features and university-related factors constant.

There is further international Type 2 evidence with a counterfactual supporting the hypothesis that disadvantaged graduates have different economic outcomes than non-disadvantaged students. One study (Tomaszewski et al., 2021) explores the relative returns from HE for those from higher socioeconomic and lower socioeconomic backgrounds in Australia, by combining two data sources (a longitudinal census and a household survey). It defines students from a high socioeconomic background as those with at least one parent in a managerial or professional occupation and defines all the remaining students in the cohort as being from a low socioeconomic background. Using the census data, it finds that a higher proportion of graduates from a high socioeconomic background are employed, and employed in a managerial/professional role, than their peers.

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[14] Subjects grouped by Common Aggregation Hierarchy (CAH) Level 2 (see this list for more information).

[15] The participation of local areas (POLAR) classification groups areas across the UK based on the proportion of young people who participate in higher education.

The analysis of the household survey shows that graduates from a high socioeconomic background report higher job satisfaction (on a self-reported scale of 0–10). However, the difference in job satisfaction between graduates from high and low socioeconomic backgrounds disappears around four years after graduation.

A small number of papers also use LEO data to compare HE to further education. Espinoza et al. (2020) explore labour market outcomes for people who completed their GCSEs in the 2002-03 academic year and focus on the difference in higher vocational/technical and academic programmes. They find that earnings for male degree holders from non-Russell Group universities are similar to those from higher vocational/technical education, and less than those from Russell Group universities. Earnings for female degree holders are found to be higher, regardless of university type, than those who achieved higher vocational/technical education qualifications. However, there are large differences by subject area and also by gender. In Espinoza and Speckesser (2022), earnings are further analysed for those who completed a Level 3 qualification. Higher-level qualifications lead to better earnings than finishing education at Level 3 for both men and women. However, some Level 4 and 5 qualifications have higher earning potential for particular groups, and this may be due to the employment outcomes associated with particular subjects/courses.

Overall, the best available evidence on this research question highlights a clear earnings gap between disadvantaged graduates and disadvantaged non-graduates (a finding supported by our own data analysis discussed in Section B). Furthermore, it shows that the relative returns from HE differ between disadvantaged graduates and non-disadvantaged graduates.

There is some evidence that part of the earnings gap between disadvantaged and non-disadvantaged graduates is associated with both subject choice and university attended. In a separate analysis (not specific to disadvantaged status), it has been shown that characteristics such as ethnicity, prior attainment and gender impact graduate earnings. There is, therefore, scope for further research to combine these characteristics with disadvantage status to explore the factors driving the earnings gap in more depth.

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[15] The participation of local areas (POLAR) classification groups areas across the UK based on the proportion of young people who participate in higher education.

A2. How does HE impact the future wellbeing of disadvantaged students?

The rapid evidence review identified 15 papers that discussed the impact of HE on the wellbeing outcomes of disadvantaged graduates. Three of these papers included some controls/counterfactual.

OfS standard of evidence	Number of papers reviewed
Type 1 – Narrative	0
Type 2 – Empirical enquiry	10
Type 2 with counterfactual	3
Meta-analysis	2
Total	**15**

Headline findings:

- There is some research showing that an undergraduate degree is linked to **improvements in mental health** for graduates from low socioeconomic backgrounds, compared to graduates from high socioeconomic backgrounds (Tomaszewski et al., 2021).

- However, there is a **lack of evidence** on the wellbeing value of HE that is specific to disadvantaged graduates.

- There is research into the wellbeing of graduates in general, which can be used to infer the wellbeing value of HE for disadvantaged graduates.

- There is a lack of consensus in the evidence on how much of the difference in reported wellbeing in graduates and non-graduates is due to differences in income, rather than differences from attending HE (Department for Business, Innovation & Skills 2013; HEFCE, 2017; Striessnig, 2016).

- In general, there is some evidence that people with **lower levels of education** are more likely to **report feeling worthless** and are less positively engaged in their daily activities (Nikolaev, 2018).

Best available evidence:

One paper (Tomaszewski et al., 2021) presenting Type 2 research with a counterfactual (also referenced in Section A1 above) compares the wellbeing of disadvantaged graduates to that of non-disadvantaged graduates. Through statistical analysis of the responses to an Australian household survey, this paper finds that graduates from a low socioeconomic

background report better improvements in mental health associated with attending university compared to those from a high socioeconomic background, although this difference is not statistically significant. Self-reported financial prosperity is used to indicate wellbeing in this study, with respondents asked how well they feel they are able to meet their financial needs. Attaining a university degree is found to increase perceived financial prosperity (compared to peers who did not attend university) for graduates from a low socioeconomic background but does not have the same impact for those from a high socioeconomic background. These two pieces of evidence are taken together to conclude that, in relative terms, those from a low socioeconomic background appear to benefit more from attending university. While this study provides some evidence of a wellbeing impact of HE, it relies on a self-reported survey to determine wellbeing, which could easily be skewed due to differences in expectations between the comparison groups. In addition, while some factors – such as age and employment status – are controlled for, other individual characteristics, including current income, are not. The differences observed could therefore be due to differences in earnings, or other differences between the disadvantaged and non-disadvantaged cohorts.

The other evidence related to this research question explores differences in wellbeing between graduates and non-graduates in general, rather than focusing specifically on disadvantage.

One meta-analysis (Department for Business, Innovation & Skills, 2013) repeatedly found evidence that HE is associated with both increased wellbeing and better health outcomes. For example, it finds that HE is associated with longer life expectancy (on average, male graduates live eight years longer than men without upper secondary education). It also refers to a study from the Netherlands that found that graduates are three times less likely to drink excessively and a US study that showed that attending college is associated with a 5–15% increase in the likelihood to engage with preventative healthcare. Furthermore, the paper finds evidence that HE is related to better mental health outcomes. For example, one study finds that, aged 30, university graduates are around one-third less likely to suffer from depression than those whose highest level of qualification is A-levels. It also highlights evidence that graduates (those with any tertiary education attainment) across OECD countries report higher levels of general life satisfaction, even when controlling for age, gender and income levels.

This meta-analysis presents a range of evidence suggesting further health and wellbeing benefits of attending HE. Some of the studies find that these conclusions hold when including a control for income level. While the evidence presented in this meta-analysis suggests that there are likely to be non-financial benefits associated with attending HE, it should be noted that these high-level summaries of literature do not provide in-depth analysis of the methodological limitations of the evidence presented, so the quality of evidence could vary. Additionally, as this paper brings together studies from a wide range of countries, key terms such as 'higher education' and 'graduates' do not have consistent definitions.

Another meta-analysis (Hunt & Atfield, 2019) finds that HE could be linked to certain negative wellbeing outcomes. One paper discussed in this study, which used data from the British Household Panel Survey from 1991 to 2007, found an increase in the number of 'overeducated' individuals over time. It defined overeducation as where an individual's education level (years in education) was more than one standard deviation above the average for someone in the same occupational group or industry occupation. This would suggest that an individual's skill level is higher than that required for their current occupation. Analysis found that overeducated individuals were less likely to be satisfied with their life than their peers.

Moreover, HEFCE (2017) provides some empirical evidence (Type 2) from the ONS Annual Population Survey which included questions on life satisfaction, anxiety and happiness, to explore the relationship between these outcomes and HE. They found that graduates (defined in this paper as anyone with a Level 4 qualification or above) reported higher levels of happiness and satisfaction than non-graduates. However, when controlling for income, there was little difference in positive wellbeing between graduates and non-graduates (see Section B for further analysis of the relationship between wellbeing and income). In addition, this paper finds evidence of a negative wellbeing impact of HE. The analysis shows that, on average, graduates have higher anxiety levels than non-graduates. Even when including income in the analysis (by plotting average income against average anxiety score), graduates have consistently reported higher anxiety levels than non-graduates at an equivalent income level.

Finally, there is also some empirical evidence on the association between HE and self -actualisation, or people feeling they have 'achieved their potential'. The best available evidence found to address this aspect of the research question is a study that uses a longitudinal Australian household survey to analyse self-worth (Nikolaev 2018). The survey asks people how often they feel worthless and hopeless. The study concludes that those with lower levels of education are more likely to report feeling worthless and hopeless about their lives and also tend to report less positive engagement in activities in their daily lives. The study combines a subset of the survey questions into a single measure of 'eudaimonic happiness' and finds that, on average, graduates score themselves at 4.6 out of 5, whereas those with only 8 years of education score themselves at 4.3.

Overall, there is a lack of research into the impact of HE on the wellbeing of disadvantaged students specifically. One piece of Type 2 evidence with a counterfactual does find that graduates from a low socio-economic background benefit more in relative terms from increased perceived financial prosperity.

The next best evidence available relates to the wellbeing outcomes of graduates as a whole, not disadvantaged graduates specifically. This evidence points to mixed health and wellbeing outcomes associated with attending HE: although there is evidence of improved physical health and life satisfaction for graduates, there is also evidence of negative wellbeing outcomes associated with overeducation, and higher levels of anxiety among graduates. There is also some evidence that, for the graduate cohort as a whole, HE may be associated with higher levels of self-actualisation, although the extent to which income affects this is not well investigated.

A3. How does HE impact disadvantaged students' attitudes towards other people and communities, and how does HE impact non-disadvantaged students' attitudes towards disadvantaged people?

The rapid evidence review identified two meta-analyses that discussed the impact of HE on the attitudes of graduates.

OfS standard of evidence	Number of papers reviewed
Type 1 – Narrative	0
Type 2 – Empirical enquiry	0
Type 2 with counterfactual	0
Meta-analysis	2
Total	**2**

Headline findings:

- There is a **lack of research** on the impact of HE on the attitudes of disadvantaged graduates, and the attitude of their peers toward them.

- There is some research on **graduates in general**, not specific to the disadvantaged cohort, that shows a **positive impact on attitudes** toward others.

Best available evidence:

The rapid evidence review did not identify any evidence that specifically considered disadvantaged students but, as in other sections, the findings for graduates as a whole can be linked indirectly to disadvantaged graduates.

One meta-analysis (Department for Business, Innovation & Skills, 2013) presents evidence that HE is associated with more positive attitudes towards other people and communities. For example, one study found a 28% increase in a measure of racial

tolerance amongst graduates (compared to those educated to A level) at age 33. This finding was based on an analysis of survey responses from two British cohorts born between 1958 and 1970. Similarly, a study across European countries found that HE increases interpersonal tolerance and trust by 3.1%. The same study found that graduates were more likely to have positive views on immigration than their peers who did not complete HE.

Another meta-analysis (Hunt & Atfield, 2019) presented similar evidence suggesting that graduates have a more positive view towards other people than non-graduates. One study analysed the British Social Attitudes Survey responses between 2010 and 2013 and found that responses to questions about immigration varied significantly with education level. For example, while around 60% of respondents with either no qualifications or GCSEs as their highest level of qualification thought that immigration generally had a negative impact on the economy, only 20% of graduates shared this belief. There was also a large disparity between the two groups when asked about the positive cultural benefits of immigration, with graduates being more likely to view immigration positively. These differences remained statistically significant when individual characteristics were controlled for. Another study, using analysis from the 2012 EUCROSS project which surveyed a large sample of people across Europe, concludes that those who have completed tertiary education were more likely to perceive a diverse society positively.

Overall, there is some evidence from meta-analyses that HE is associated with more positive attitudes towards others, particularly with regard to immigration. However, these findings relate to all graduates and do not explore whether the impact varies according to level of disadvantage.

A4. To what extent does HE for disadvantaged students contribute to social mobility?

The rapid evidence review identified 12 papers that discussed the impact of HE on social mobility. Three of these papers included a counterfactual. Additionally, two meta-analyses explored evidence on the relationship between HE and social mobility.

OfS standard of evidence	Number of papers reviewed
Type 1 – Narrative	1
Type 2 – Empirical enquiry	5
Type 2 with counterfactual	4
Meta-analysis	2
Total	**12**

Headline findings:

- There is evidence that **parental education level** is associated with how **likely children are to go to university** (Department for Business, Innovation & Skills, 2013). This suggests that a greater number of people completing HE could contribute to social mobility.

- Other evidence shows that, while graduates from **lower socioeconomic** backgrounds **progress** into the higher social classes, they tend to occupy **lower earning roles** (Elias et al., 2021).

- While increased **geographical mobility** could contribute to social mobility by opening up employment opportunities that would otherwise be unavailable, high-quality research shows that graduates from **lower socioeconomic backgrounds are less likely to move** than graduates from a higher socioeconomic background (Britton et al., 2021). This may in turn impact the earning gap between disadvantaged and other graduates.

- In addition, many **economic outcomes can be indirectly linked to social mobility**. For example, as discussed above, there is strong quantitative evidence showing that graduates who were on FSM (suggesting lower parental income) go on to earn more than non-graduates who were on FSM (Anderson & Nelson, 2021).

Best available evidence:

The most robust evidence (Britton, Drayton & van der Erve, 2021) relating to this research question uses LEO data to measure the 'mobility rate' for disadvantaged students in England, and how this varies by HE institution type and subject choice. This mobility rate takes two factors into account: the access rate to university (proportion of intake who were FSM at age 16), and the success rate of those FSM pupils (proportion of FSM students who are in the top 20% of earners at age 30). Across all HE types and university subject choices, this study finds strong evidence that attending university is associated with higher social mobility: 22% of FSM graduates were in the top quintile of earners at age 30 compared to only 6% of FSM non-graduates. However, the overall mobility rate used in this paper also takes into account the access rate to university amongst disadvantaged students, finding that only 5.6% of the FSM cohort attended HE compared to a cohort average of 12.5%. The combination of these factors gives FSM students as a group a mobility score of 1.3.

The paper goes on to explore how this score changes by institution and subject type and shows that, in general, the best mobility scores for less selective universities are those based in large cities – for example, Queen Mary University, London has a score of 6.8 – and for subjects such as computing, maths and pharmacology (for example, 4.2 for pharmacology). It also controls for some differences in background characteristics between pupils (including KS4 prior attainment, ethnicity and gender), finding that these have little affect on the mobility score rankings either of subjects or HE institutions. Overall, this paper provides quantitative evidence that HE can contribute to social mobility among disadvantaged students, but there are large variations by HE institution and subject. Although it focuses specifically on university types (such as Russell Group and pre-1992 universities) in its analysis, the accompanying summary paper also mentions the need for more robust research into alternative routes such as FE and apprenticeships, which were also shown to drive social mobility. Unlike other papers included in the rapid evidence review, the analysis in this paper focuses on *access* to university in addition to post-entry outcomes.

There is some Type 2 evidence that HE is associated with higher levels of social mobility, from a study by the University of Warwick (Elias et al., 2021). This study analysed survey responses from 6,000 graduates 10 years after finishing their HE course. The analysis compares the employment type and role of the graduates' parents with the current occupation of the graduates themselves, as a measure of social

mobility. It finds that 62% of graduates came from a professional or managerial background, while 86% of the graduates themselves are now in professional or managerial roles. The study argues that this higher percentage demonstrates social mobility within this cohort. However, other analysis within this study shows that the sample is biased towards more successful graduates and is, therefore, not a true representation of social mobility across the graduate body as a whole. The authors also note that socioeconomic background appears to impact other factors related to career progression, such as institution attended, subject choice and degree class. It may, therefore, be these factors that affect graduate careers. These factors are difficult to separate (as demonstrated in Section A1), meaning the true impact of HE on social mobility for disadvantaged students is difficult to measure.

Strong evidence relating to geographical mobility is also explored under this research question. A study combining the LEO dataset (including individual characteristics, education level and geographical area at age 16) with DWP Customer Information Spine records (including the location of addresses linked to tax records for individuals) shows different levels of geographical mobility between groups with different individual characteristics and education levels (Britton et al., 2021). It finds that, among graduates, those who move were able to increase their income because they tended to move to places with high average earnings and better labour market opportunities. Importantly, it also finds a disparity in geographical mobility between disadvantaged and non-disadvantaged graduates. Comparing only the graduate groups, it finds that around 50% of graduates from the highest SES quintile still live in their area of origin at age 30, while this increases to around 80% for those from the lowest SES quintile. It also notes that graduates from a high socioeconomic background are 12 percentage points more likely to move than their peers who do not attend university, but that this falls to only four percentage points when comparing graduates

and non-graduates from the lowest socioeconomic background group. When considering graduate and non-graduate cohorts as a whole, this paper finds that, on average, graduates are 10 percentage points more likely to move by age 27 than non-graduates. This suggests that the mobility of graduates from higher economic backgrounds is largely driving this 10-percentage-point difference. The contrast between these values for those from low and high socioeconomic backgrounds is important, particularly given that other individual characteristics – including initial location, ethnicity and prior attainment – are controlled for. This suggests that HE has less of an effect on geographical mobility for those coming from a low socioeconomic background, which is likely, in turn, to impact the earning potential of disadvantaged graduates.

Overall, there is some empirical evidence that HE can increase social mobility. When considering access to HE in addition to graduate outcomes, one paper finds that HE is associated with increased social mobility for disadvantaged students, but that this varies by both subject choice and HE institution. There is strong evidence that disadvantaged graduates are less geographically mobile than graduates from higher socioeconomic backgrounds.

In addition to the papers explored in this section, the studies referenced in Section A1 could also be used to add indirect evidence to the social mobility research question. Section A1 concludes that there is evidence that HE is associated with higher earnings for disadvantaged students than their peers who did not attend university. Since measures of disadvantage such as receiving FSM can be used to estimate parental income, further research could compare the earnings of disadvantaged graduates to estimated parental income and thus be used to indicate social mobility.

A5. What are the broader social, environmental and economic benefits of disadvantaged students attending HE (not just those attributable to the individual attending), and what is the financial value of these?

The rapid evidence review identified three papers that discussed the broader societal impact of disadvantaged students attending HE, including one empirical study and two meta-analyses.

OfS standard of evidence	Number of papers reviewed
Type 1 – Narrative	0
Type 2 – Empirical enquiry	1
Type 2 with counterfactual	0
Meta-analysis	2
Total	**3**

Headline findings:

- There is a **lack of research** showing the broader societal impacts of disadvantaged students attending HE.

- However, more **general** research on the **societal impacts** of HE has found a number of **benefits**, including in political engagement (Department for Business, Innovation & Skills, 2013; Ma, Pender & Welch, 2016), public health and crime (Department for Business, Innovation & Skills, 2013).

- Attempts to calculate the financial value of these broad societal benefits of HE have valued them at a similar level to the graduate earnings returns (Department for Business, Innovation & Skills, 2013).

Best available evidence:

The best available evidence in this section comes from literature reviews which bring together a wide range of evidence on the benefits of HE for society. This evidence explores the overall benefits of HE, rather than specific benefits from disadvantaged students attending HE.

One review (Department for Business, Innovation & Skills, 2013) shows the impact of HE on political engagement, finding that 61% of adults without A-level education (or equivalent) vote in UK elections, but this increases to 81% for those with a degree. It also references a number of studies showing that HE is associated with higher levels of community engagement and volunteering. This is evidenced by a study of UK cohorts born in 1958 and 1970, which found that graduates were 1.5 times more likely to be members of a charitable organisation than those whose formal education ended with A levels.

In addition, this literature review also presents evidence of the wider economic benefits of HE. One study estimated that the value of the indirect effects of education was of the same order of magnitude as the direct earnings effects. This is supported by another study, which estimates that the health-related benefits of attending college in the US are equivalent in value to the average annual graduate earning premium. While this review presents a variety of evidence that HE is associated with many other societal benefits, the methodological limitations of the studies referenced are not fully explored, and it is noted that the economic valuation of these benefits is particularly difficult to assess accurately.

Overall, there is evidence of broader societal benefits from HE. However, the rapid evidence review found no literature specific to the societal benefits deriving from disadvantaged students attending HE.

OVERALL FINDINGS FROM THE RAPID EVIDENCE REVIEW

Much of the existing literature on the economic value of HE for disadvantaged young people focuses on earnings The research suggests that disadvantaged graduates, on average, go on to earn more than disadvantaged non-graduates. However, the average earnings of disadvantaged graduates are lower than the average earnings of non-disadvantaged graduates (around £4,200 less at 15 years after KS4). Some limited research has been conducted into how subject choice and the specific university attended impact disadvantaged graduates' future earnings (for example, one study found that medicine and education have higher relative financial returns for students from lower socio-economic backgrounds).

The literature exploring wellbeing and health outcomes tends to look at graduates overall, with very little focus specifically on disadvantaged graduates. However, there is some evidence that graduates from a low socioeconomic background report a higher relative increase in perceived financial prosperity associated with attending university than those from higher socioeconomic backgrounds.

There is evidence that attending HE is associated with increased social and geographical mobility for disadvantaged young people. However, no evidence was found relating to the impact of HE for disadvantaged graduates on attitudes to other people and communities.

GAPS IDENTIFIED IN THE EXISTING RESEARCH

The rapid evidence review outlined above highlighted four key areas where the existing research does not fully answer the five research questions:

1. There is little evidence on whether outcomes depend on the **higher-level education pathway** pursued. For example, how do outcomes for disadvantaged students who study for a Level 6 qualification in a further education college, or who complete a degree apprenticeship, compare with outcomes for those who pursue a traditional university route? This has serious implications for policy and individual decisions due to the large difference in the cost of each pathway.[16]

   The cost-benefit element of the education pathway pursued is also worth considering here to explore the value of the costs of university in terms of the economic and wellbeing benefits experienced.

   Suggested research: Further research should compare the outcomes of disadvantaged graduates from different higher-level education pathways. This should account for the impact of important differences between graduates from different pathways, such as prior attainment. In particular, research could compare the outcomes of graduates who studied similar courses but at different types of institution. This could inform a wider cost-benefit analysis looking at the returns from different higher-level pathways for disadvantaged students.

2. There is little exploration of the **factors that cause the observed disparity** in outcomes between disadvantaged and other graduates. For example, what role is played by factors such as prior attainment, region, school type, subject choice and degree of economic disadvantage?

3. **Suggested research:** Further research should look at the outcomes for more detailed subgroups of graduates, taking into account all the factors that have been shown to correlate with outcomes. This could include regression analysis to estimate the impact of each factor on outcomes. Specifically, this may reveal how much of the disparity between the outcomes of disadvantaged graduates and their peers is explained by other factors, and how much is a result of coming from a socioeconomically disadvantaged background.

4. Similarly, there is little evidence on how the **intersection of disadvantage with other characteristics**, such as ethnicity and gender, impacts long-term outcomes.

   Suggested research: Further research should explore the intersections of disadvantage with other individual characteristics. This should include an analysis of outcomes over time to reveal whether there are specific groups of disadvantaged graduates whose outcomes follow a notably different trend.

5. Finally, there is a general lack of high-quality evidence on the value of HE for disadvantaged graduates in terms of **'softer' outcomes**, such as wellbeing and attitudes. However, these are often found to be related to economic outcomes.

   Suggested research: Further research should explore new methods to measure softer outcomes for disadvantaged graduates. This should also account for the impact of economic returns from HE on softer outcomes.

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[16] A recent report by The Sutton Trust noted that, in addition to traditional university HE, apprenticeships and further education were also routes to social mobility. The report therefore calls for further research to consider these non-traditional types of HE.

B. DATA FROM UK HOUSEHOLD SURVEYS

The evidence presented in Section A is plentiful on earnings and labour market outcomes, but scarce on 'softer' outcomes such as wellbeing (Section A2), self-actualisation (Section A3) and social cohesion (Section A4). To fill this gap, we turned to the UK Household Longitudinal Survey – Understanding Society[17] (USoc), as it is a rich source of data on individuals' physical health, mental wellbeing, individual development and social/community cohesion.

At the time this study was initiated, 10 years of data from this survey were available (from Wave 1 in 2009–10 to Wave 10 in 2018–19). USoc sample sizes are impressive – approximately 40–50 thousand respondents are surveyed each year. The survey is representative of the entire UK adult (16+) population.

FINDINGS

Descriptive statistics

Table 1 summarises average outcomes in the USoc data by education level. At a first glance, respondents with HE qualifications fare much better, not just in terms of household income (£5,069 per month, the highest across the board), but also personal wellbeing (life satisfaction) general health, mental health, involvement with people and the community (trust, volunteering, number of close friends), loneliness (which is less frequent), social mixing (diversity of friends), confidence and resilience. The few

exceptions where HE graduates do not have the best average outcomes are talking to neighbours, a sense of belonging to their neighbourhood, and minutes of physical activity per week.

Many of these outcome differences are likely due to the more privileged backgrounds of those who attend HE (rather than a result of attending HE). We examine demographics in Table 2 to assess whether this may be the case.

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[17] https://www.understandingsociety.ac.uk/

Table 1. Outcomes in Usoc by education level

Highest level of education achieved	Degree	Other HE	A level etc	GCSE etc	Other qual.	No qual
Sample size	104451	50387	92353	90524	40944	59007
Monthly household income, £	5069	3927	3836	3443	2813	2283
Satisfaction with life overall (1 to 7)	5.31	5.22	5.15	5.09	5.07	5.08
General health, 5-category scale	3.71	3.47	3.50	3.39	3.07	2.77
Mental health problems – GHQ index, 0(best) to 36(worst)	10.71	11.01	11.08	11.28	11.26	11.66
Short Warwick-Edinburgh Mental Wellbeing Scale, 7 to 35	25.57	25.22	24.80	24.43	24.76	24.42
Minutes of moderate+ intensity physical activity per week	412.67	481.92	581.17	577.66	547.77	300.10
Health limits moderate activities	1.20	1.33	1.29	1.35	1.55	1.77
Mental health meant accomplished less	1.55	1.63	1.67	1.71	1.79	1.99
Health interfered with social life	1.54	1.67	1.68	1.73	1.85	2.08
Last 4 weeks: had a lot of energy	3.33	3.26	3.29	3.24	3.14	2.92
Last 4 weeks: felt downhearted and depressed	1.90	1.93	1.99	2.01	1.99	2.08
Volunteered in the last 12 months, yes/no	0.29	0.23	0.18	0.16	0.13	0.08
Hours spent volunteering in last 4 weeks	3.14	2.61	1.96	1.65	1.56	0.93
I believe most people can be trusted	2.21	2.00	1.87	1.79	1.86	1.78
I trust people in this neighbourhood	3.81	3.73	3.61	3.58	3.68	3.70
I talk regularly to neighbours	3.58	3.75	3.60	3.70	3.87	3.91
I feel like I belong to this neighbourhood	3.72	3.77	3.69	3.73	3.84	3.95
Number of close friends, top-coded	4.49	4.22	4.18	4.01	3.82	3.52
I can rely on my friends	3.23	3.24	3.24	3.22	3.16	3.17
I can rely on my family	3.42	3.38	3.42	3.38	3.40	3.48
How often feels lonely	1.39	1.44	1.49	1.48	1.46	1.48
Friends with diverse age	2.03	2.07	1.99	2.03	2.06	1.97
Friends of diverse race	1.88	1.74	1.77	1.68	1.58	1.45
Friends with diverse level of education	2.18	2.01	1.96	1.89	1.86	1.77
Friends with diverse income levels	2.69	2.60	2.63	2.61	2.55	2.44
Friends living in different areas	3.18	2.94	2.85	2.74	2.72	2.47
Easy to stick to aims and accomplish goals	3.07	3.02	3.00	2.95	2.96	2.93
Confident can deal with unexpected events	3.20	3.15	3.11	3.05	3.04	2.95
Can usually handle what comes my way	3.26	3.22	3.18	3.13	3.14	3.07
I can usually solve my own problems	3.26	3.20	3.22	3.19	3.22	3.13
I have been losing confidence	1.68	1.71	1.73	1.76	1.72	1.77
I have been dealing with problems well	3.64	3.61	3.55	3.50	3.59	3.54
Subjective financial situation in the present	4.05	3.91	3.81	3.71	3.71	3.66
Subjective financial situation in the future	2.15	2.11	2.16	2.13	2.00	1.93

The demographic differences between HE graduates and the remainder of the sample are even more pronounced. Respondents with other or no qualifications are considerably older (probably due to the recent expansion of access to HE) and, unsurprisingly, also more likely to be widowed, retired, physically less active or have health problems. They are also somewhat more religious (which may also fit into the age trend). Respondents with an HE qualification are much more likely to have educated parents, be married, be employed, come from an ethnic minority and belong to a higher socioeconomic class both in terms of occupation and income.

Table 2, therefore, confirms that people with HE qualifications generally come from a higher socioeconomic background; for example, 23.6% of those who have a degree also have a father with a university degree, compared to only 0.8% of those who have no qualifications. Of those with a degree, 66.7% have a high-SEC job and 74% have above-median income; these proportions reduce with declining level of education to only 6.6% and 20.8% respectively for those with no qualifications. This may explain, in whole or in part, the differences in the income, wellbeing and self-actualisation outcomes presented in Table 1.

Table 2. Demographics by education level in USoc

Highest level of education achieved	Degree	Other HE	A level etc	GCSE etc	Other qual	No qual
Age	44.94	49.38	40.82	43.60	57.38	61.57
Number of adults aged 16+ in household	2.29	2.26	2.56	2.47	2.19	2.19
Number of children aged 0-15 in household	0.66	0.57	0.61	0.70	0.41	0.37
Father has a university degree	23.6%	9.9%	9.9%	5.1%	3.0%	0.8%
Father has no qualifications	23.6%	35.2%	35.7%	43.7%	57.0%	72.7%
Mother has a university degree	15.2%	5.9%	7.4%	2.9%	1.7%	0.4%
Mother has no qualifications	26.0%	38.9%	37.3%	47.6%	65.3%	79.7%
Male	47.5%	39.3%	51.9%	44.2%	46.9%	40.3%
Married or civil partner	60.5%	56.9%	43.5%	46.6%	57.7%	50.6%
Widowed or surviving civil partner	2.1%	5.7%	2.8%	3.6%	10.6%	18.4%
Paid employment (full- or part-time)	63.8%	54.5%	50.3%	46.5%	34.7%	15.4%
Unemployed	3.1%	3.4%	4.7%	6.9%	5.9%	6.1%
Retired	14.1%	24.0%	13.9%	16.6%	37.5%	53.0%
Has any long-standing illness or impairment	26.1%	34.0%	28.5%	31.9%	46.3%	55.5%
Rural area	22.4%	26.7%	23.4%	24.1%	24.5%	24.2%
Religious	56.4%	58.9%	51.9%	52.5%	61.6%	67.7%
White	78.3%	84.4%	83.3%	85.1%	86.4%	83.3%
Higher and middle SEC (NS-SEC 1-5)	66.7%	46.2%	35.3%	26.7%	18.3%	6.6%
Lower SEC (NS-SEC 6-8)	8.6%	17.2%	27.6%	29.1%	23.8%	12.9%
NS-SEC - not classified	24.8%	36.6%	37.1%	44.2%	57.9%	80.5%
Income above median	74.0%	59.4%	50.4%	43.5%	35.7%	20.8%
Income below median	26.0%	40.6%	49.6%	56.5%	64.3%	79.2%
Physically active (150+ minutes per week)	53.9%	48.9%	51.0%	46.3%	39.4%	25.9%

Moving on to the second type of cross-tabulation, we can see in Table 3 below how certain educational characteristics and attitudes to education vary between richer and poorer respondents. Note that the figures refer to income as an adult and therefore differ from the evidence review which normally looks at parental income for school children.

Disadvantaged respondents (below-median income as an adult) are not only less likely to be educated themselves, but also less likely to come from an educated family. Respondents aged 16–19 from disadvantaged households were 16 percentage points less likely to say they wanted to pursue HE after school and also self-reported a lower likelihood of entering either higher or further education.

Table 3. Education-related statistics by income-based disadvantage

Highest level of education achieved	Income above median	Income below median
Sample Size	220484	220467
Respondent's highest educational qualification		
University Degree or higher (Levels 6-8)	35.1%	12.5%
Other HE (Levels 4-5)	13.6%	9.4%
A-levels or equivalent (Level 3)	21.1%	21.0%
GCSE or equivalent (Levels 1-2)	17.9%	23.5%
Other qualifications	6.7%	12.1%
No qualifications	5.6%	21.5%
Father's educational qualifications		
he did not go to school at all	1.4%	3.9%
he left school with no qualifications or certificates	33.8%	47.1%
he left school with some qualifications or certificates	22.9%	20.4%
he gained post school quals or certs (e.g. city & guilds)	26.9%	20.4%
he gained a university degree or higher degree	14.5%	7.4%
other	0.4%	0.8%
Mother's educational qualifications		
she did not go to school at all	2.1%	6.3%
she left school with no qualifications or certificates	36.3%	52.5%
she left school with some qualifications or certificates	32.3%	24.1%
she gained post school quals or certs (e.g. city & guilds)	19.5%	12.1%
she gained a university degree or higher degree	9.5%	4.5%
other	0.3%	0.5%
What would you want to do after school/college (ages 16-19)		
get a full-time job	10.1%	18.1%
stay at school or sixth-form college	4.5%	6.0%
go to/stay in further education college	5.4%	10.1%
go to university or HE institution	69.4%	53.4%
get a job and study (at the same time)	2.4%	3.6%
get an apprenticeship	5.6%	6.8%
do some other type of training	0.7%	0.9%
do something else	1.9%	1.2%

Highest level of education achieved	Income above median	Income below median
Likelihood of entering further education (ages 16-19 only)		
very likely	72.6%	68.5%
fairly likely	19.0%	20.8%
not very likely	4.7%	6.0%
or not at all likely?	2.2%	2.9%
depends	1.6%	1.7%
Likelihood of entering HE (ages 16-19 only)		
very likely	66.7%	56.5%
fairly likely	20.3%	23.3%
not very likely	7.0%	10.5%
or not at all likely?	4.1%	6.8%
spontaneous: depends	1.8%	2.9%
How important is education to your sense of who you are?		
very important to my sense of who I am	27.7%	27.5%
fairly important to my sense of who I am	45.5%	40.6%
not very important to my sense of who I am	20.5%	21.5%
not at all important to my sense of who I am	6.2%	10.4%

It could be the case that a propensity to follow a certain educational pathway is determined even before leaving compulsory secondary education. Therefore, it is also interesting to look at attitudes to education among children aged 10–15, which were investigated as part of the youth questionnaire of the USoc survey.

This data is presented in Table 4 below. Young people coming from the 25% poorest families are over 10 percentage points less likely to see themselves as having finished university or college in 10 years. They are almost twice as likely as the top 25% to have skipped classes in school.

Table 4. Attitudes to the education of young people aged 10–15

	Bottom 25% of income	Middle 50% of income	Top 25% of income
Sample Size	9369	18746	9379
Monthly household income, £	1913	3610	7387
Two adults in household	46.1%	52.6%	67.5%
Only child	22.7%	29.7%	35.6%
4 or more children in household	20.3%	7.5%	2.3%
Rural area	15.2%	23.2%	28.1%
White	58.7%	78.3%	84.7%
Never had a fight in the past month	78.9%	81.2%	85.4%
It is very important to do well in GCSEs	77.6%	76.5%	80.3%
Would like to go to college or university after school	92.5%	92.5%	95.4%
Has skipped classes without permission	10.5%	8.4%	5.5%
Sees oneself in 10 years having finished university or college	18.7%	21.4%	29.0%

From these exploratory descriptive statistics, it is reasonable to conclude that HE/FE does offer better outcomes, but that attending university/college is also associated with numerous demographic differences, many of which indicate a privileged socioeconomic background. These differences are known from other studies to also have a positive relationship with wellbeing, health, self-actualisation, trust, volunteering and other outcomes of interest.

Therefore, a natural next step is to use regression analysis to control for these factors as much as possible and isolate a correlation that is more indicative of the effect of HE – rather than background factors – on the outcomes.

Regression analysis

In Table 5 below, we show the results of fixed effects regressions of our key outcome variables on educational attainment and all the control variables mentioned in the methodology section, except for income (whose effect we want to include as it is also heavily affected by education). Each outcome variable is regressed separately and the coefficients of education are presented in the respective row. The reference group is 'no qualifications'; all coefficients represent the difference in the respective outcome relative to the reference group. The sample for the regression is the whole adult population of the survey; how the results vary for disadvantaged and non-disadvantaged groups is examined in Tables 6A and 6B later in this report.

Table 5. Fixed effects regression results without controlling for income

Outcome/coefficients	Degree	Other HE	A level etc	GCSE etc	Other qual.	No qual
Satisfaction with life overall (1 to 7)	0.043	-0.007	0.029	0.079	-0.050	0.000
General health, 5-category scale	0.102*	0.076	0.105*	0.053	0.031	0.000
Mental health problems - GHQ index, 0(best) to 36(worst)	0.288	0.339	0.199	-0.147	0.122	0.000
Short Warwick-Edinburgh Mental Wellbeing Scale, 7 to 35	0.565	0.324	0.478	0.451	0.359	0.000
Physically active (150+ minutes/week)	-0.157	0.091	-0.232	-0.112	-0.070	0.000
Volunteered in the last 12 months, yes/no	0.022	0.061+	0.054+	0.074*	0.026	0.000
I trust people in this neighbourhood	-0.060	0.077	-0.069	-0.078	0.044	0.000
I talk regularly to neighbours	-0.190+	-0.092	-0.066	-0.039	-0.044	0.000
I feel like I belong to this neighbourhood	-0.154+	-0.130	-0.098	-0.041	-0.055	0.000
How often feels lonely	-0.500*	-0.611*	-0.560*	-0.229	0.052	0.000

Outcome/coefficients	Degree	Other HE	A level etc	GCSE etc	Other qual.	No qual
Number of close friends, top-coded[18]	0.734**	0.690**	0.624**	0.674**	0.114	0.000
Friends with diverse age	0.211+	0.262*	0.155	0.198+	0.102	0.000
Friends of diverse race	0.371**	0.341**	0.381**	0.253*	0.191*	0.000
Friends with diverse levels of education	0.199	0.137	0.067	0.021	0.173+	0.000
Friends who do not have a job	-0.607**	-0.515**	-0.364**	-0.239*	-0.196*	0.000
Friends with diverse income levels	0.159	0.045	0.069	0.131	0.010	0.000
Friends living in different areas	0.266+	0.121	-0.046	-0.025	-0.146	0.000
I have been losing confidence	0.054	0.065	0.048	0.004	-0.016	0.000
I have been dealing with problems well	0.164	0.104	0.171	0.186+	0.103	0.000

Note: Coefficients of control variables are omitted for brevity. Fixed-effects model with heteroskedasticity-robust standard errors used. Stars represent statistical significance levels: $+p < 10\%$, $*p < 5\%$, $**p < 1\%$.

Most outcomes under consideration were not statistically significantly correlated with educational attainment after including all the control variables previously mentioned, with a few notable exceptions:

- a strong negative relationship with loneliness (which is on a 3-point scale in USoc)

- a positive relationship with a greater number of close friends and with more diverse friends in terms of age, race and place of residence

- a negative and significant relationship with proportion of friends who do not work (meaning an increased proportion of friends have a job)

- a significant positive association with general health.

Therefore, the most prominent benefits associated with HE from the analysis above relate to socialising and mixing (less loneliness, more close friends and more diverse friends).

However, it is important to note that, for most of the outcomes with a positive and significant association with a university degree or other HE qualification, an association of similar magnitude can be observed for respondents attaining A-levels only. The exceptions are the number of friends who have a job and the number of friends living in diverse areas, so perhaps the most certain conclusion is that HE gives access to a more skilled and global pool of friends and connections, increasing social capital.

It is curious to note the exception among the results – a negative association between having a degree and talking to neighbours and belonging to a neighbourhood. This finding may be consistent with the idea that HE focuses social connections less on the local community and more globally. Graduates may also be more likely to work outside the community (see discussion of geographical mobility above). These associations are not significant at conventional levels (p<10%).

Finally, a key point of this study is how the impact of HE varies for particular groups. To this end, we performed split-sample regressions to see how the coefficients above vary if we restrict the sample to specific subgroups: men/women, BAME/White respondents, occupation-based SEC/income-based SEC. As this produced a wide array of numbers, we narrowed our focus to a few key outcomes of interest only. We present in Tables 6A and 6B below the coefficients for having a university degree or other HE qualification (which may include Level 4 and 5 further education) respectively (relative to the 'no qualifications' reference category).

Table 6A. Split sample regression: coefficient of 'University Degree'

Subgroup/outcome	Life Satis.	WEMWBS	Close friends	Ethnic diversity	Lone- liness	General health
Full sample	0.043	0.565	0.734**	0.371**	-0.500*	0.102*
Bottom 25% income	-0.072	-0.346	0.632	0.505+	-1.150	0.078
Middle 50% income	0.221	0.528	0.233	0.530**	-0.325	0.173*
Top 25% income	-0.535**	0.333	0.760	0.044	-0.777**	-0.160
High and middle SEC (NS-SEC 1-5)	-0.318	-3.306	1.351*	0.873**	-0.087	0.237
Low SEC (NS-SEC 6-8)	-0.129	1.135	0.697	0.472+	-0.857**	0.130
NS-SEC unclassified	-0.118	-0.525	0.406	0.569*	-0.573	0.128
Women	0.131	1.083	0.826**	0.196	-0.460*	0.113
Men	-0.083	0.057	0.597	0.594**	-0.416	0.080
BAME	0.333	0.756	1.008*	0.048	-0.503	0.144
White	-0.053	0.531	0.575*	0.479**	-0.412+	0.093

Note: Coefficients of control variables are omitted for brevity. Fixed-effects model with heteroskedasticity-robust standard errors used. Stars represent statistical significance levels: +p < 10%, *p < 5%, **p < 1%.

Table 6B. Split sample regression: Coefficient of 'Other HE'

Subgroup/outcome	Life Satis.	WEMWBS	Close friends	Ethnic diversity	Loneliness	General health
Full sample	-0.007	0.324	0.690**	0.341**	-0.611*	0.076
Bottom 25% income	-0.101	0.232	1.716**	0.438+	-1.171	-0.045
Middle 50% income	0.084	0.112	0.250	0.390*	-0.442+	0.142*
Top 25% income	-0.440*	0.854	0.666	0.091	-0.875**	-0.162
High and middle SEC (NS-SEC 1-5)	-0.456	-3.585+	1.086+	0.702*	-0.114	0.225
Low SEC (NS-SEC 6-8)	0.048	1.118	0.756+	0.502*	-0.913**	0.095
NS-SEC unclassified	-0.271	-1.410	1.131*	0.359	-1.416**	0.019
Women	0.167	0.893	0.677*	0.215	-0.601**	0.063
Men	-0.300+	-0.272	0.735+	0.505**	-0.430	0.094
BAME	0.074	-0.315	1.011*	-0.039	-0.704	0.123
White	-0.046	0.495	0.537*	0.464**	-0.512*	0.065

Note: Coefficients of control variables are omitted for brevity. Fixed-effects model with heteroskedasticity-robust standard errors used. Stars represent statistical significance levels: +p < 10%, *p < 5%, **p < 1%.

For disadvantaged groups from low NS-SEC or unclassified backgrounds, there are very strong negative associations between HE and loneliness, considerably stronger than for non-disadvantaged groups.

Curiously, for the top 25% of income earners as well as for high and middle NS-SEC groups, HE is associated with a negative change in life satisfaction and mental wellbeing. This supports the evidence outlined in Section A2 that found negative wellbeing outcomes associated with overeducation and higher levels of anxiety among graduates. For the top 25% of earners, HE has no effect in terms of the ethnic diversity of friends, although it has a positive effect for all other groups. General health only exhibits a significant relationship with HE for respondents in the middle of the income distribution.

The association between HE and personal wellbeing (life satisfaction) is higher for women than for men (for whom it is negative) and higher for BAME respondents than White respondents, although these differences are not significant. Although not significant in all cases, the same pattern is found for mental wellbeing (WEMWBS), lower levels of loneliness, and social capital (number of close friends, but for those with a degree only and not for other HE). Conversely, the association with an ethnically diverse circle of friends is stronger and more significant for men and for White respondents.

It is important to note that, for the split sample regressions, some patterns which would have shown as significant differences in the full data will not show as significant due to a reduction in sample size.

CONCLUSIONS FROM THE USOC DATA ANALYSIS

At first glance, people with HE qualifications have better scores for personal wellbeing, general health, mental wellbeing, self-actualisation, social capital, trust, and diversity of friends than their counterparts without HE. However, their demographic characteristics are also markedly different and indicate a more privileged socioeconomic status. We, therefore, resorted to fixed effects regression analysis to attempt to reduce the bias introduced by these demographic factors.

Consequently, the number of outcomes that show a positive relationship with HE has fallen after controlling for demographic characteristics and fixed effects. Nonetheless, a few important outcomes remain significantly related to HE: social capital (number of close friends), diversity and (reduced) loneliness. These are the outcomes where the evidence of a positive impact of HE/FE is the strongest. The evidence of a positive impact of HE/FE on wellbeing is insufficient. However, education is also known to have a positive externality effect that considerably outweighs private gain.[19] This positive spillover effect is much harder to capture in household surveys and is a topic for further research.

Finally, we looked at how the relationship between HE and certain key outcomes varies for subgroups in our sample. There is promising evidence supporting the claim that education delivers greater benefits to the following vulnerable groups in society: ethnic minorities, women, and people at the bottom of the income distribution. However, further research with more precisely defined hypotheses is needed to increase the validity of these findings.

[19]   Hall, J.C. (2006). Positive Externalities and Government Involvement in Education. *Journal of Private Enterprise*, 21 (2)

C. CONCLUSIONS FROM PHASE 1

The rapid evidence review found that the majority of the existing literature focuses on the economic benefits for disadvantaged young people associated with attending university. There is evidence that disadvantaged graduates earn more on average than their disadvantaged peers who did not attend university (an estimated earnings difference of £8,326 15 years after KS4). However, there is also evidence that disadvantaged graduates earn less than non-disadvantaged graduates, with one paper estimating that this earnings gap is around 10%, even when controlling for other factors, such as specific university attended. There is also some evidence showing that HE can increase social and geographical mobility for disadvantaged young people.

There is a lack of specific research isolating the impact of other characteristics such as ethnicity, gender and prior attainment on the outcomes of disadvantaged graduates. The rapid evidence review also found little robust evidence of the impact of HE on non-economic outcomes for disadvantaged young people specifically; the majority of evidence relating to wellbeing, self-actualisation and attitudes towards other people only considered the graduate cohort as a whole.

An analysis of the UK longitudinal household survey shows that people with HE qualifications fare considerably better in terms of personal wellbeing, individual development and social/community development outcomes, but much of this difference is likely not to be causal. Some outcomes maintain a positive relationship with HE even after using a rather robust econometric analysis to remove an important part of the bias: the number of close friends, diversity of friends and reduced loneliness. There is also evidence supporting the claim that education delivers greater benefits to ethnic minorities, women, and those at the bottom of the income distribution.

D. OUTLINE FOR PHASE 2

The findings from Phase 1 have begun to address some of the key research questions but have also revealed gaps in the existing literature and available data. Access to the recently released Longitudinal Educational Outcomes (LEO) dataset opens up possibilities to explore these key areas. The following questions are of particular interest:

- **Which education pathways offer the greatest return on investment?**

We propose to use LEO data to break down earnings paths (up to 16 years after KS4) by specific HE/FE qualification achieved (while controlling for other important factors such as prior attainment).

- **Looking beyond disadvantage, how do individual characteristics influence earnings?**

We propose to use LEO data to unpick characteristics other than socioeconomic status that influence future earnings. We will break down graduate/non-graduate earnings paths (up to 16 years after KS4) by further characteristics such as:

- Prior attainment
- Ethnicity
- Gender

APPENDIX A: RAPID EVIDENCE REVIEW GRID

Title and link	Year	Journal/Publication	Author	Geographical remit	Summary	Research question(s)	Educational pathways	Demographic breakdown	OfS Standard of Evidence
Matching in the Dark? Inequalities in Student to Degree Match	2022	Journal of Labor Economics	Stuart Campbell, Lindsey Macmillan, Richard Murphy, and Gill Wyness	England	Students from low SES backgrounds are more likely to enter courses with lower earnings outcomes than higher SES peers with the same grades. A key driver of SES inequalities in match is the institution attended. Women enrol in courses with lower earning outcomes than men, even when we take into account prior attainment; this is largely accounted for by subject choice.	1	Traditional HE	SES, Gender, Prior attainment	Type 2
Does University Level the Playing Field? Impacts of Spatial Inequalities on the Gap in the Earnings of Similar Graduates: Evidence from the UK	2022	Higher Education Policy	Sangwoo Lee	United Kingdom	Based on the Early and Longitudinal Destination of Leavers from Higher Education (DLHE) Surveys; finds graduates from neighbourhoods with the highest university participation rate, on average, have higher earnings than those from the lowest-participation neighbourhoods, holding demographic features and university-related factors constant.	1	Traditional HE	POLAR	Type 2
Which university degrees are best for intergenerational mobility?	2021	IFS, DfE and Sutton Trust	Jack Britton, Elaine Drayton and Laura van der Erve	UK	LEO data is used to determine mobility rates for students from low income backgrounds. Key finding: For graduates, the rates of earning in the top 20% at age 30 are around 35% for non-FSM and 22% for FSM	1,4	Traditional HE, Type of university	FSM, Ethnicity, Gender, Prior attainment	Type 2 with counterfactual
Beyond Graduation: Socio-economic Background and Post-university Outcomes of Australian Graduates	2021	Research in Higher Education	Wojtek Tomaszewski, Francisco Perales, Ning Xiang, Matthias Kubler	Australia	Key finding "Low-SEB graduates experienced short-term post-graduation disadvantage in employment and occupational status, but not wages... low-SEB graduates benefited more from higher education in relative terms"	1,2	Traditional HE		Type 2 with counterfactual

Title and link	Year	Journal/ Publication	Author	Geographical remit	Summary	Research question(s)	Educational pathways	Demographic breakdown	OfS Standard of Evidence
Post 16 education and labour market activities, pathways and outcomes (LEO)	2021	Department of Education	Oliver Anderson and Moria Nelson	England	Salary and activity type by characteristic and education level. Includes graduates split by FSM	1,4	Traditional HE	FSM, Ethnicity, Gender, Disability / SEN, First Language / Language Fluency, Prior attainment	Type 2 with counterfactual
London calling? Higher education, geographical mobility and early-career earnings	2021	Institute for Fiscal Studies	Jack Britton, Laura van der Erve, Ben Waltmann and Xiaowei Xu	England	Uses LEO data to explore if higher education is associated with greater geographical mobility how this differs across socio-economic and ethnic groups	1,4	Traditional HE, Type of university	FSM, Ethnicity, Gender, Combined ethnicity and gender, Disability / SEN, First Language / Language Fluency, Prior attainment	Type 2 with counterfactual
Post-18 Education: Who is Taking Different Routes and How Much do they Earn?	2020	Centre for Vocational Education Research	Héctor Espinoza, Stefan Speckesser, Imran Tahir, Jack Britton, Sandra McNally, Anna Vignoles	England	Higher-level qualifications lead to better earnings than finishing education at Level 3 for both men and women. However, some Level 4 and 5 qualifications have higher earning potential for particular groups , and this may be due to employment outcomes associated with particular subjects/ courses.	1	Traditional HE, FE	Gender	Type 2 with counterfactual
A comparison of earnings related to higher technical and academic education	2019	Centre for Vocational Education Research	Héctor Espinoza and Stefan Speckesser	England	Based on LEO data finds earnings for male degree holders are similar to higher vocational/technical education if they studied in non-Russell group universities, and higher for those from Russell group universities. Earnings for female degree holders are higher regardless of the university type compared to those who achieved higher vocational/technical education. There are big differences by subject area and gender.	1	Traditional HE, FE	Gender, FSM	Type 2 with counterfactual

Title and link	Year	Journal/ Publication	Author	Geographical remit	Summary	Research question(s)	Educational pathways	Demographic breakdown	OfS Standard of Evidence
Is Improving Access to University Enough? Socio-Economic Gaps in the Earnings of English Graduates	2019	Oxford Bulletin of Economics and Statistics	Jack Britton,Lorraine Dearden,Neil Shephard and Anna Vignoles	UK	Key finding: graduates from higher income families (with median income of around 77,000) have average earnings which are 20% higher than those from lower income families (with median income of around £26,000). Once we condition on institution and subject choices, this premium roughly halves, to around 10%"	1,4	Traditional HE, Type of university	Gender	Type 2
The relative labour market returns to different degrees	2018	Institute for Fiscal Studies	Chris Belfield et al.	UK	Key finding: "Medicine and education have higher returns for students from lower socio-economic backgrounds, while economics and history have higher returns for students from higher socioeconomic backgrounds."	1	Traditional HE, Type of university	FSM, Ethnicity, Gender, Prior attainment	Type 2 with counterfactual
How English domiciled graduate earnings vary with gender, institution attended, subject and socioeconomic background	2016	Institute for Fiscal Studies	Jack Britton, Lorraine Dearden, Neil Shephard, Anna Vignoles	England	Compares earnings of graduates (up to 11 years after graduation) across subject types, institutions and parent's income (Parents income indicators derived from amount taken out as student loan)	1,4	Traditional HE, Type of university	Gender	Type 2 with counterfactual
Does higher education level the playing field? Socio-economic differences in graduate earnings	2015	Education Sciences	Claire Crawford and Laura Van der Erve	United Kingdom	Using data from the British Cohort Study, finds that at age 26, high-SES graduates earned just under 12% more, on average, than those from other backgrounds.	1	Traditional HE	SES	Type 2
The Benefits of Higher Education Participation for Individuals and Society: key findings and reports "The Quadrants"	2013	BIS (now BEIS)			Summary/literature review of recent work on the benefits of higher education for both individuals and society	1,2,3,4,5	Traditional HE		Meta-analysis
The wider (non-market) benefits of post 18 education for individuals and society	2019	Government social research / DfE	Wil Hunt & Gaby Atfield	UK	Literature review of research about non economic benefits to higher education and FE	2,3,4,5	Traditional HE, FE, Apprenticeships		Meta-analysis

Title and link	Year	Journal/Publication	Author	Geographical remit	Summary	Research question(s)	Educational pathways	Demographic breakdown	OfS Standard of Evidence
Does Higher Education Increase Hedonic and Eudaimonic Happiness?	2018	Journal of Happiness Studies	Boris Nikolaev	Australia	Using longitudinal data from the Household Income and Labor Dynamics in Australia survey, this study examines the link between higher education and three different measures of subjective well-being	2	Traditional HE, Postgrad		Type 2
The wellbeing of graduates (Assessing the contribution of higher education to graduates' wellbeing in the UK)	2017	Higher education funding council for England		UK	Key finding: "Graduates tend to be more satisfied with their lives than non-graduates; however, they also tend to be more anxious across all income levels than people who have no qualifications above A-level"	2	Traditional HE, FE, Postgrad, Type of university		Type 2
Too Educated to be Happy? An investigation into the relationship between education and subjective well-being	2016		Erich Striessnig	Europe	Key finding: "The results suggest that the relationship between education and happiness is distinct from the relationship between income and happiness."	2	Traditional HE, FE		Type 2
Ten years on - The futuretrack graduates	2021	Warwick Institute for Employment Research	Peter Elias, Kate Purcell, Gaby Atfield, Erika Kispeter, Rosie Day and Stefanie Poole	UK	Compares occupation of graduate cohort to parent's occupation in order to measure social mobility - "This chapter has shown that HE experience appears to have resulted in a high level of social mobility for the, admittedly advantaged, Futuretrack cohort"	4	Traditional HE	Ethnicity, Gender	Type 2
The Benefits of Higher Education for Individuals and Society (Education pays)	2016	College Board	Jennifer Ma, Matea Pender, and Meredith Welch	USA	This report draws together evidence on both the high payoff to investments in higher education and the variation in outcomes among students.	4,5	Traditional HE		Type 2

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