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An Economic Analysis of Uni Connect

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Executive Summary

Uni Connect is a government funded programme that brings together 29 regional partnerships of higher education institutions (HEI), colleges and other local partners to offer activities, advice and information to students on the benefits and realities of going to university or college. The programme aims to ensure that access to higher education is not limited by background and is targeted at areas where learners are less likely to go to higher education.

The Office for Students (OfS) commissioned Public First to carry out an economic impact study of Uni Connect to look at the extent to which the programme leads to increased student participation, better attainment matching between students and HEIs, and positive economic outcomes through human capital development and increased labour productivity.

To do this the Public First team have created a new simulation model that estimates increases in lifetime earnings resulting from two types of change: increased participation in higher education and better attainment matching between students and HEIs.

Our analysis finds that:

- **In 2020/21, Uni Connect led to an additional 2,350 higher education entrants through the provision of intensive packages of outreach to 13,450 students.¹**
- **These additional students will earn a total of £495 million of additional gross earnings in their lifetime.²**
- **Uni Connect led to approximately 670 students attending a HEI with higher entry requirements than they might otherwise have done and that better reflected their Level 3 attainment. This is particularly important for students from lower socio-economic backgrounds who evidence suggests are more likely to 'undermatch'.³**
- **These students will earn £64 million of additional lifetime gross earnings due to better matching.**
- **By comparing the benefits of Uni Connect to the costs for the year in question, we estimate that every £1 spent on the programme led to between £5 and £9 of economic benefit.⁴**

¹ An intensive package of outreach is defined as 11+ hours of any activity and eight or more hours of a high-intensity activity. The analysis was carried out against a counterfactual of the least intensive package of outreach, defined as one activity with low intensity content (general higher education information or exhibition) only, or less than three hours received overall. Students with a '2020/21 expected entry' refers to those students who, had they gone straight from school to university, would have entered in 2020/21. The outreach is modelled as occurring over the prior four years since the start of the programme in 2017.

² Gross lifetime earnings includes tax, with future years discounted at a rate of 3.5%. Figures are provided in 2023 prices. We have carried out the analysis on the 2020/21 expected entry cohort because this is the year for which HEAT Services have carried out analysis.

³ This is discussed in more detail later in this report, but draws on evidence including Wyness et al (2019), 'Mismatch in higher education: prevalence, drivers and outcomes'. Accessed:

<https://www.nuffieldfoundation.org/project/undermatch-in-higher-education-prevalence-drivers-and-outcomes>

⁴ The lower bound (£5) is estimated using sensitivity analysis.

To support our modelling of the additive impact of Uni Connect, over and above existing programmes for encouraging young people into higher education, we also carried out polling of current students to find out their views on any university outreach they experienced at school and how it impacted them.⁵ We found that:

- **While at school, 40% of students from lower socio-economic backgrounds changed their mind about attending higher education, suggesting university outreach targeting low socio-economic areas could have a significant impact on progression to higher education.**
- **26% of students from a lower socio-economic background think going to a talk or workshop impacted the HEI they applied to.⁶**

⁵ Full polling tables available on Public First's website: www.publicfirst.co.uk

⁶ Uni Connect outreach and non-Uni Connect outreach were not distinguished in the polling.

Introduction

Uni Connect is a centrally funded collaborative outreach programme funded by the Office for Students (OfS). Its aim is to support the Government's objective of 'widening participation' by improving equality of opportunity for underrepresented students to access higher education. Introduced in 2017, Uni Connect follows on from other similar national collaborative outreach programmes including the Excellence Challenge (2001-2004), Aimhigher (2004-2011) and the National Networks of Collaborative Outreach (2014-2016).

The benefits of higher education

Human capital theory suggests that greater levels of higher education participation strengthen the economy by improving the productivity of workers, a hypothesis first brought to prominence by Becker in the 1960s.⁷ Graduates benefit from enhanced knowledge and skills – better preparing them for a modern, technologically advanced economy – and are rewarded with higher earnings over their lifetime. The economy is provided with higher levels of 'human capital', supporting the development of knowledge-intensive, high-tech industries. This ultimately leads to a more productive economy, higher wages for individuals and higher tax receipts for the Exchequer. Of course, higher education also produces wider returns for all socio-economic groups and, as such, can also act as a vehicle for social mobility, leading to a fairer society – but for the purposes of this analysis we concentrate solely on improved economic gain.⁸

For both the economic and wider social reasons outlined above, a higher level of higher education participation is considered a positive policy aim and disparities in participation based on gender, regions, socioeconomic background or ethnicity a cause for concern.

Trends and variation in higher education participation

Participation in higher education has continued to increase over the ten years prior to the year studied, as illustrated in Chart 1. Over 50% of young people are now expected to enter higher education by the time they are thirty, significantly more than the 35% twenty years ago.⁹ Both applications and accepted applicants continued to increase up until the pandemic, although there has been a slight drop since then.¹⁰

⁷ G. Becker (1964). 'Human Capital: A theoretical and empirical analysis with special reference to education'. Accessed: <https://www.nber.org/system/files/chapters/c3730/c3730.pdf>

⁸ Britton et al (2021). 'The returns to undergraduate degrees by socio-economic group and ethnicity'. Accessed:

https://assets.publishing.service.gov.uk/media/605c82eb8fa8f545d701e70e/The_returns_to_undergraduate_degrees_by_socio-economic_group_and_ethnicity.pdf

⁹ This is the 'Higher Education Initial Participation Rate' (HEIPR) as defined by the DfE.

¹⁰ UCAS (2023). '2023 Cycle January Application Figures.' Accessed: <https://www.ucas.com/data-and-analysis/undergraduate-statistics-and-reports/ucas-undergraduate-releases/ucas-undergraduate-applicant-releases-2023-cycle/2023-cycle-applicant-figures-25-january-deadline>

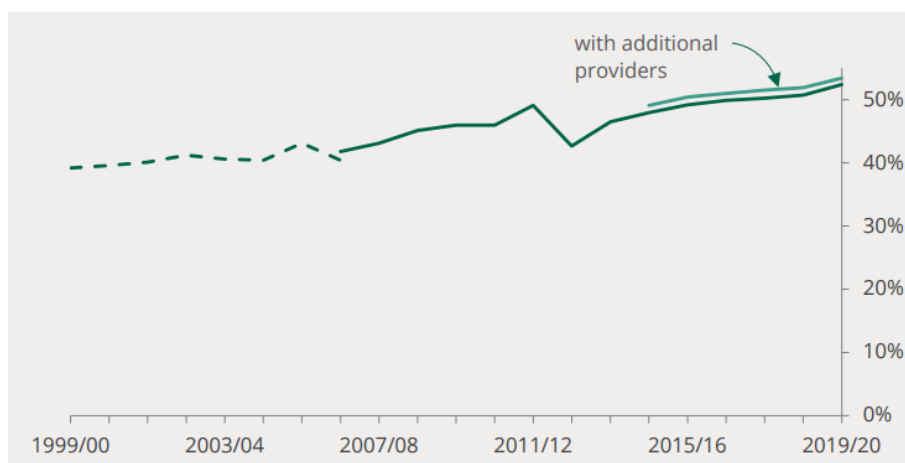


Chart 1 - Higher Education Initial Participation Rate (HEIPR); this is the percentage of 17 to 30 year olds starting higher education.¹¹

Despite these increases, there remains significant variation in higher education participation by gender, ethnicity, socio-economic background and geography. Socio-economic status is a major driver of participation with just 21% of young people eligible for Free School Meals (FSM) progressing onto higher education, compared to 41% of students who are not. Although the gap remains significant, it has narrowed over the last decade and the proportions from poorer backgrounds has increased faster than that of their wealthier counterparts: by comparison, only 12% of young people eligible for FSM progressed onto higher education in 2012.

The variation in participation between gender that emerged in the mid-nineties, by contrast, continues to grow, with 43% of 18 year old females entering higher education in 2022, in comparison to 32% of 18 year old males.

There is also significant variation geographically. Over 50% of 18 year olds in London - the region with the highest progression rates - enter higher education, compared to only 31% in the North East and 32% in the South West of England, the regions with the lowest progression rates.

Finally, ethnicity is another major predictor of participation. 50% of Asian and 47% of Black students enter higher education at 18, in comparison to only 32% of white students.

There is also significant intersectionality between different factors, with the lowest progression rates amongst those who share multiple characteristics associated with low progression rates, such as white working class boys.¹²

Uni Connect

Uni Connect is targeted at low participation areas and, like its predecessors, aims to both increase participation in higher education and reduce the variation in participation between the most and least represented groups. It does this by helping young people understand the benefits of higher education, minimising the barriers that exist when choosing the best option for their future, and allowing them to make an informed choice. Delivered since 2017, Uni Connect brings together partnerships of HEIs, colleges and other local partners to provide activities, information,

¹¹ P. Bolton (2024). 'Higher Education Student Numbers'. House of Commons Library. Accessed: <https://researchbriefings.files.parliament.uk/documents/CBP-7857/CBP-7857.pdf>

¹² Ibid.

advice and guidance on the benefits and realities of higher education. It is currently in its third phase, having connected with over 1.3 million learners since 2017.¹³

This analysis

This work aims to evaluate the economic impacts of Uni Connect by modelling and estimating two mechanisms through which economic value is generated:

- First, the additional lifetime earnings resulting from those who attend a HEI as a result of Uni Connect.
- Second, the additional earnings of students who attend a HEI with higher entry requirements that more closely match their own prior attainment, as a consequence of the programme.

We also carried out a survey of current students that seeks to understand their experience of outreach programmes and how they impacted choices, some of the findings of which are used in our economic modelling.¹⁴

Evidence used within our economic analysis

One of the core aims of Uni Connect is to increase the evidence base on 'what works' with regards to increasing higher education participation. As such, a significant amount of evidence has been collated from the Uni Connect partnerships that describes their activities and evidence of impact. This evidence is discussed more generally in the review undertaken by Public First on the collaborative support for improving equality of opportunity in access to higher education.¹⁵ The evidence provided relates potentially to any of the several hundred thousand learners who have come into contact with Uni Connect and, unsurprisingly, provides impact estimates that vary significantly. It also provides little evidence of causal relations that are needed to carry out economic impact analysis.

To support our economic modelling we therefore make use of analysis carried out by the Higher Education Access Tracker (HEAT) Service, which uses longitudinal data collected from recipients of Uni Connect outreach to calculate the causal impact on participation. This analysis is focused on a group of just over 13,000 participants who received the most intensive package of Uni Connect outreach and a similar number who received the least intensive package, both in academic year 2020/21.¹⁶

¹³ Office for Students (2022). 'Uni Connect: Data snapshot 2021-22'. Accessed: [uc-data-snapshot.pdf \(officeforstudents.org.uk\)](https://www.officeforstudents.org.uk/uc-data-snapshot.pdf)

¹⁴ We surveyed 1,017 18-23 year olds between the 14th November and 29th November 2023. All results are weighted using Iterative Proportional Fitting, or 'Raking', with the results weighted by age, gender and region to representative proportions, and UK undergraduate higher education attendance.

¹⁵ Burtonshaw, Eyre, Simons and Whitehead (2024). 'A review of collaborative support for improving equality of opportunity in access to higher education.'

¹⁶ An intensive package of outreach is defined as 11+ hours of any activity and eight or more hours of a high intensity activity. The least intensive package of outreach is defined as one activity with low intensity content only or less than three hours received overall.

The economic impact of Uni Connect resulting from higher participation

This section estimates the economic impact of increased higher education participation resulting from the Uni Connect programme. This benefit is captured by estimating the additional lifetime earnings of those who attend and graduate from a HEI as a consequence of their interaction with Uni Connect. The direct beneficiaries of these additional earnings are the graduates themselves and the Exchequer through additional income tax and national insurance. However, higher salaries also reflect the greater productivity and human capital that higher education provides, productivity that supports a more prosperous economy. Further still, the higher returns to labour are likely to be matched with higher investment and additional returns to capital, providing a further boost to productivity.

It is well known that university graduates earn significantly more in their lifetime than non-graduates. However, this is partly due to differences in the underlying characteristics of those who participate in higher education and those who don't. To estimate the effect on earnings *caused by* attending higher education we make use of econometric analysis carried out by the Institute of Fiscal Studies (IFS), described in more detail in the next section.¹⁷

A challenge of estimating economic impact through higher participation is that we don't know which HEIs the additional Uni Connect students attend and whether or not they on average attend the same HEIs as everyone else. To address this challenge we make use of two methods, which are explained in the next section.

Methodology

To estimate the economic impact of additional participation we first estimate the number of additional students resulting from the programme. To do this we make use of analysis carried out by HEAT that provides an estimate of the effect that Uni Connect has on participation rates. The HEAT analysis uses a longitudinal dataset which tracks learners who take part in outreach whilst at school or college. It compares students who received the most intensive Uni Connect provision with students who received the least intensive, and employs a matching exercise so that selection bias is mitigated as much as possible and the causal effect of the most intensive outreach is estimated.^{18,19} The estimated effect size is applied to the total number of students who were identified as receiving this most intensive package of outreach (data also provided by HEAT Services) to calculate the total additional participation. This estimate is provided for students with an expected higher education entry year of 2020/21.

¹⁷ J. Britton, L. Dearden, B. Waltmann and L. van der Erve (2020). 'The Impact of undergraduate degrees on lifetime earnings.' IfS. Accessed: <https://ifs.org.uk/publications/impact-undergraduate-degrees-lifetime-earnings>

¹⁸ An intensive package of outreach is defined as 11+ hours of any activity and eight or more hours of a high intensity activity. The least intensive package of outreach is defined as one activity with low intensity content only or less than three hours received overall. This analysis was carried out for students who did or did not enter higher education between 2017/18 and 2020/21.

¹⁹ It was not possible to compare against students who received no outreach because no data was collected for these students in order to allow a matching exercise to take place. As such, although we believe this analysis to be a reasonable estimate of the impact of Uni Connect, it may well underestimate the effects.

To calculate the total additional lifetime earnings resulting from additional participation we make use of analysis carried out by the IFS. This analysis controls for a students' prior attainment and family background to estimate the causal impact that attending higher education has on lifetime earnings, otherwise known as the 'returns' to higher education. By applying these estimates of additional earnings to our estimate of total additional participation, we estimate the total additional discounted gross lifetime earnings.²⁰ This estimate includes tax so that benefits to the individual, through wages, and benefits to the Exchequer are included. It should be noted that the techniques used in both the HEAT analysis and the IFS analysis to control for selection bias can never fully mitigate these effects.

A key unknown in our analysis is the extent to which students who progress to higher education as a consequence of Uni Connect distribute themselves around HEIs and courses in the same way as the rest of the higher education cohort. A limitation of our analysis is that there is no data that provides us with this information and so it is difficult to mitigate for any potential differences. However, we do attempt to counter this, firstly – in method 1 – by making use of a measure of socio-economic group in our analysis, and second – in method 2 – by restricting the type of HEI we model the additional students attending. For both methods, future earnings are discounted at 3.5%, with an appraisal year of 2021 and values given in 2023 prices.

A 'bigger picture' assumption we make in the analysis is that the higher earnings of graduates are not negatively impacting the earnings of their peers. In effect, we assume that these additional graduates are not replacing the high earnings of other graduates. This issue is both controversial and ongoing.

Method 1 – Core estimate: This method makes use of the fact that analysis carried out by HEAT and the IFS, as well as the estimate of student numbers, are provided separately by participation of local areas (POLAR) quintiles. POLAR classification groups areas across the UK based on the proportion of young people who participate in higher education.²¹ The returns to participation vary by POLAR quintile so by using this breakdown we can get a more accurate estimate and control for some of the potential differences in the characteristics of the students who attend higher education because of Uni Connect and their peers.

Method 2 – Sensitivity test: The IFS provides estimates of the returns to undergraduate degrees broken down by type of HEI. Institutions are categorised as *Russell Group*, *pre-1992 Universities*, *Other (more selective)* and *Other (least selective)*. In this more cautious estimate, we assume that the additional students attending higher education because of Uni Connect do not attend Russell Group universities, even if their peers would do. Although this is a crude assumption made for the purposes of the model, and in reality some of those students might attend such universities, we think this is a useful sensitivity test for sense checking the model as it provides a plausible bottom end estimate of increased economic gain.

Results

Method 1 – Core estimate: The estimated economic benefit of additional participation using method 1 is £497 million. This is the present value benefit of the additional discounted gross

²⁰ Future earnings are discounted at a rate of 3.5% per annum to provide us with a present value benefit.

²¹ POLAR4 is the current version of the measurement.

lifetime earnings resulting from increased higher education participation caused by Uni Connect. It is for the expected higher education entry year of 2020/21, is discounted at 3.5% as per Green Book guidance, and is in 2023 prices²².

This estimate only accounts for the impact that Uni Connect has had on the 13,460 students receiving an intensive package of Uni Connect outreach. This may lead to an underestimate of the total impact of Uni Connect through additional participation.

Chart 2 illustrates the additional lifetime earnings broken down by POLAR4 quintile. We can see the majority of benefits are generated from quintiles 1 and 2. This is unsurprising given that these areas are the focus of Uni Connect outreach.

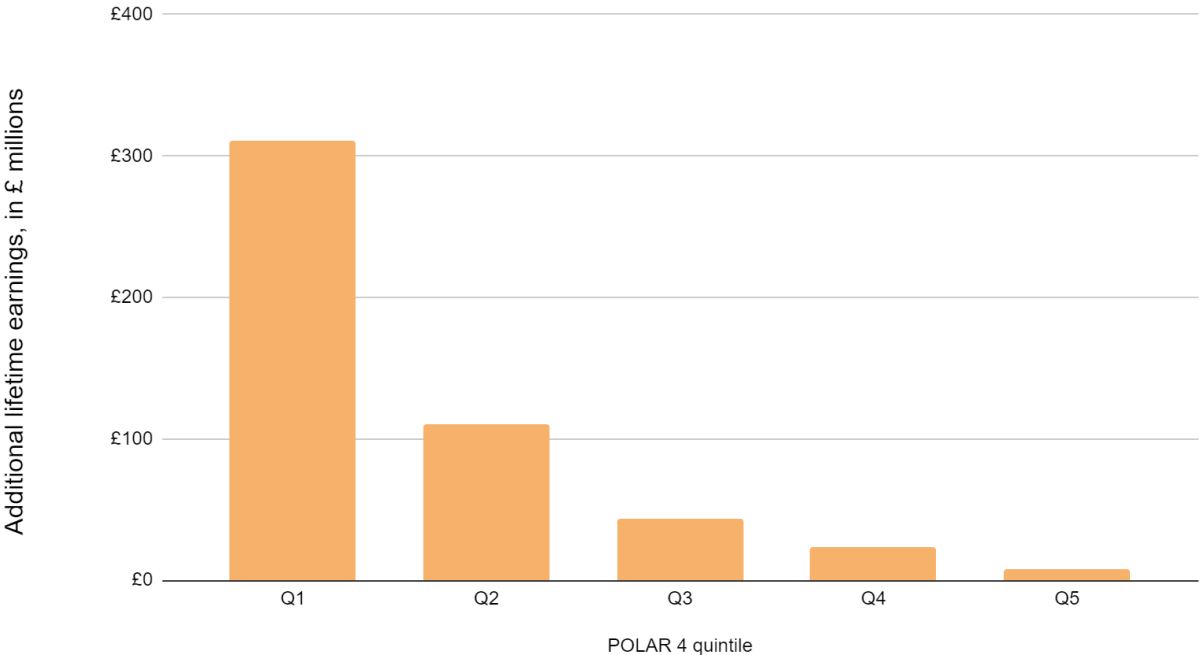


Chart 2 - Net present value benefit of additional gross lifetime earnings resulting from greater higher education participation, by POLAR4 quintile (in 2023 prices and discounted at 3.5% to an appraisal year of 2021).

Method 2 – Sensitivity test: The estimated economic benefit of additional participation using method 2 is £284 million. This is lower than the method 1 estimate because the returns to attending the Russell Group universities are higher than for the other three categories of institution, and in this lower end estimate we exclude those from our analysis. As with method 1, this estimate only includes the impact on the 13,460 students who received the highest intensity package of outreach and so may be an underestimate of the total effect. Chart 3 illustrates the economic impact broken down by institution type. The most economic benefit comes from

²² The Green Book is guidance issued by HM Treasury on how to appraise policies, programmes and projects

students who progressed to higher education in the 'Pre-1992 Universities' category, as these have the greatest earnings returns.

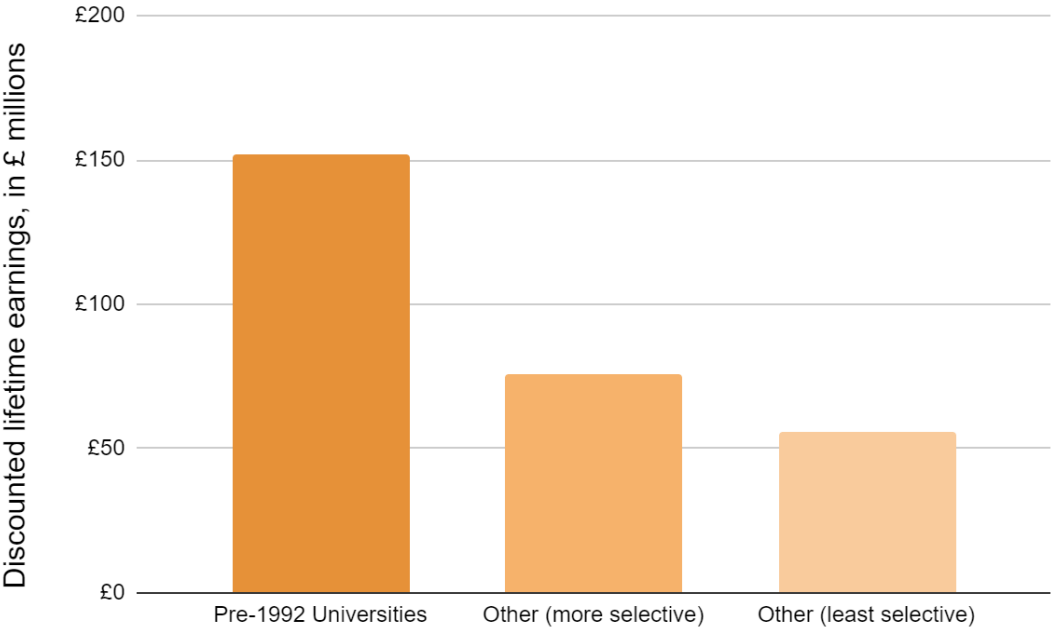


Chart 3 - Net present value benefit of additional gross lifetime earnings resulting from greater higher education participation, by institution type (in 2023 prices and discounted at 3.5% to an appraisal year of 2021).

The economic impact of Uni Connect resulting from better attainment matching

There is evidence both in the US and in the UK that significant numbers of students go to a university that doesn't 'match' with their attainment. In particular, some would-be students 'undermatch', which means they attend an institution with entry grades lower than their academic attainment suggests they could attend, a phenomenon particularly prevalent amongst those from a lower socio-economic background. One of the core aims of Uni Connect is to allow students to make more informed decisions; for example, by ensuring they are familiar with the type of institution that matches with their projected attainment level. This section estimates the economic value of this phenomenon, which we call better attainment matching.²³ It should be noted that the most appropriate institution, or the best 'match', for a student is not only determined by attainment level. However, the evidence suggests that better attainment matching leads to positive economic outcomes through higher lifetime earnings and so this is the type of matching that we focus on in this report.

Methodology

To estimate the economic impact of better attainment matching we first look at the evidence for poor matching and the evidence of the impact of outreach on institution choice. Evidence from the US suggests that 25% of students are undermatched and that undermatching is more common among ethnic minority students and those from low socio-economic backgrounds.²⁴ Similar evidence in the UK estimates that between 15% and 23% of students undermatch and, again, that students from low socio-economic backgrounds are more likely to undermatch.²⁵

We also draw evidence from the polling exercise that formed part of this project. One of the questions asked students who remembered going to a HEI outreach talk or workshop whilst at school whether they thought it had had an impact on the institution they applied for. 16% of students thought the experience had impacted their choice of higher education institution, rising to 26% for students from a lower socio-economic status²⁶. We assume in this report that at least some of these students applied to an institution more appropriate to their attainment level and, ultimately, 'matched up'.

²³ For the avoidance of doubt, there are many reasons that drive a student to attend a particular institution, and we do not say that a higher tariff institution is automatically 'better' as an institution, or indeed more appropriate for that student than an 'undermatched' choice. We simply model here the increased economic gain that occurs if students, particularly lower socio-economic group students, apply to and are accepted to higher tariff institutions with on average higher lifetime earnings because of Uni Connect, than they would otherwise have done.

²⁴ Dillion and Smith (2017). 'Determinants of the Match between Student Ability and College Quality'. Accessed: <https://www.journals.uchicago.edu/doi/10.1086/687523>

²⁵ Wyness et al (2019), 'Mismatch in higher education: prevalence, drivers and outcomes'. Accessed: <https://www.nuffieldfoundation.org/project/undermatch-in-higher-education-prevalence-drivers-and-outcomes>

²⁶ The classification of socio-economic status is based on the social grade classification system originally developed for use in the National Readership Survey.

To model the impact of better attainment matching we make use of the four types of universities used in the IFS analysis, *Russell Group, pre-1992 Universities, Other (more selective) and Other (least selective)*, which have an entry tariff in descending order. Based on the evidence above of both undermatching and the impact of outreach on institution choice, we estimate that 5% of students who receive an intensive package of outreach attend an institution one tariff higher than they would have had they not received this provision.²⁷ We believe this is both credible and relatively conservative. However, a limitation of our analysis is that this assumption is not evidenced as strongly as the assumptions made in the rest of the report.

We apply this percentage to the total number of students who receive an intensive package of outreach, using data provided by HEAT, to estimate the number of students who are attending the highest three tariff groups that would otherwise have attended an institution in the tariff directly below. The additional lifetime earnings of these better matched students is then estimated by finding the difference between the net lifetime earnings returns of the original tariff of institution they would have attended and the tariff they moved up to, and adjusting up to estimate gross lifetime earnings.²⁸ The present value benefit is estimated by aggregating for all students. Future earnings are discounted at 3.5%, with an appraisal year of 2021 and values given in 2023 prices.²⁹

Results

We estimate the present value benefit of additional earnings relating to better matching resulting from Uni Connect, including taxes and with future earnings discounted at 3.5% per annum, to be £65 million. This is for the 2020/21 entry year cohort and is in 2023 prices. Chart 4 illustrates the economic impact, broken down by the type of institution that is being matched up 'to' and the tariff grouping that it has come 'from'. The largest impact (£42.2 million) is from the lowest entry requirements to the second lowest as the difference in earnings returns between these two tiers of university is the greatest.

²⁷ Our modelling assumes one third of this 5% move from each tariff grouping to the one directly above; so, for example, from 'pre 1992 universities' to 'Russell Group', or 'other (more selective)' to 'pre 1992'.

²⁸ Gross lifetime earnings include taxation with future earnings discounted at 3.5% per annum.

²⁹ A discount rate of 3.5% is the standard rate used within The HMT Green Book.

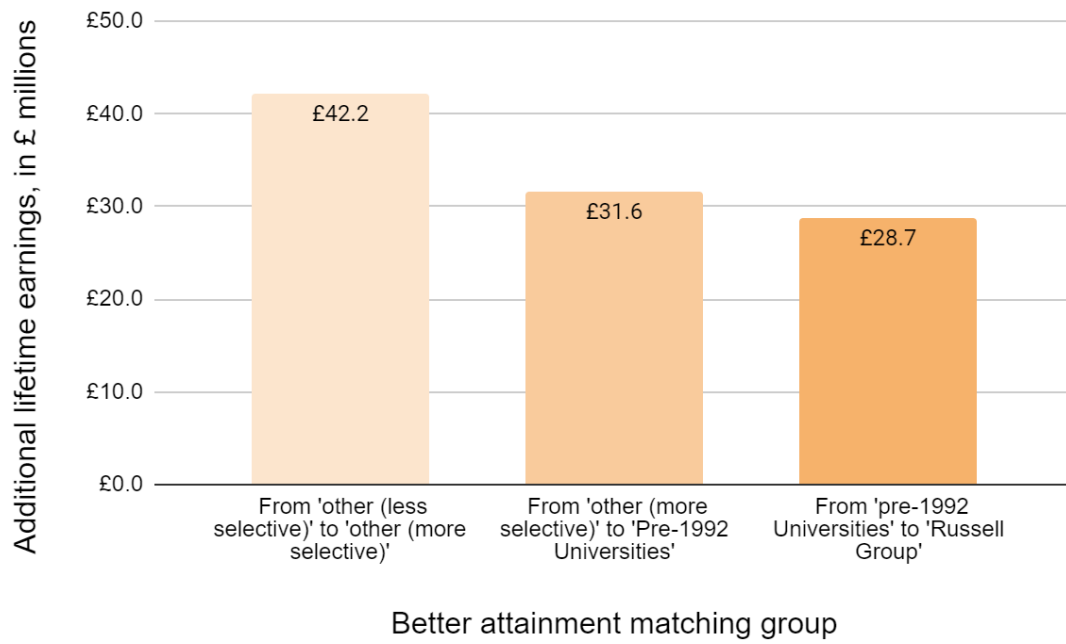


Chart 4 - Net present value benefit of additional gross lifetime earnings resulting from better attainment matching (in 2023 prices and discounted at 3.5% to an appraisal year of 2021).

Cost benefit analysis

To carry out a value for money assessment of the programme it is necessary to compare present value benefits to the costs of providing those benefits. Estimating the total cost of Uni Connect outreach experienced by students with an expected entry of 2020/2021 is not possible as we don't have a breakdown of spend by age group. In other words, we cannot sum up spending on one age group of pupils over multiple school years. Instead we simply assume that the share of Uni Connect funding spent on each school year is consistent from year to year and make use of the fact that the total Uni Connect spend each year from 2017 to July 2021 was the same³⁰. This allows us to aggregate up the proportions spent on this one cohort as the progress through different school year groups and hence estimate the total cost of the Uni Connect provision that this single cohort of students with an expected entry of 2020/21 received. We calculate this for the purposes of our model to be £66 million. As before, these costs are discounted at 3.5%, with an appraisal year of 2021, and values given in 2023 prices.

Chart 5 therefore illustrates the present value benefits and costs in 2023 prices. This produces a benefit cost ratio of 8.5. This is driven by the very large benefit of additional higher education participation, which is based only on students who receive the most intensive package of Uni Connect outreach.

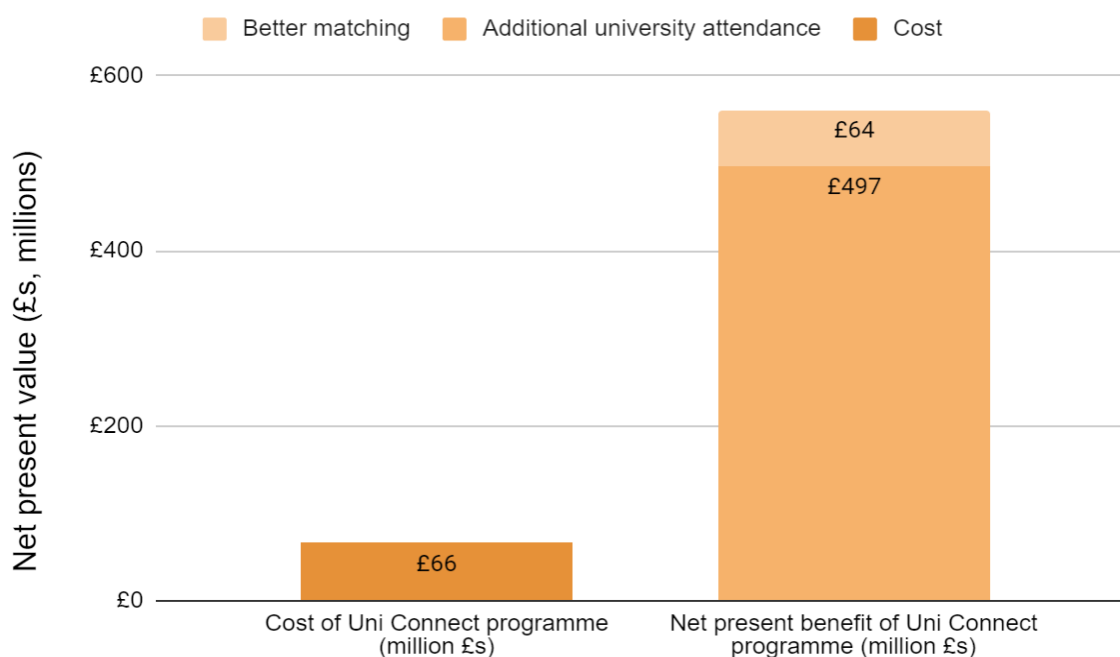


Chart 5 - Cost benefit analysis using method 1 for benefit of additional participation (discounted at 3.5% to an appraisal year of 2021, in 2023 prices).

³⁰ Office for Students (2021). 'A new approach to the Uni Connect programme from 2021-22 to 2024-25.' Accessed: <https://www.officeforstudents.org.uk/media/257123ea-61aa-4f0a-8d69-a3fa27263a2f/uni-connect-consultation-response-finalforweb.pdf>

Chart 6 again illustrates the present value benefits and costs but this time using method 2 to calculate the economic value of additional participation. The benefit cost ratio using this method is 5.3. Given that the core assumptions used in the calculation of both benefits and costs are conservative we believe this provides a suitable lower bound of the economic impact of Uni Connect.

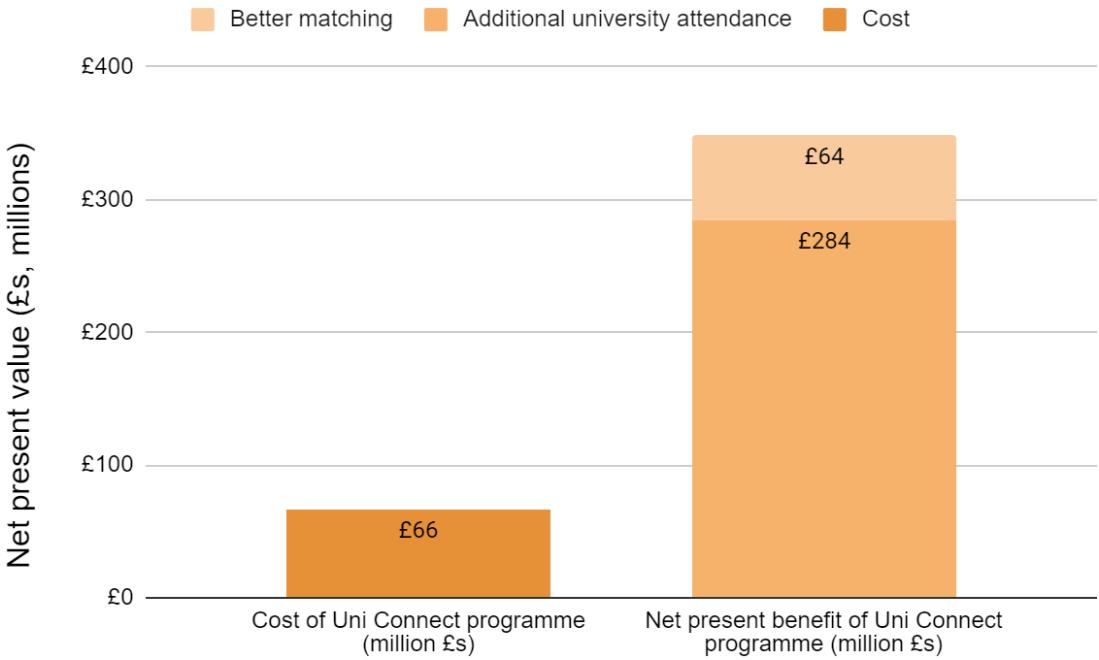


Chart 6 - Cost benefit analysis using method 2 for benefit of additional participation (discounted at 3.5% to an appraisal year of 2021, in 2023 prices)

We believe that these two figures provide a robust higher and lower range for an estimate of the benefits and cost of the programme.

Finally, it is worth noting that although the costs of the programme are all borne upfront, the full benefits are realised throughout the working lives of this cohort of students.