Efficacy Pilot Evaluation Report

University of Brighton's Student Mentoring Programmes

October 2023

1.   Summary

Project Team

The team comprised colleagues from SQW, the University of Brighton and the Centre for Transforming Access and Student Outcomes in Higher Education (TASO).

Project description

In September 2022, TASO commissioned SQW to work with two higher education providers, the University of Brighton and the University of Exeter, to evaluate interventions designed to improve employment outcomes for disadvantaged and underrepresented students, to build Type 2 evidence and scope the feasibility of Type 3 evaluation.[1] This report presents findings in relation to the University of Brighton.

Intervention being evaluated

The Mentoring Programmes, led by the Careers and Employability team at the University of Brighton, match students with trained volunteer professionals who support the students in working towards their goals and objectives. The aims of the intervention are to support students to: stay at the University (continuation) and progress into the following year of study (progression between years of study); achieve a good degree[2] (attainment); and to progress into i) employment and/or further study, and ii) highly skilled employment (graduate outcomes). Mentees and mentors meet every two to four weeks over a four-to-six-month period.

Methodology

Impact evaluation: The research questions for the impact evaluation focused on the intervention's impact on rates of continuation, rates of progression between years of study, attainment and graduate outcomes. The research questions were answered through conducting a regression analysis of outcomes for mentees vs. non-mentees, using Propensity Score Matching to construct a comparison group. This analysis was based on data from the University of Brighton's Administrative and Mentoring programme monitoring datasets, and responses to the Graduate Outcomes Survey.

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[1] The types of evidence are based on the Office for Students Standards of Evidence found at: https://www.officeforstudents.org.uk/publications/standards-of-evidence-and-evaluating-impact-of-outreach/. Type 2 evidence means there is data which suggests that an activity is associated with better outcomes for students (i.e., correlational evidence). Type 3 evidence uses a method which demonstrates that an activity has a 'causal impact' on outcomes for students.
[2] A good degree is defined as a first or 2:1 degree classification for undergraduates, and a Distinction, Merit or pass for postgraduates.

Process evaluation: A mixed-methods approach was adopted to answer the process evaluation research questions which explored why mentees engaged with the intervention, how effective they perceived the intervention to be, and how they engaged. Key data sources included feedback from the programme delivery team, mentee and mentor interviews, written feedback from mentees and a short mentee survey.

Key findings

Impact evaluation:

Mentoring is not statistically significantly associated with continuation. Mentoring is statistically significantly associated with an increased likelihood of progression in the year that a student undertook mentoring. This effect persists across matched and unmatched samples in the first and second course years. There is weaker evidence that this effect reverses in the years after a student undertook mentoring (i.e. mentoring is linked with lower progression). The analysis also reveals that participation in the mentoring programme is not statistically significantly associated with achieving a Good Degree, i.e. a 1st or 2:1 for undergraduates. Participating in mentoring was not found to be statistically significantly associated with students reporting being in work/further study or highly skilled employment upon completing the Graduate Outcomes Survey.

Process evaluation: Mentees were motivated to engage in the mentoring programmes for a range of reasons, including a desire to access career guidance and advice, develop existing or new skills, and sometimes to overcome loneliness. The most commonly cited goal by mentees in surveys was improving self-confidence. Mentees mostly felt they had achieved their goals and were generally satisfied with the structure and content of their mentoring sessions. Feedback on mentors was positive, suggesting that the matching process was working well.

Key conclusions

This evaluation provides some modest evidence that the intervention supports progression on-course, in the short-term, but not evidence of impact on other outcomes.

Additional findings

This report concludes with recommendations for how the intervention might be further evaluated. In addition, it also outlines recommendations for the University of Brighton with regards to the delivery of the mentoring programme.

2. Introduction

- 2.1 Background and rationale for the intervention

The evidence on the impact of information, advice and guidance (IAG) for employment and employability is emerging, with only a limited number of causal studies available (TASO, 2023). Nonetheless, there is evidence indicating that access to universal (i.e., available to anyone) and targeted (i.e., focused on the needs of particular groups) employability support is linked to improved outcomes for students, with disproportionate gains observed in some studies for students facing disadvantage or marginalisation (CFE Research, 2021). However, disadvantaged students often face greater barriers to accessing high quality employability support (Montacute et al., 2021). Furthermore, although education providers can offer interventions to reduce disparities in employment outcomes between groups, a TASO-commissioned report found that 'targeted careers programmes may not be sufficient to offset…deeper social considerations' (TASO, 2022).

These wider social disparities notwithstanding, mentoring is often seen as a mechanism for supporting improved outcomes among students. The literature on mentoring indicates that its impact can vary, but that on average it can have a small, positive impact on attainment at school (Education Endowment Foundation, 2023; Children's Commissioner, 2018) and is sometimes associated with improvements in students' confidence, self-efficacy and ability to search for and successfully apply for jobs (Hamilton et al 2019; Masehela and Mabika, 2017). These is evidence that suggests mentoring can disproportionately benefit students from disadvantaged backgrounds (Children's Commissioner 2018; Education Endowment Fund 2023), although the evidence on this is mixed, variable in quality and discusses school- rather than university-age groups.

The Mentoring Programmes, led by the Careers and Employability team at the University of Brighton, match students with trained volunteer professionals who support them in working towards their goals and objectives.

The University's rationale for implementing the Mentoring Programmes was to improve outcomes for students at risk of experiencing poorer outcomes academically and in terms of employment. Mentoring Programmes have helped the University address its Access and Participation Plan (APP) objectives as well as the Equality Act (2010) and the Public Sector Equality Duty.

A brief history of the University's Mentoring Programmes is outlined below.

In 2005, the University of Brighton commissioned the Mentoring and Befriending Foundation to deliver a mentoring programme for Black students. The programme was introduced because there was an acknowledgement that Black students were underrepresented in graduate level roles in the finance sector. Mentoring then moved 'in house' in 2008 and was opened up to any student who wanted a mentor – this became Momentum, now the University's main mentoring programme.

The following year, the University was approached by the Pride Network in American Express (which has its UK headquarters in Brighton) to develop a mentoring programme where students who identified as LGBTQ+ were matched with a mentor who shared this characteristic. The University and Pride Network in American Express worked together to establish LGBTQ+ Uni-Amex mentoring.

In 2013, the mentoring programmes were reprofiled to target students from groups that had lower rates of retention, attainment and graduate outcomes compared to their counterparts, as shown by University data. This included: mature students, men in receipt of a bursary, disabled students, and students of colour. The mentoring programmes were also available to care leavers and, more generally, to students who felt they needed a confidence boost.

Two years later, in 2015, a mentoring programme for students of colour in the School of Education was established (called Identity Match). This programme was set up in light of lower rates of retention, attainment and graduate outcomes for students of colour compared to their white counterparts. Students of colour were matched with a mentor of colour.

In 2016, the School of Education commissioned a piece of research on why male primary teaching students were not doing as well as their female counterparts. The Men in Primary mentoring programme was established as a result of this research.

Finally, five years later, the Graduate Mentoring programme was established to support graduating students with the transition into work or further study, with the aim of more students getting into graduate level work or further study.

Promising evidence from an internal evaluation of the Mentoring Programmes conducted by the University of Brighton in 2020/21 informed this efficacy pilot. The evaluation compared outcomes of students who engaged with mentoring to those who did not and used feedback surveys to collect data about the extent to which mentoring had enhanced mentees' confidence and enabled them to develop new skills. As the evaluation was identified as a priority in the University's APP, it explored the impact on

all students and particularly on groups targeted in the APP.[3] The 2020/21 evaluation found the following:

- Attainment data suggested that students who had mentors were more likely to be awarded a good degree compared to those who did not;

- Students who had mentors were more likely to progress into the following year of study (applicable to non-final year students);

- Students who had mentors were also more likely to stay at the University (continuation);

- Survey data showed that 81% of students reported that they have developed new skills and/or improved employability and 100% confirmed that they felt more confident as a result of mentoring.

  - 2.2 Intervention aims and objectives

The aims of the Mentoring Programmes at the University of Brighton are to support students to:

- Stay at the University (continuation) and progress into the following year of study (progression between years of study);

- Achieve a good degree (attainment);

- Progress into i) employment and/or further study, and ii) highly skilled employment (graduate outcomes).

Successful shorter-term outcomes include increasing mentees' confidence, knowledge, skills, values and attributes related to employability. Mentoring is also expected to help mentees develop routines and structures, prioritise and plan more effectively, and successfully apply for new jobs, volunteering, internships, or placements.

A theory of change for the intervention is provided in Annex A.

  - 2.3 Intervention approach

Mentoring is a commonly-deployed intervention by universities. The main mentoring programme at the University of Brighton is Momentum, which is open to all students regardless of individual characteristics. Additionally, the four programmes below are available and target specific groups of students:

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[3] Black and Asian students, mature students, and students from IMD Q1 and POLAR Q1 areas.

- Identity Match Programme, where students are matched to a mentor according to their ethnicity, background heritage or a shared experience of being racialised[4]

- Graduate mentoring, where final year students graduating in the summer can get support in their transition into further study and employment[5]

- Men in Primary, where men who are training to be primary school teachers are matched with a mentor who is a male primary school teacher

- LGBTQ+ Uni-Amex mentoring, where students who identify as LGBTQ+ are paired with professionals from the LGBTQ+ Pride Network in American Express.
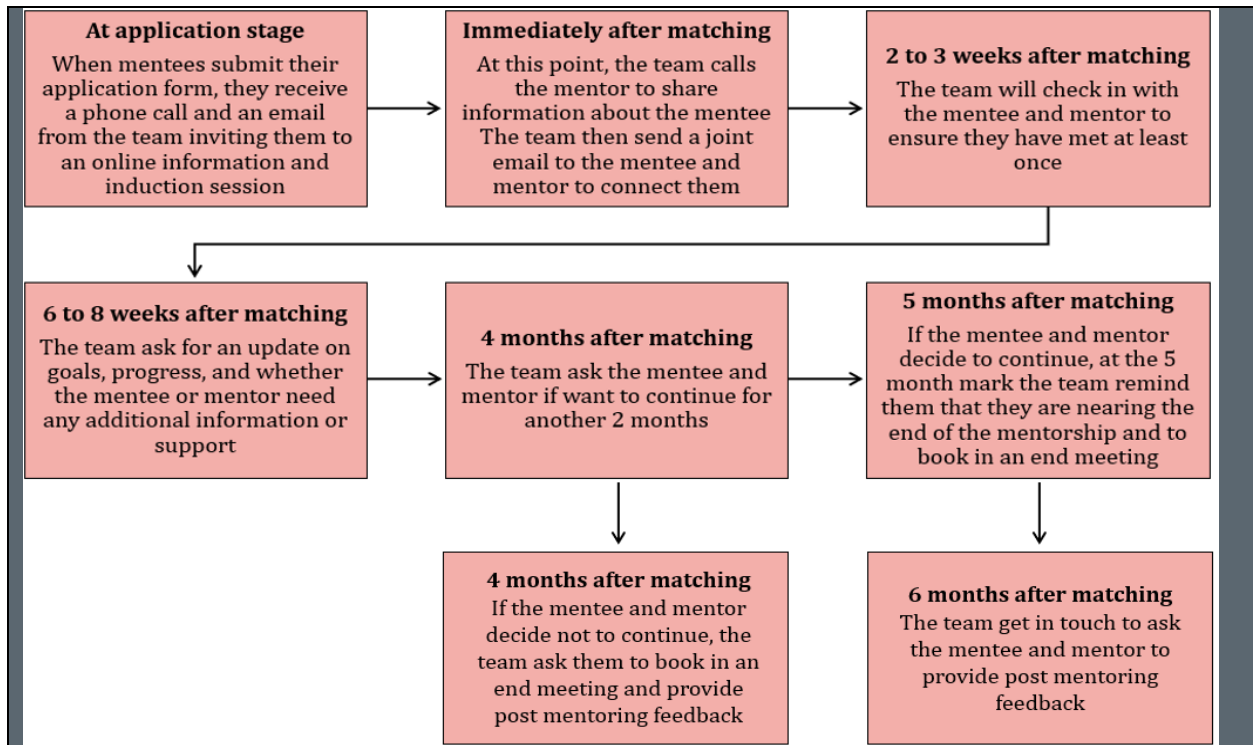
Mentees and mentors meet every two to four weeks over a four-to-six-month period (six months is the maximum duration for a mentoring relationship, as decided by the University). The activities that are delivered through the Mentoring Programme are flexible. While all mentors and mentees receive training on general principles as to how the programme should work, the mentoring sessions themselves are mentee led and tailored to their needs. Mentors have the freedom to develop their own style of mentoring and each mentor/mentee pairing decides between themselves the exact frequency and focus of their meetings (with a maximum of one month between sessions). Meetings can occur face to face or online or both. A total of 795 students received mentoring through the programme between 2017 and 2021.

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[4] Racialisation is the act of giving a racial character to someone or something. It is a process of categorising and marginalising according to race. See the Centre for Mental Health Guide to Race and Ethnicity Terminology for further information:
https://www.centreformentalhealth.org.uk/guide-race-and-ethnicity-terminology
[5] Please note, the Graduate mentoring programme was not part of this evaluation.

Contact and support for mentors and mentees is as follows:[6]

At application stage
When mentees submit their application form, they receive a phone call and an email from the team inviting them to an online information and induction session

Immediately after matching
At this point, the team calls the mentor to share information about the mentee The team then send a joint email to the mentee and mentor to connect them

2 to 3 weeks after matching
The team will check in with the mentee and mentor to ensure they have met at least once

6 to 8 weeks after matching
The team ask for an update on goals, progress, and whether the mentee or mentor need any additional information or support

4 months after matching
The team ask the mentee and mentor if want to continue for another 2 months

5 months after matching
If the mentee and mentor decide to continue, at the 5 month mark the team remind them that they are nearing the end of the mentorship and to book in an end meeting

4 months after matching
If the mentee and mentor decide not to continue, the team ask them to book in an end meeting and provide post mentoring feedback

6 months after matching
The team get in touch to ask the mentee and mentor to provide post mentoring feedback

Source: SQW

Mentees and mentors also receive contact from the programme delivery team via a monthly newsletter which provides an update on the programme and includes a reminder to call, text or email the mentoring lead with an update on how the mentoring is going. There are two peer review sessions for mentors each year, one in February and one in May. All mentors are invited to attend the group sessions, which provide an opportunity for mentors to come together and share experiences and best practice. Sessions are written up by the programme delivery team and permission is sought to share case studies with mentors in a newsletter.

Mentees and mentors hear about the programme through a variety of methods:[7]

- Via a member of University staff (e.g. Student Support and Guidance Tutor, course leader, academic tutor);

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[6] This was originally included in the evaluation under RQ11, 12 and 13 of the process evaluation, see Table 3-2
[7] This was originally included in the evaluation under RQ12 of the process evaluation, see Table 3-2

- From peers who had been on the programme previously;

- Through promotional material (e.g. an email from Student Central or a leaflet on the table in the Eastbourne Campus);

- On the website.

Sometimes mentors have existing links with the University or know members of the programme delivery team. Sometimes mentors hear about the programme from social media.

- ○ 2.4 Evaluation approach

The aim of this evaluation were:

- To provide robust evidence of how effectively the mentoring programme was meeting its objectives, for whom, and to what extent change could be attributed to it.
- To inform and support the continuous improvement of the mentoring programme, through increasing the Careers and Employability Team's understanding of what was working more and less well in the mentoring programme and what could be improved.
- To scope out the feasibility of, and make recommendations for, evaluation designs to generate Type 3 (casual) evidence.

To achieve these interrelated aims, the evaluation was divided into two strands, the first comprising an impact evaluation and the second a process evaluation.

The research questions for the impact evaluation focused on the intervention's impact on rates of continuation, rates of progression between years of study, attainment and graduate outcomes. The research questions were answered through conducting a regression analysis of outcomes for mentees vs. non-mentees, using Propensity Score Matching to construct comparison groups. This analysis was based on data from the University of Brighton's Administrative and Mentoring programme monitoring datasets, as well as responses to the Graduate Outcomes Survey.

A mixed-methods approach was adopted to answer the process evaluation research questions which explored why mentees engaged with the intervention, how effective they perceived the intervention to be, and how they engaged in it. Key data sources included programme delivery team, mentee and mentor interviews, written feedback from mentees and a short mentee survey.

3. Methodology

○ 3.1 Research questions and hypotheses

The impact evaluation had two overarching hypotheses:

Working hypothesis A

● That mentees participating in the Mentoring Programmes experienced increased rates of progression into employment and/or further study and highly skilled employment relative to non-participants.

Working hypothesis B
● That the Mentoring Programmes helped the University of Brighton to reduce inequalities in outcomes between specific groups of students relating to (a) continuation, (b) progression between years of study, (c) attainment and (d) graduate outcomes.

The process evaluation was exploratory in nature, and therefore did not have specific testable hypotheses.

The four overarching research questions and related sub-research questions addressed under the impact evaluation are detailed in Table 3-1:[8]

Table 3-1: Impact evaluation research questions

Impact evaluation	
What is the impact of mentoring on rates of continuation?	RQ1: How do rates of continuation for those who participated in mentoring compare with those who did not participate?
	RQ2: To what extent do rates of continuation vary between different mentee groups involved in mentoring?
What is the impact of mentoring on rates of progression between years of study?	RQ3: How do rates of progression between years of study for those who participated in mentoring compare with those who did not participate?
	RQ4: To what extent do rates of progression between years of study vary between different mentee groups involved in mentoring?
What is the impact of	RQ5: How does attainment for those who participated in programme compare to those who did not participate?

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[8] SQW scoped the possibility of exploring the impact of mentoring on mentees' confidence. However, owing to data constraints we were unable to do this.

mentoring on attainment?	RQ6: Do mentees who participate in the programme graduate with a good degree?
	RQ7: Do rates of attainment differ by participating mentee groups?
What is the impact of mentoring on graduate outcomes?	RQ8: How do rates of graduate level employment and further study among mentees compare to those who did not participate?
	RQ9: Do rates of graduate employment and further study differ by participating mentee groups?
	RQ10: How do rates of highly skilled graduate level employment among mentees compare to those who did not participate?

<div align="right">Source: SQW</div>

The three overarching research questions and related sub-research questions addressed under the process evaluation are detailed in Table 3-2 below:[9]

Table 3-2: Process evaluation research questions

Process evaluation	
Why do mentees engage with the intervention?	RQ1: What motivates mentees to engage with the programme?
	RQ2: What goals do mentees set?
How effective do mentees perceive the intervention to be?	RQ3: How relevant do mentees believe the content of sessions is to the goals they have set?
	RQ4: To what extent do mentees feel they achieve the goals that they set?
	RQ5: How satisfied are mentees with the content of the mentoring sessions?
	RQ6: How satisfied are mentees with the structure of the mentoring sessions?
	RQ7: How satisfied are mentees with their mentors?

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[9] SQW scoped the possibility of exploring how levels of engagement with mentoring sessions differ by different mentee groups. However, owing to data constraints we were unable to do this.

	RQ8: What works well about mentee/mentor relationships? What could be improved?
	RQ9: What factors support and impede high-quality mentor/mentee relationships?
How do mentees and mentors engage with the intervention?	RQ10: With what frequency do mentoring sessions occur?
	RQ11: How much contact do the University's mentoring team have with mentors and mentees?
	RQ12: How do prospective mentees hear about the programme?
	RQ13: How do prospective mentors hear about the programme?
	RQ14: What works well about the programme's marketing? What could be improved?
	RQ15: How satisfied are mentors and mentees with communication from the programme team?
	RQ16: What works well about how the programme team communicates? What could be improved?

o 3.2 Impact evaluation design

A quasi-experimental approach enabling an examination of differences between non-randomised groups was used to address the impact evaluation hypotheses. This is because our hypotheses are comparative in nature, i.e., suggesting that mentoring yields benefits for students who choose to undertake mentoring, in comparison with their peers who do not participate in mentoring.

Regression analysis was conducted to compare outcomes for students who participated in the mentoring programme (i.e., the treatment group) to those who did not (the control group). Although simple regression can control for a range of observable characteristics, regression on a matched sample constructed with Propensity Score Matching (PSM) was used, as it better enables the regression to take into account observable characteristics associated with participation in mentoring.

Impact evaluation: sample selection

This analysis used individual-level data for students who have either participated or not participated in the mentoring programme from the 2017/18 to 2021/22 academic year.

The full dataset was constructed by merging data from the sources summarised in Table 3-3.[10] It contained a total of 50,770 unique students, and 55,549 unique student and course identifiers. In other words, out of 55,549 student and course identifiers, 4,779 observations are from students undertaking more than one course at the University.[11]

Table 3-3: Summary of data sources for impact evaluation[12]

Data source	Description	Number of unique students	Number of unique student and course identifiers
University of Brighton administrative dataset	The University of Brighton's internal administrative dataset contains information on student characteristics and outcomes, such as their degree award, continuation into the next year of study and progression decision. SQW received data for all students who were on an active course at the University from 2018 to 2021.	45,609	49,486
Mentoring programme monitoring data	Mentee data are recorded in a separate dataset, which specifies which programme a mentee undertook and in what year. This covers mentees from 2017 to 2021.	795 (Momentum: 481 Identity Match: 230 Men in Primary: 29	N/A

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[10] A data sharing agreement between SQW, the University of Brighton and TASO was put in place for this project.

[11] Analysis was conducted at the unique student-course level. We ensured that students that participated in mentoring on a different course were not included in comparison groups.

[12] A table mapping the data sources to the research questions can be found in Annex B.

Data source	Description	Number of unique students	Number of unique student and course identifiers
		LGBTQ+ Uni-Amex: 55)	
Graduate Outcomes Survey	SQW also received data on post-graduate uptake of work or further study and level of professional employment from the Graduate Outcomes Survey, for students who graduated from the University of Brighton from 2017 to 2019. Not all students complete this survey, hence the smaller sample than the Administrative dataset.	16,815	17,062

Source: SQW

A total of 795 students had undertaken mentoring across the study period, with no student completing mentoring more than once. While disaggregation by mentoring programme was considered, small sample sizes for some of the programmes would limit statistical power of the model. As such, treatment was defined as having participated in *any* of the mentoring programmes.

Overall, the full dataset had a high incidence of missing data for the outcomes of interest, for a few reasons. Firstly, the University of Brighton's internal coding system leaves some information unrecorded. For example, continuation data was only recorded for full-time students, and it was not recorded for the year that a student completed their course. Secondly, because some students' final course year does not fall into the study period, their attainment and graduate outcome data are 'missing' because they are still studying. Finally, not all students answered the Graduate Outcomes Survey post-graduation, which limited the work or further study and highly skilled employment outcomes.

As the missing data was on the outcome variables of interest, it was not possible to assess whether or not missingness was correlated with the likelihood of achieving each outcome. The findings presented in this study may therefore only be representative across the students for whom we have data.

To minimise the impact of this missing data on the regression analysis, matching was undertaken separately for each outcome, such that matches were only made for observations for which there were data for that outcome. Table 3-4 details the outcome of matching.

Table 3-4: Results of matching

Outcome measure	Matches	Sample size
Continuation	551	1,102
Progression	538	1,076
Attainment[13]	284	568
Work or further study	105	210
Highly skilled employment	94	188

Source: SQW

Impact evaluation: outcome measures

Table 3-5 summarises the primary outcomes (which map directly onto the research questions outlined in Table 3-1). The University of Brighton prepared the data before then sharing it with SQW.

Table 3-5: Primary outcome measures

Outcome measure	Further information	Data source
Continuation	This is a binary variable indicating whether a student was at the University in the next academic year, either because they are continuing with the next course year, repeating a course year or undertaking further study at the University. This is recorded per student per course per academic year, for full-time students only.	The University of Brighton's Administrative dataset

[13] Attainment matching was done using only undergraduate students. This is because, under the University of Brighton's definition of a Good Degree for postgraduates (Distinction, Merit or Pass), all postgraduate mentees achieved a Good Degree.

Outcome measure	Further information	Data source
Progression	This is a binary variable indicating whether a student progressed into the next academic year, vs. resitting or failing. This is recorded per student per course per academic year.	The University of Brighton's Administrative dataset
Attainment	This is a binary variable indicating whether a student's degree is classed as a Good Degree, i.e. a 1st and 2:1 for undergraduates or a Distinction, Merit and Pass for postgraduates. This is recorded once per student per course. Analysis of this outcome only used undergraduate students. This is because, under the University of Brighton's definition of a Good Degree for postgraduates (Distinction, Merit or Pass), all postgraduate mentees achieved a Good Degree.	The University of Brighton's Administrative dataset
Work or further study	This is a binary variable indicating whether a graduate reported undertaking work or further study on the Graduate Outcomes Survey. Students receive an invitation to complete this survey around 15 months after completing their course.[14] As such, this is recorded once per student per course.	Graduate Outcomes Survey
Highly skilled employment	This is a binary variable indicating whether a graduate reported being in highly skilled employment on the	Graduate Outcomes Survey

[14] Graduate Outcomes (2023). Available at: https://www.graduateoutcomes.ac.uk/

Outcome measure	Further information	Data source
	Graduate Outcomes Survey, roughly 15 months after completing their course, as detailed above. This is recorded once per student per course.	

Impact evaluation: power calculations

Power calculations have been conducted for our primary outcomes, using sensitivity analysis for logistic regression (Yenipinar et al, 2019). They are based on the following assumptions:

- Family of test statistic: z-test
- Significance level: 0.05
- Power: 0.8
- X distribution: binomial

Table 3-6 on the following page summarises the minimum detectable effect size (MDES) in terms of odds ratios, estimated using the achieved sample sizes for the matched samples, for each outcome of interest.

The difference between the required likelihood and the probability of outcomes in the control group is relatively small for continuation and work or further study. However, the required likelihood is very close to 1 for work or further study. For progression and attainment, the required difference is slightly larger but not as close to 1 – implying a lower odds ratio and an increased likelihood to detect an effect. For highly skilled employment the difference is the largest of these observed, however, as the control probability is further from 1 the likelihood of detecting an effect is higher than in, for example, the work or further study outcome. This means that the analysis is well-suited to pick up an effect that could be reasonably expected, given the intensity of the intervention for continuation, progression and attainment. However, for highly skilled employment and work or further study, the analysis is less likely to identify a small treatment effect (Cohen, 1988).

Table 3-6: Power calculations

Outcome measure	Sample size (total)	Size of treatment group	Size of control group	Prob. of outcome for non-mentees	Odds Ratio	Required Prob. in Treatment group to detect effect[15]
Continuation	1,102	551	551	0.92	2.10	0.96
Progression	1,076	538	538	0.78	1.56	0.85
Attainment	568	284	284	0.75	1.81	0.84
Work or further study	210	105	105	0.95	7.70	0.99
Highly skilled employment	188	94	94	0.75	3.21	0.91

Impact evaluation: analytical approach

The impact evaluation analysis set out to compare outcomes between a 'treatment' group of students who participated in mentoring and a comparison group of students who did not.

The comparison group for this analysis was constructed using Propensity Score Matching (PSM), a quasi-experimental method that reduces selection bias in a sample where people are not randomly assigned to a treatment or control condition. PSM was used because students choosing to participate in mentoring may have been systematically different from the rest of the student population. In other words, PSM is used to reduce the chance that an estimated difference between treatment and control groups is caused by factors predicting treatment (i.e., involvement in mentoring) rather than the treatment (mentoring) itself.

This statistical technique employs propensity scores (the likelihood of being in the treatment group), which are constructed from a regression that estimates students' probability of participating in the programme based on their observable characteristics. Matching was undertaken on the student-course level as outcomes are assessed as the additional benefits from undertaking a course where a student has received mentoring.

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[15] In a simple logit model with no control variables

For each student on a course during which they received mentoring, a student on a course who never received mentoring with the closest propensity score from the comparison pool was selected for the matched comparison group in a 1-to-1 matching approach. Calipers were not used for this matching. The comparison group was thus composed of students that are similar to actual mentees in terms of their propensity to be treated.

Treatment was defined by students' participation in any of the four mentoring programmes over the duration of their course. As a result, treatment was determined at the student and course identifier level. For mentees who undertook multiple courses at the University, only the course during which they undertook mentoring was included in the analysis and any student and course identifier corresponding to a course during which mentoring was not undertaken was excluded from the matching process. This ensured that students who received mentoring in a previous course were not selected for the counterfactual group if they came back to do another course at the University, e.g., if they came back to do a postgraduate degree after completing their undergraduate degree.

Figure 3-1 outlines the variables included in the matching model from the Administrative dataset, which were individually statistically significantly associated with treatment. A further variable indicating a student's domicile (UK, EU (excluding UK), Other overseas) was tested, but was not statistically significantly associated with treatment and was not included in the matching model.

Figure 3-1: Characteristics that are individually statistically significantly associated with treatment

- **Level of study**: level of study grouping, four levels (Undergraduate, Postgraduate – Taught, Postgraduate – Research, Other)

- **School**: name of school that is assigned ownership of the student's course

- **Gender**: self-identified gender of the student (Female, Male, Non-binary, Other)

- **Gender ID:** whether the student's assigned gender at birth matches their self-identified gender (binary)

- **Ethnicity**: the student's ethnicity (White, Asian, Black, Mixed, Other)

- **Mature:** whether the student is classified as young (Age on Entry <21) or mature (Age on Entry = 21 or above)

- **Disability group**: whether the student declared to have a disability at start of their course (binary)

- **Sexual orientation**: information about the student's sexual orientation (Heterosexual, Gay man, Gay woman, Bisexual, Other)

- **IMD**: Local deprivation of the area where the student lived prior to starting their course (Q1= most deprived, Q5 = least deprived)

- **Mode of attendance**: whether a student ever undertook a part-time mode of attendance (vs. full-time) (binary)[16]

- **Eligibility for Care Leaver and Estranged bursaries**: indicator of eligibility (binary)

Source: SQW

Following each match, the distribution of propensity scores among the treated and control groups were compared; the resulting graphs (in Annex D) show that matching was successful in reducing differences in observable characteristics between mentees and the comparison group. This was reaffirmed through a covariate imbalance test of sampling bias between treatment and control groups (in Annex D).

The final step was to run regressions to uncover relationships between participating in mentoring and outcomes of interest. Because all outcome measures were binary, logistic regression was used, with the variables from the matching model (listed in Figure 3-1) included as controls.[17]

Regressions were run in different formats of the dataset for 'year-to-year' vs 'one-time' outcomes. For year-to-year outcomes (i.e. progression and continuation) we estimated a logistic regression that tested whether the likelihood of achieving the outcomes varied for students that had had participated in mentoring in that academic year (contemporaneous effect) or in previous academic years (post-treatment effect). This model was run separately for students in the first, second and third years of their

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[16] This variable was not used as a control for continuation and progression; because these variables looked at outcomes for each year of study, variables used to describe the entire course were not used.

[17] We included covariates in our outcome models in case, a), of possible remaining imbalances or, b), covariates were predictive of the outcome. We then used a cluster-robust standard error estimator to estimate the standard error. This is approach is based on evidence from Abadie and Spiess (2022) and Austin and Small (2014). We did not interpret coefficient estimates on covariates.

course, when the majority of students undertook mentoring.[18] The model was, therefore, specified with the following two equations:

$$Y_i = \beta_0 + \beta_1\,MentoringProgrammeCurrentYear_i + \beta_2 X_i + \varepsilon_i$$

$$Y_i = \beta_0 + \beta_1\,MentoringProgrammePreviousYears_i + \beta_2 X_i + \varepsilon_i$$

$$where\ X_i\ is\ a\ vector\ of\ controls$$

Because there was only one outcome per student and course identifier for 'one-time' outcomes (i.e. attainment, graduate outcomes (i.e., work or study, highly skilled employment)), we tested in a logistic regression whether there is a statistically significant difference in the likelihood of achieving these outcomes depending on whether a student had participated in one of the four mentoring programmes at all during their course. The equation was, thus, specified as follows:[19]

$$Y_i = \beta_0 + \beta_1\,MentoringProgramme_i + \beta_2 X_i + \varepsilon_i$$

Regressions were run on both the unmatched and matched sample in order to triangulate findings.

The impact evaluation also explored variation in outcomes across student groups for the following characteristics: gender, ethnicity, sexual orientation, disability and IMD background. The characteristics were deemed substantively important in terms of the University's efforts to widen participation.

In addition to cross-tabulations that compare outcomes across groups, logistic regressions were used to examine the associations between outcomes and these characteristics. These were run twice: once in the sample as a whole, and a second time for mentees only. This enabled a better understanding of the impact of the mentoring programme on outcome disparities by group.

- o   3.3 Process evaluation design

To answer the process evaluation research questions SQW adopted a mixed-methods approach, using both qualitative and quantitative research methods, enabling participants to engage with the evaluation at times convenient to them. Used in combination, these methods provide a more rounded understanding of the research topic compared to either approach used in isolation (Creswell and Plano Clark, 2007). This enhanced understanding is achieved through triangulating results across data sources which, in turn, increases the validity of inferences (Molina-Azorin, 2016).

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[18] The following numbers of students for whom there are administrative data participated in mentoring per course year: Year 1: 314; Year 2: 179; Year 3: 169; Year 4: 4; Placement year: 4; Foundation year: 6

[19] Mode of attendance was not specified as a control for the continuation outcome, which was only recorded for full-time students.

Process evaluation: data collection approach

From the use of qualitative methods, specifically interviews and written feedback, SQW sought to gain rich, in-depth insights from those involved in the programme (i.e., mentees, mentors and the project delivery team) and to explore the three overarching research questions: why mentees engage with the programme, how they engage, and how effective they perceive the intervention to be. Through the deployment of a mentee survey, SQW sought to quantify the extent to which experiences and reflections varied among participants.

The data sources used in the process evaluation are summarised in Table 3-7. A table mapping the data sources to the research questions can be found in Annex B.

Table 3-7: Summary of data sources for process evaluation

Data source	Description
Programme delivery team interviews	Topics explored during the interviews included the matching process, mentor/mentee relationships, monitoring procedures and marketing activities
Mentee interviews	Interviews were conducted with mentees who participated in the programme in the 2021/22 or 2022/23 academic year. Interviews took place one-on-one or in small groups. Questions had a particular focus on mentees' motivation and goals
Written feedback from mentees	Written feedback was collected via a short electronic form distributed at the end of interviews conducted with the 2022/23 academic year cohort. This enabled mentees to provide feedback they would rather not share publicly. The form included questions on the relevance, content and structure of mentoring sessions and mentor/mentee relationships
Mentor interviews	Topics covered during the interviews included how mentors heard about the programme, their motivations for being involved, reflections on the relationship they had with their mentee, and feedback on the support they received from the programme team
Mentee survey	The survey included questions on how regularly the mentee met with their mentor, the goals they set, the extent to which they felt they achieved their goals, and

Data source	Description
	how satisfied they were with different aspects of the programme (such as the structure and content of mentoring sessions, the mentor they were assigned and the communication they received from the programme delivery team). As this was the first time the survey had been piloted by the University mentees were also given the opportunity to provide feedback on the questions.

<div align="right">Source: SQW</div>

Process evaluation: sample selection

The four programme delivery team staff and all mentees and mentors that were currently participating in the mentoring programme and had engaged in at least four mentoring sessions together in the 2022/23 academic year were eligible to take part in the evaluation. This equated to 37 mentees and 35 mentors.

Acknowledging the total number of potential participants mentioned above, there were no sample size requirements for this aspect of the data collection: the intention was to engage as many participants as possible in the time available. The analysis also included the transcripts of ten mentee interviews conducted in 2021/22.

The achieved sample sizes for each of the data sources used in the process evaluation are detailed in Table 3-8.

Table 3-8: Process evaluation sample sizes

Data source	Sample size
Programme delivery team interviews	4
Mentee interviews	19 2021/22 – 10 mentees 2022/23 – 9 mentees
Written feedback from mentees	9
Mentor interviews	6
Mentee survey	9

Process evaluation: analytical approach

The University of Brighton undertook, transcribed and anonymised interviews with the programme delivery team, mentees and mentors. After familiarising themselves with the data, SQW then used the qualitative software MaxQDA to conduct a robust structured analysis of the transcripts and written feedback: each document was coded using a framework aligned to the study research questions.[20] The coding framework used for the qualitative analysis can be found in Annex C.

The University of Brighton collated and anonymised the survey responses. SQW then ran frequency analyses on the data and produced figures illustrating responses. Open text responses were also reviewed and synthesised.

3.4 Ethics

All primary data collection required ethical approval. This was granted by the Cross-School Research Ethics Committee (CREC) at the University of Brighton. The ethical approval reference number was 2023-12159. All prospective participants received an information sheet during recruitment. This provided them with the information they needed to give informed consent and detailed their rights. Prospective participants could also ask members of the research team questions before deciding whether to take part in the evaluation. If participants wished to, they could ask questions afterwards of the research team or raise concerns with the University's ethics committee. Participants who decided to take part in the evaluation signed a consent form.

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[20] This analysis therefore deviates from traditional thematic analysis (for example, that outlined by Braun and Clarke, 2012) as our codes were derived from the research questions, and analysis was structured around the research questions rather than the inductive generation of new, overarching themes.

4.   Impact evaluation analysis and results

Description of the sample

The demographic profile of the unmatched sample, which the matched samples will be compared against, is included in Annex D. Additional tables in this annex compare the profile of the unmatched and matched samples for each outcome measure.

What is the impact of mentoring on rates of continuation?

Matching checks

For continuation, the matched sample consists of 1,102 unique student and course identifiers, half of which participated in mentoring and the other half which did not.

The demographic profile and balance checks for the matched sample can be found in Annex D.

Descriptive statistics

Table 4-1 details the frequency of continuation for the unmatched and matched samples.

Table 4-1: Frequency of continuation

	Unmatched sample		Matched sample	
	Frequency	Percent	Frequency[21]	Percent
Continuation	55,467	92.4%	1,783	95.2%
Non-continuation	4,553	7.6%	90	4.8%

Source: SQW analysis

Note that the way the data is recorded, 'continuation' means that the student is still at the University in the next academic year. It does not necessarily mean they 'continued' on the same course or 'progressed' and 'passed' into the next year of the course. A student who resat a year is still recorded as 'continuing'.

In the unmatched sample, roughly 92% of the 60,020 observations for which there are continuation data available was still at the University in the next academic year. For the matched sample, this figure is slightly higher, at around 95%.

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[21] The sample consists of 1,102 unique student and course identifiers; there are multiple continuation observations per identifier.

Table 4-2 contains a cross tabulation of continuation and treatment, using both the contemporaneous (i.e. mentoring happened in the same year) and post-treatment (i.e. mentoring happened in a previous academic year) definitions of treatment.

Table 4-2: Frequency of continuation cross-tabulated by treatment and control conditions

	Unmatched sample		Matched sample	
	Non-mentees	Mentees	Non-mentees	Mentees
Contemporaneous treatment				
Continuation	92.4%	95.3%	95.0%	95.7%
Post-treatment				
Continuation	92.4%	95.6%	95.0%	96.3%

Source: SQW analysis

In the unmatched sample, for contemporaneous treatment, 95.3% of mentees continued at the University, versus 92.4% for non-mentees. However, in the matched sample the rates of continuation for mentees (95.7%) and non-mentees (95.0%) were more comparable.

Similarly, for post-treatment, 95.6% of mentees continued at the University, versus 92.4% non-mentees. The gap was smaller for the matched sample: the rate of continuation was 96.3% for mentees and 95.0% for non-mentees.

How do rates of continuation for those who participated in mentoring compare with those who did not participate?

Table 4-3 summarises the results of the regressions for continuation, providing the coefficient for the treatment variable and corresponding odds ratio. This is done for course years one through three in the unmatched sample, where mentees are compared to the wider student population, as well as the matched sample, where mentees are compared to a constructed control group.

Table 4-3: Regression results for continuation

	Unmatched sample	Matched sample
Course Year 1		
Contemporaneous effect coefficient (std. err.)	0.620 (0.264)* OR: 1.859	0.182 (0.350) OR: 1.120
Post-treatment effect coefficient (std. err.)	*Not applicable in the first year*	*Not applicable in the first year*

	Unmatched sample	Matched sample
Course Year 2		
Contemporaneous effect coefficient (std. err.)	0.363 (0.514) OR: 1.438	0.731 (0.634) OR: 2.077
Post-treatment effect coefficient (std. err.)	-0.366 (0.323) OR: 0.694	-0.224 (0.453) OR: 0.799
Course Year 3		
Contemporaneous effect coefficient (std. err.)	*Analysis not meaningful due to variable issues*	*Analysis not meaningful due to variable issues*
Post-treatment effect coefficient (std. err.)	0.930 (0.730) OR: 2.535	0.993 (0.935) OR: 2.699

Source: SQW analysis
Significance levels: +0.10, 0.05*, 0.01**

In the matched sample, participation in mentoring was not statistically associated with being at the University in the next academic year in the contemporaneous treatment condition. There were no statistically significant associations under the post-treatment condition for students in their second or third years.

The results indicate that, when compared to the wider population, students undertaking mentoring in the first year of a course were significantly more likely to continue at the University than non-mentee peers. This same relationship was observed but not statistically significant for students undertaking mentoring in their second or third years. However, since the effect is only significant on the unmatched sample and the matched samples have higher rates of continuation on average, it is likely that the effect in the first year is due to pre-selection rather than the outcome of mentoring. i.e., mentees are more likely to continue because the mentoring programme attracts students that are more likely to continue.

There are two important caveats to highlight in this analysis. First, there is some inconsistency in the coding of continuation data. For example, some full-time students are recorded as having been at the University for multiple years in the study period but do not have continuation data for some of those years. As a result, the analysis might not be capturing the full effect of mentoring. Second, continuation is not always an indication of a 'good outcome' as it just records if a student stayed at the University. For example, if a student resits a year, continuation is recorded as 'yes' but progression – an unambiguously positive outcome – is not. Also, if a student completed their course in their final year of study, continuation would not be recorded; 'continuing' in one's final

year is used for a student that failed but chose to re-take the year, *or* for a student who undertook further study at the University (e.g. a postgraduate course).

To what extent do rates of continuation vary between different mentee groups involved in mentoring?

Table 4-4 details the rate of continuation by different Widening Participation characteristics, for the unmatched sample as well as mentees in the year that they undertook mentoring (contemporaneous effect) and mentees in subsequent years (post-treatment effect). Asterisks are used to indicate where a Widening Participation group's rate differs significantly from the reference category.

Table 4-4: Continuation by Widening Participation group

Widening Participation characteristic	Widening Participation group	In the sample as a whole	Sub-sample size[22]	Mentees Contemporaneous effect	Sub-sample size	Mentees Post-treatment effect	Sub-sample size
Gender (ref = Female)	Male	**90.9%	23,515	94.8%	173	93.8%	145
	Female	93.4%	36,052	95.4%	393	96.3%	299
	Non-binary	*90.5%	346	100.0%	5	100.0%	5
	Other	90.7%	107	100.0%	1	100.0%	3
Ethnicity (ref = White)	White	92.5%	37,624	95.6%	271	96.1%	206
	Asian	**93.6%	5,883	94.4%	71	97.0%	66
	Black	92.3%	3,363	96.9%	97	96.3%	82
	Mixed	91.9%	2,964	91.9%	37	100.0%	34
	Other	93.3%	3,153	95.8%	24	88.2%	17
Sexual orientation (ref = Heterosexual)	Heterosexual	92.9%	45,436	95.6%	412	95.4%	325
	Gay man	**90.6%	1,235	100.0%	21	93.8%	16
	Gay woman	93.2%	1,226	93.3%	15	100.0%	13
	Bisexual	**90.6%	4,180	95.2%	42	96.0%	25
	Other	91.7%	1,830	100.0%	28	94.3%	35

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[22] Sample sizes for each characteristic are different, due to missing data on some characteristics.

Widening Participation characteristic	Widening Participation group	In the sample as a whole	Sub-sample size[22]	Mentees Contemporaneous effect	Sub-sample size	Mentees Post-treatment effect	Sub-sample size
Disability (ref = No disability declared)	No disability declared	92.9%	51,409	95.7%	464	96.2%	342
	Disability declared	**91.1%	7,635	93.4%	106	93.5%	107
IMD Background (ref = Q5)	Q1 (most deprived)	**91.4%	6,055	95.6%	90	96.4%	84
	Q2	**92.2%	9,765	95.7%	117	97.9%	97
	Q3	**93.0%	10,350	96.1%	103	94.4%	89
	Q4	**93.0%	11,394	93.7%	95	92.4%	66
	Q5 (least deprived)	93.9%	12,270	94.5%	73	94.9%	59

Source: SQW analysis
Significance levels: +0.10, 0.05, 0.01***

In the wider student population sample, there are statistically significant differences in continuation rates for sub-groups of each Widening Participation group against their respective reference categories. In the mentee samples, however, none of the differences are statistically significant.

While this appears to suggest that differences in continuation among mentees in different Widening Participation groups are narrower among those who take part in mentoring, it is important to note that these students are likely to be systematically different from the non-mentees. Given the weak evidence of impact from the overall analysis on continuation, it is not possible to attribute narrowing of gaps for different groups to the intervention. It is also important to note that there is limited data for mentees in both the contemporaneous and post-treatment effect samples. The fact that there are no statistically significant differences in these samples, then, may reflect the sample size, rather than a true absence of differences.

What is the impact of mentoring on rates of progression between years of study?

Matching checks

The matched sample consists of 1,076 unique student and course identifiers, half of which participated in mentoring and the other half which did not.

The demographic profile and balance checks for the matched sample can be found in Annex D.

Descriptive statistics

Table 4-5 details the frequency of progression for the unmatched and matched samples.

Table 4-5: Frequency of progression

	Unmatched sample		Matched sample	
	Frequency	Percent	Frequency[23]	Percent
Progression	46,532	78.4%	1,371	77.5%
Resit or fail	12,796	21.6%	399	22.5%

Source: SQW analysis

Note that the way the data is recorded, 'progression' means that the student passed into the next academic year (meaning they neither resat nor failed). A student finishing their course will not be coded as having progressed; this will be captured in the attainment variable, which is analysed, below.

In the unmatched sample, about 78.5% of the 59,328 observations for which there are progression data progressed into the next academic year. This figure is roughly the same for the matched sample, at 77.5%.

Table 4-6 contains a cross-tabulation of progression and treatment, using both the contemporaneous and post-treatment definitions of treatment.

Table 4-6: Frequency of progression cross-tabulated by treatment and control conditions

	Unmatched sample		Matched sample	
	Non-mentees	Mentees	Non-mentees	Mentees
Contemporaneous treatment				
Progression	78.4%	81.8%	75.8%	83.0%
Post-treatment				
Progression	78.5%	63.7%	79.9%	64.5%

Source: SQW analysis

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[23] The sample consists of 1,076 unique student and course identifiers; there are multiple progression   observations per identifier.

In the unmatched sample, for contemporaneous treatment, 81.8% of mentees progressed, versus 78.4% for non-mentees. In the matched sample, the difference is larger, with a progression rate of 75.8% for non-mentees and 83.0% for mentees.

For post-treatment, 63.7% of mentees progressed, versus 78.5% of non-mentees. The gap was roughly similar in the matched sample: the rate of progression was 64.5% for mentees and 79.9% for non-mentees.

How do rates of progression between years of study for those who participated in mentoring compare with those who did not participate?

Table 4-7 summarises the results of the regressions for progression, providing the coefficient for the treatment variable and corresponding odds ratio. This is done for the unmatched sample, where mentees are compared to the wider student population, as well as the matched sample, where mentees are compared to a constructed control group.

Table 4-7: Regression results for progression

	Unmatched sample	Matched sample
Course Year 1		
Contemporaneous effect coefficient (std. err.)	0.605 (0.197)** OR: 1.831	0.526 (0.243)* OR: 1.692
Post-treatment effect coefficient (std. err.)	*Not applicable in the first year*	*Not applicable in the first year*
Course Year 2		
Contemporaneous effect coefficient (std. err.)	0.858 (0.299)** OR: 2.358	0.746 (0.333)* OR: 2.109
Post-treatment effect coefficient (std. err.)	-0.238 (0.183) OR: 0.788	-0.600 (0.254)* OR: 0.549
Course Year 3		
Contemporaneous effect coefficient (std. err.)	-0.420 (0.551) OR: 0.657	-0.338 (0.568) OR: 0.713
Post-treatment effect coefficient (std. err.)	-0.807 (0.329)* OR: 0.446	-0.600 (0.487) OR: 0.549

Source: SQW analysis
Significance levels: +0.10, 0.05*, 0.01**

Mentoring is statistically significantly associated with an increased likelihood of progressing into students' second and third academic year in both the unmatched and

matched sample in the year of mentoring. As such, first- and second-year mentees are more likely to have a positive progression decision in the year that they have undertaken mentoring. There is no such statistically significant association for third year mentees[24] but, given progression is not coded for students who complete their course, the lack of a significant effect in the third year is not necessarily surprising (plus it relates to a smaller group of students).

The results are opposite for the post-treatment effect. In the matched sample, second year students who have undertaken mentoring in previous academic years are less likely to progress into the next academic year than those in the wider population. This was also found to be the case for third year mentees in the unmatched sample.

The fact that progression is higher in the year that students undertake mentoring but lower in subsequent years may suggest that the programme is helping students who specifically need support to progress. This impact is, however, limited to the short term; once they complete mentoring, former mentees may again struggle to progress from one academic year to the next.

To what extent do rates of progression between years of study vary between different mentee groups involved in mentoring?

Table 4-8 details the rate of progression by different Widening Participation characteristics, for the unmatched sample as well as mentees in the year that they undertook mentoring (contemporaneous effect) and mentees in subsequent years (post-treatment effect). Asterisks are used to indicate where a Widening Participation group's rate differs significantly from the reference category.

Table 4-8: Progression by Widening Participation Group

Widening Participation characteristic	Widening Participation group	In the sample as a whole	Sub-sample size	Mentees Contemporaneous effect	Sub-sample size	Mentees Post-treatment effect	Sub-sample size
Gender (ref = Female)	Male	**72.7%	22,997	79.2%	144	56.8%	111
	Female	82.2%	35,826	82.5%	332	66.5%	269
	Non-binary	*77.8%	387	100.0%	6	75.0%	4
	Other	**68.6%	118	100.0%	1	50.0%	2

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[24] A third-year student who has progressed into the next year of their course might be a part-time student or a student on a course lasting longer than three years.

Widening Participation characteristic	Widening Participation group	In the sample as a whole	Sub-sample size	Mentees Contemporaneous effect	Sub-sample size	Mentees Post-treatment effect	Sub-sample size
Ethnicity (ref = White)	White	80.7%	37,500	85.7%	231	70.7%	174
	Asian	**77.5%	6,075	84.2%	57	62.0%	50
	Black	**70.7%	3,591	81.0%	79	62.8%	78
	Mixed	**74.7%	2,832	**65.5%	29	63.6%	22
	Other	**74.5%	2,871	75.0%	20	**28.6%	14
Sexual orientation (ref = Heterosexual)	Heterosexual	79.5%	44,546	82.1%	341	65.8%	266
	Gay man	**76.3%	1,296	82.4%	17	65.0%	20
	Gay woman	79.8%	1,268	69.2%	13	38.5%	13
	Bisexual	**75.4%	4,046	80.5%	41	63.6%	22
	Other	**74.3%	1,683	80.0%	25	53.9%	26
Disability (ref = No disability declared)	No disability declared	79.0%	50,494	83.5%	376	63.8%	271
	Disability declared	**74.7%	8,041	75.5%	106	62.8%	113
IMD Background (ref = Q5)	Q1 (most deprived)	**72.6%	6,502	81.3%	80	*57.3%	82
	Q2	**75.7%	10,297	86.1%	108	*57.9%	76
	Q3	**78.9%	10,710	80.5%	82	68.0%	78
	Q4	**80.3%	11,506	77.8%	72	65.0%	60
	Q5 (least deprived)	81.8%	11,726	76.3%	59	77.1%	48

Source: SQW analysis
Significance levels: +0.10, 0.05, 0.01**

In the wider student sample, there are statistically significant differences for almost all sub-groups of each Widening Participation group. There are some statistically significant differences in the contemporaneous effect and post-treatment mentee samples, although considerably fewer than the wider student sample. It is important to note that the sample size for mentees is much smaller than the overall sample and

finding fewer statistically significant differences between the groups is therefore not surprising.

The mentee sample appears to have fewer differences in progression by Widening Participation sub-group, which may suggest that mentoring can reduce disparities for its participating students. However, as described above, this might also reflect limitations of the sample size of mentees for which progression data is available.

What is the impact of mentoring on attainment?

Matching checks

The matched sample consists of 568 unique student and course identifiers, half of which participated in mentoring and the other half which did not.

The demographic profile and balance checks for the matched sample can be found in Annex D.

Descriptive statistics

Table 4-9 details the frequency of attainment, in terms of achieving a Good Degree for undergraduates in the unmatched and matched samples.

The matched sample was constructed from undergraduate students only. This is because under the University of Brighton's definition of a Good Degree for post-graduates (achieving a Distinction, Merit or Pass), all postgraduate mentees achieved a Good Degree.

Table 4-9: Frequency of achieving a Good Degree

	Unmatched sample		Matched sample	
	Frequency	**Percent**	**Frequency**	**Percent**
Achieved a Good Degree	12,621	75.1%	422	74.3%
Did not achieve a Good Degree	4,190	24.9%	146	25.7%

Source: SQW analysis

In the unmatched sample, 75.1% of the 16,811 undergraduate students for whom there is attainment data achieved a Good Degree on their course. The figure for the matched sample is very similar, at 74.3%.

Table 4-10 contains a cross tabulation of attainment and treatment.

Table 4-10: Frequency of achieving a Good Degree cross-tabulated by treatment and control conditions

	Unmatched sample		Matched sample	
	Non-mentees	Mentees	Non-mentees	Mentees
Achieved a Good Degree	75.1%	74.1%	72.9%	75.7%

Source: SQW analysis

In the unmatched sample, 74.1% of the undergraduate mentees for whom there are attainment data achieved a Good Degree; the rate for non-mentees is about the same, at 75.1%.

In the matched sample, the rate of achieving a Good degree for undergraduate mentees was 75.7% and 72.9% for non-mentees.

Matching checks

The matched sample consists of 568 unique student and course identifiers, half of which participated in mentoring and the other half which did not.

The demographic profile and balance checks for the matched sample can be found in Annex D.

How does attainment for those who participated in programme compare to those who did not participate?

Table 4-11 summarises the results of the regressions for attainment, in terms of achieving a Good Degree. It provides the coefficient for the treatment variable and corresponding odds ratio. This is done for the unmatched sample, where mentees are compared to the wider student population, as well as the matched sample, where mentees are compared to a constructed control group.

Table 4-11: Regression results for attainment

Treatment coefficient	Unmatched sample n=14,336	Matched sample n=560[25]
Mentoring coefficient (std. err.)	0.022 (0.141) OR: 1.022	0.156 (0.208) OR: 1.169

The analysis reveals that participation in the mentoring programme is not statistically significantly associated with achieving a Good Degree for undergraduates, i.e. a 1st or 2:1.

Do rates of attainment differ by participating mentee groups?

Table 4-12 details the rate of attainment by different Widening Participation characteristics, for the unmatched sample as well as mentees for the course that they undertook mentoring during. Asterisks are used to indicate where a Widening Participation group's rate differs significantly from the reference category.

Table 4-12: Attainment by Widening Participation group (undergraduates)

Widening Participation characteristic	Widening Participation group	In the sample as a whole	Sub-sample size	Mentees	Sub-sample size
Gender (ref = Female)	Male	**73.4%	6,443	73.5%	102
	Female	76.1%	10,323	74.8%	230
	Non-binary	88.9%	27	66.7%	3
	Other	77.8%	18	100.0%	2
Ethnicity (ref = White)	White	78.2%	11,231	81.9%	155
	Asian	**64.4%	1,456	71.1%	38
	Black	**61.0%	800	**59.0%	61
	Mixed	*74.8%	773	69.2%	26
	Other	**62.3%	663	81.3%	16
Sexual orientation (ref = Heterosexual)	Heterosexual	75.5%	13,217	72.4%	257
	Gay man	71.8%	319	87.5%	8
	Gay woman	79.6%	294	62.5%	8
	Bisexual	77.9%	897	90.0%	20

[25] Note: 237 observations omitted, where categorical variable categories (school=Brighton and Sussex Medical School; gender=Other) predict success or failure perfectly.

Widening Participation characteristic	Widening Participation group	In the sample as a whole	Sub-sample size	Mentees	Sub-sample size
	Other	**68.9%	415	87.5%	16
Disability (ref = No disability declared)	No disability declared	75.1%	14,678	75.5%	277
	Disability declared	75.8%	1,937	70.7%	58
IMD Background (ref = Q5)	Q1 (most deprived)	**71.0%	1,582	71.2%	59
	Q2	**74.2%	2,791	76.1%	71
	Q3	*75.8%	3,058	82.1%	67
	Q4	77.8%	3,430	72.1%	61
	Q5 (least deprived)	77.9%	3,706	69.8%	43

Source: SQW
Significance levels: +0.10, 0.05, 0.01***

In the undergraduate sample as a whole, attainment outcomes are statistically significantly different for Widening Participation sub-groups, in terms of gender, ethnicity, sexual orientation and IMD background. For the mentee sample, there are differences for the ethnicity sub-groups.

Although this suggests that mentoring is associated with differences in attainment outcomes for Widening Participation groups, the lack of differences in the mentee sample may reflect the number of students it contains. The demographic profile of the matched sample is summarised in Annex D.

What is the impact of mentoring on graduate outcomes?

Matching checks

The matched sample consists of 210 unique student and course identifiers, half of which participated in mentoring and the other half which did not.

The demographic profile and balance checks for the matched sample can be found in Annex D.

Work or further study

Descriptive statistics

Table 4-13 details the frequency of being in work or further study, for the unmatched and matched samples.

Table 4-13: Frequency of being in work or further study

	Unmatched sample		Matched sample	
	Frequency	**Percent**	**Frequency**	**Percent**
In work or further study	8,814	94.8%	202	96.2%
Not in work or further study	488	5.3%	8	3.8%

Source: SQW analysis

In the unmatched sample, roughly 95% of the 9,302 student and course identifiers for which there are Graduate Outcomes data available were in work or further study upon completing the Graduate Outcomes Survey. This figure is roughly the same in the matched sample, at around 96%.

Table 4-14 contains a cross tabulation of graduate employment and further study and treatment.

Table 4-14: Frequency of being in work or further study cross-tabulated by treatment and control conditions

	Unmatched sample		Matched sample	
	Non-mentees	**Mentees**	**Non-mentees**	**Mentees**
In work or further study	94.7%	95.3%	95.2%	97.1%

In the unmatched sample, 95.3% of mentees answering the Graduate Outcomes Survey were undertaking work or further study, versus 94.7% of non-mentees.

In the matched sample, this figure is much higher, at 97.1% of mentees undertaking work or study, compared to 95.2% of non-mentees.

Matching checks

The matched sample consists of 210 unique student and course identifiers, half of which participated in mentoring and the other half which did not.

The demographic profile and balance checks for the matched sample can be found in Annex D.

How do rates of graduate level employment and further study among mentees compare to those who did not participate?

Table 4-15 summarises the results of the regressions for graduate employment and further study.

Table 4-15: Regression results for work or further study

Treatment coefficient	Unmatched sample n=5,440	Matched sample n=128[26]
Mentoring coefficient (std. err.)	0.946 (0.633) OR: 2.575	1.010 (0.959) OR: 2.746

Source: SQW analysis
Significance levels: +0.10, 0.05, 0.01***

Participating in mentoring was not found to be statistically significantly associated with students reporting being in work or further study upon completing the Graduate Outcomes Survey.

However, as indicated by the power analysis, this analysis is less likely to identify a small treatment effect.

Do rates of graduate employment and further study differ by participating mentee groups?

Table 4-16 details the rate of attainment by different Widening Participation characteristics, for the unmatched sample as well as mentees for the course that they undertook mentoring during. Asterisks are used to indicate where a Widening Participation group's rate differs significantly from the reference category.

Table 4-16: Graduate employment and further study for Widening Participation groups

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[26] Note: 82 observations were omitted, where categorical variable categories (gender=Non-binary; gender=Other; ethnicity=Mixed; ethnicity=Black; sex_orient=Gay May; sex_orient=Gay woman; sex_orient-Bisexual) predict success or failure perfectly.

Widening Participation characteristic	Widening Participation group	In the sample as a whole	Sub-sample size	Mentees	Sub-sample size
Gender (ref = Female)	Male	**93.1%	2,229	93.3%	30
	Female	94.9%	3,913	97.3%	75
	Non-binary	90.0%	10	100.0%	2
	Other	100.0%	6	100.0%	1
Ethnicity (ref = White)	White	95.1%	4,368	94.6%	56
	Asian	*92.9%	550	100.0%	16
	Black	92.7%	301	100.0%	24
	Mixed	94.2%	257	91.7%	12
	Other	**90.5%	210	100.0%	4
Sexual orientation (ref = Heterosexual)	Heterosexual	94.5%	4,958	96.5%	85
	Gay man	93.8%	128	100.0%	3
	Gay woman	97.9%	96	100.0%	6
	Bisexual	94.0%	266	100.0%	1
	Other	**85.8%	120	100.0%	5
Disability (ref = No disability declared)	No disability declared	94.3%	5,404	97.0%	93
	Disability declared	93.0%	717	92.9%	14
IMD Background (ref = Q5)	Q1 (most deprived)	92.5%	548	85.7%	14
	Q2	93.8%	1,010	100.0%	23
	Q3	95.6%	1,175	94.1%	17
	Q4	95.6%	1,286	95.2%	21
	Q5 (least deprived)	94.6%	1,333	100.0%	15

In the wider student population sample, there are statistically significant differences in rates of graduate employment or further study for sub-groups of gender, ethnicity and sexual orientation. In the mentee samples, however, none of the differences are statistically significant.

While this appears to suggest that there were no differences in graduate employment and further study among mentees in different Widening Participation groups, and mentoring is associated with smaller differences in these outcome measures for participants, this finding may reflect the sample size, rather than a true absence of differences.

Highly skilled employment

Matched sample

The matched sample consists of 188 unique student and course identifiers, half of which participated in mentoring and the other half which did not.

The demographic profile and balance checks for the matched sample can be found in Annex D.

Descriptive statistics

Table 4-17 details the frequency of being in highly skilled employment.[27]

Table 4-17: Frequency of being in highly skilled employment

	Unmatched sample		Matched sample	
	Frequency	**Percent**	**Frequency**	**Percent**
In highly skilled employment	6,273	74.7	138	73.4
Not in highly skilled employment	2,123	25.3	50	26.6

Source: SQW analysis

In the unmatched sample, 74.7% of the 8,396 observations for which there are Graduate Outcomes data are in highly skilled employment. This figure is comparable for the matched sample, where the rate of being in highly skilled employment is 73.4%. It is important to note that students who reported being in further study are considered as not being in highly skilled employment.

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[27] The unmatched sample contains 47,513 observations (about 85% of total observations) which are excluded from the analysis, due to students not responding to the Graduate Outcomes Survey post-graduation.

Table 4-18 contains a cross tabulation of highly skilled employment and treatment.

Table 4-18: Frequency of being in highly skilled employment by treatment and control conditions

	Unmatched sample		Matched sample	
	Non-mentees	Mentees	Non-mentees	Mentees
In work or further study	74.8%	67.2%	77.7%	69.2%

<div align="right">Source: SQW analysis</div>

In the unmatched sample, 67.2% of mentees who answered the Graduate Outcomes Survey and there were data on uptake of employment or further study on were in highly skilled employment. For non-mentees, this figure was 74.8%.

In the matched sample, the rate of mentees in highly skilled employment is comparable, at 69.2%, versus 77.7% for non-mentees.

How do rates of highly skilled graduate level employment among mentees compare to those who did not participate?

Table 4-19 summarises the results of the regressions for highly skilled employment.

Table 4-19: Regression results for highly skilled employment

Treatment coefficient	Unmatched sample n=5,017	Matched sample n=185[28]
Participated in mentoring during course (std. err.)	-0.187 (0.249) OR: 0.829	-0.667 (0.410) OR: 0.513

<div align="right">Source: SQW analysis
Significance levels: +0.10, 0.05*, 0.01**</div>

The analysis reveals that participation in the mentoring programme is not statistically significantly associated with being in highly skilled employment.

However, as indicated by the power analysis, this analysis is less likely to identify a small treatment effect.

Summary of key findings

What is the impact of mentoring on rates of continuation? The analysis shows that participating in mentoring is associated with an increased likelihood of continuation. However, this effect is statistically significant in students' first course year in the unmatched sample but not when using a matched comparison group or when using

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[28] Note: 3 observations were omitted, where categorical variable categories (gender=Non-binary and sex_orient=Bisexual) predict success or failure perfectly.

data for students' second and third course years. Especially in the light of the positive results on progression discussed below, we suspect that these conflicting results are driven by data issues with the continuation variable.

What is the impact of mentoring on rates of progression between years of study? Mentoring is statistically significantly associated with an increased likelihood of progression in the year that a student undertook mentoring. This effect persists across matched and unmatched samples in the first and second course years. The results are opposite for post-treatment, i.e., in the years after a student undertook mentoring, although the effect is statistically significant at a lower significance level. In the matched sample, second year students who have undertaken mentoring in previous academic years are less likely to progress into the next academic year than those in the wider population. A possible explanation for this is that mentoring helps in the short term, but students struggle when they are no longer undertaking it.

What is the impact of mentoring on attainment? The analysis reveals that participation in the mentoring programme is not statistically significantly associated with achieving a Good Degree, i.e. a 1st or 2:1 for undergraduates. It was not possible to assess attainment for postgraduate students as with the University's definition of a Good Degree (Distinction, Merit or Pass) for postgraduates, all of the mentees achieved a good degree.

What is the impact of mentoring on graduate outcomes? Participating in mentoring was not found to be statistically significantly associated with students reporting being in work/further study or highly skilled employment upon completing the Graduate Outcomes Survey. However, as indicated by the power analysis, these analyses are less likely to identify a small treatment effect.

5.   Process evaluation analysis and results

5.1 Participant profiles

Four members of the programme delivery team, 19 mentees and six mentors were interviewed for the process evaluation. The analysis also incorporated nine responses to a mentee survey. Respondents were either on the Momentum or the Identity Match programme and were a range of ages, ethnicities, and sexual orientations. More women than men responded to the survey. The specific characteristics of respondents are not shown to protect their anonymity. Furthermore, due to the small sample sizes the analysis is presented in aggregate as opposed to split by different groups.

5.2 Findings

During the interviews, mentees cited a variety of reasons why they engaged with the mentoring programme. These reasons included to access career guidance and advice, get help with specific skills (such as organisation, planning, and goal setting), and to improve self-confidence. Loneliness or isolation was a motivator for several mentees, exclusively for international students, who came to the UK on their own or who did not have friends or family at the University. Some international students also engaged with the programme to obtain advice on studying in the UK, getting part-time work, and adapting to a new culture. For two mature students, their motivation to engage with the programme was to access support as they returned to academic study after having children or working. For another mature student, getting help to stay at university was their top priority:

> *I was down and out. I was ready to quit university and I had failed a couple of years previously, once in my first year, once in my second year.*(Mentee interviewee)

Mentor interviewees provided some insight into what motivated them to engage with the programme. Some mentors had mentored on other mentoring programmes and found the experience rewarding. Others had benefited from having a mentor themselves and wanted to give that support to others. Two mentors felt compelled to be involved in the Identify Match programme for reasons relating to their identities. For example one said:

> *Part of it comes down to the racial aspect and also the cultural aspect. If I feel like […] I'm in a position to provide that support.* (Mentor interviewee)

During interviews, mentees highlighted a range of different goals set with their mentors. Among the goals cited by individual mentees were:

- Improving self-confidence

- Developing specific skills, including time management (the most popular), organisation, prioritisation, group work, networking, communication (both written and verbal) and self-discipline (in relation to academic study – i.e., reducing procrastination)

- Improving academic success such as passing their dissertation or producing a draft PhD proposal to get accepted onto the programme at the University of Brighton

- Balancing academic study with co-curricular activities and/or part-time work

- Adjusting to life in the UK, a goal shared by international students.

Responses to the mentee survey echoed these findings, as illustrated in Figure 5-1.

Figure 5-1: What goals did you agree to work towards with your mentor? Please select all that apply or select "other" to provide additional information (n=9)
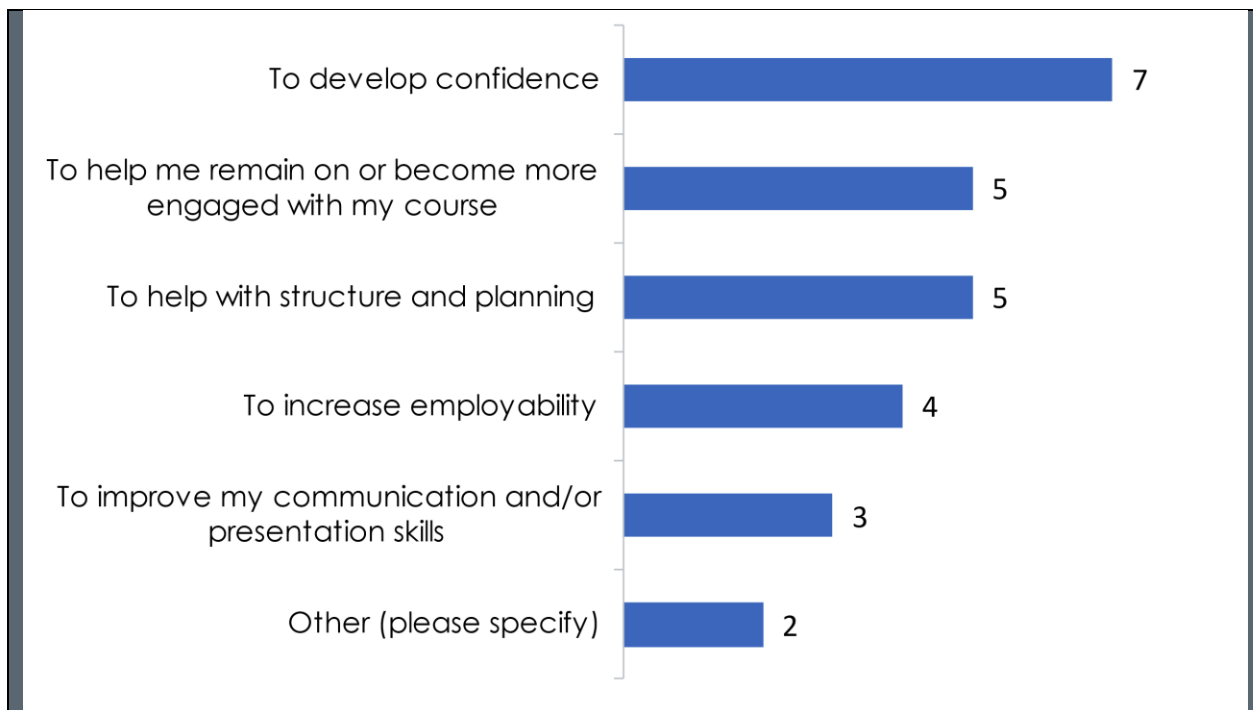
Source: SQW analysis of University of Brighton data

Mentees were invited to participate in the evaluation if they had completed at least four sessions with their mentor; this meant that they might not have finished their mentoring at the time of the interviews. It was therefore unsurprising that some mentees said that they were still working towards their goals. For example, one mentee whose goals were to improve their planning and organisation skills said that they were not sure how much

they had progressed in that area and were talking to their mentor about developing strategies to target improvement in those skills.

Other mentees said that they had achieved their goals. For example one mentee had secured a graduate job, another had developed their time management skills, and one international student said they felt more adjusted to life in the UK:

> *I feel that I'm adjust[ed] to the life here more than when I was new […] that was my main goal of getting an identity match mentor.* (Mentee interviewee)

In the mentee survey, respondents were asked to rate their agreement or disagreement against a number of statements. When asked about the extent to which they agreed that they achieved their goals (as per Figure 5-1), respondents mostly agreed (Figure 5-2). All respondents who had set goals to develop confidence, receive help to remain or become more engaged in their course, and receive help with structure and planning either agreed or strongly agreed that these goals had been achieved.

Figure 5-2: To what extent do you agree you achieved your goals? (n=9)
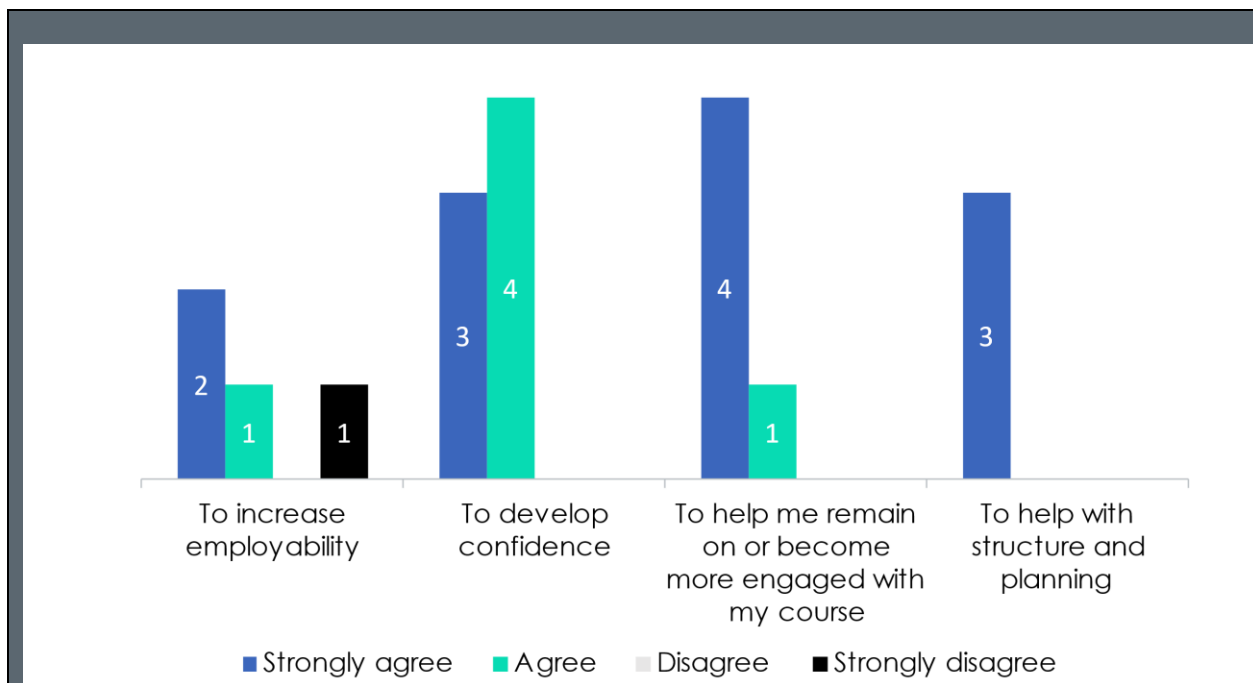
Source: SQW analysis of University of Brighton data

In the feedback forms two mentees reflected on the relevance of, and their satisfaction with, the content of their mentoring sessions. One mentee said that they felt the content of their mentoring sessions was "really relevant" as it helped them to adapt and adjust to a new environment faster than if they did not have any help. Another stated:

"Every single session was helpful and had a positive impact on my time at university". (Mentee feedback)

In the survey, 8 of 9 mentees said they were 'very satisfied' with the content of their mentoring sessions; the remaining respondent was 'satisfied'.

The structure of the mentoring sessions varied between mentorships. In some cases, the structure was rigid and followed a set agenda, in others the sessions were more fluid. In general, mentees were satisfied with the structure of their mentoring sessions. This was demonstrated by the survey results (8 of 9 respondents said they were 'very satisfied' with the structure of the mentoring sessions) and mentee feedback forms: one mentee explained that their mentor provided agendas for each meeting which were adhered to and covered comprehensively, whilst another said that not having a prescribed structure worked for them as they were able to address different problems within one session.

Mentees were very positive about their mentors and none (who participated in the evaluation) were critical. In the interviews, several mentees attributed the quality of the relationships to the matching process and said their mentor was a "perfect" or "tailor made" fit. Furthermore, all respondents to the mentee survey reported being satisfied with the mentor they were assigned, with 8 of 9 respondents saying they were "very satisfied".

Although we did not have a specific research question focused on mentor satisfaction, it was apparent from the interviews that mentors were also very satisfied with the mentoring programme and had benefited from being involved. For example, one mentor remarked:

> *I learned so much from what they [the mentees] have to say, but also I learned about myself as well - when I sit and listen, I actually can formulate questions better.* (Mentor interviewee)

The interviews and feedback provide insights about the ingredients leading to high-quality mentee/mentor relationships. A mentee/mentor relationship seems to work well when:

- There is an equal power balance – a theme raised by several mentees was that the mentor was someone who was external to the University; they explained that this separation was essential for establishing a more equal power dynamic and creating a safe space for the mentee to talk openly and share concerns.

- Meetings are arranged quickly – one mentee said that arranging meetings with their mentor was easier than with their tutor at the University who had limited availability for appointments.

- Mentors provide accountability – mentees said this helped them to stay focused and on track to meet their goals.

- Mentors provide a balanced perspective - mentees highlighted specific qualities that they valued in their mentors, such as mentors' ability to 'coach' mentees as opposed to telling mentees what to do. Mentees also said they valued mentors' commitment (to them and the mentoring process) and mentors being good listeners, non-judgemental, supportive, encouraging, and recognising and celebrating progress, no matter how small.

- The mentee and mentors have a shared perspective or experience – a shared perspective or experience (often based on shared background or characteristics) helped to build high-quality mentor/mentee relationships, giving mentors an innate understanding of their mentees' situations. The importance of a shared perspective was particularly important for those on the Identity Match programme, who were matched based on ethnicity, background heritage or a shared experience of being racialised. This helped to generate trust, which was essential for building a high-quality relationship.

- The mentor works in a different field to the mentees' immediate interests - One mentee who was exploring options for further study or a career in psychology said that having a mentor who did not work in the same field was helpful as otherwise they may have treated them like as a teacher rather than an equal.

- There is open communication between the mentee and mentor - One mentee said that they were able to personalise the content of their mentoring sessions by having an open discussion with their mentor about their needs.

- Another mentor explained that being honest about their own strengths and weaknesses helped to align thought processes: the mentee knew what questions they could ask and the ways in which the mentor could support them to meet their goals.

Interviewees also highlighted a small number of constraints on mentee/mentor relationships. For example, the delivery team explained that the mentoring programmes are designed to support mentees with personal or professional development goals. However on occasions the boundaries have become blurred where mentees have sought support that a mentor could not provide, for example relating to more complex mental health needs. The programme delivery team explained that they have clear processes in place if this happens. A lack of time was identified as another constraint. Furthermore, two mentees had opposing views on the benefits of having mentors in

areas of interest different to their own: whilst one mentee said this had helped to broaden their awareness of alternative pathways, the other said it had limited their mentor's ability to provide targeted advice.

Interviewees' responses indicated that the frequency of mentorship meetings varies considerably between mentor/mentee pairings. Some met their mentors once a week; others once a month. This was also reflected in the responses to the mentee survey (see Figure 5-3). Some mentees said that they met more regularly at the beginning of the mentorship, and that the frequency of meetings tapered off over time. Others said that they had informal communication – via WhatsApp or email – with their mentor in between sessions. Two mentees felt that meeting fortnightly was optimal as it gave them time to try out the tips and techniques they discussed during their session, one stated:

> *Once a fortnight gives me enough time to try out the exercises and it is also manageable time wise.* (Mentee feedback)

Figure 5-3: How regularly did you meet with your mentor? (n=9)
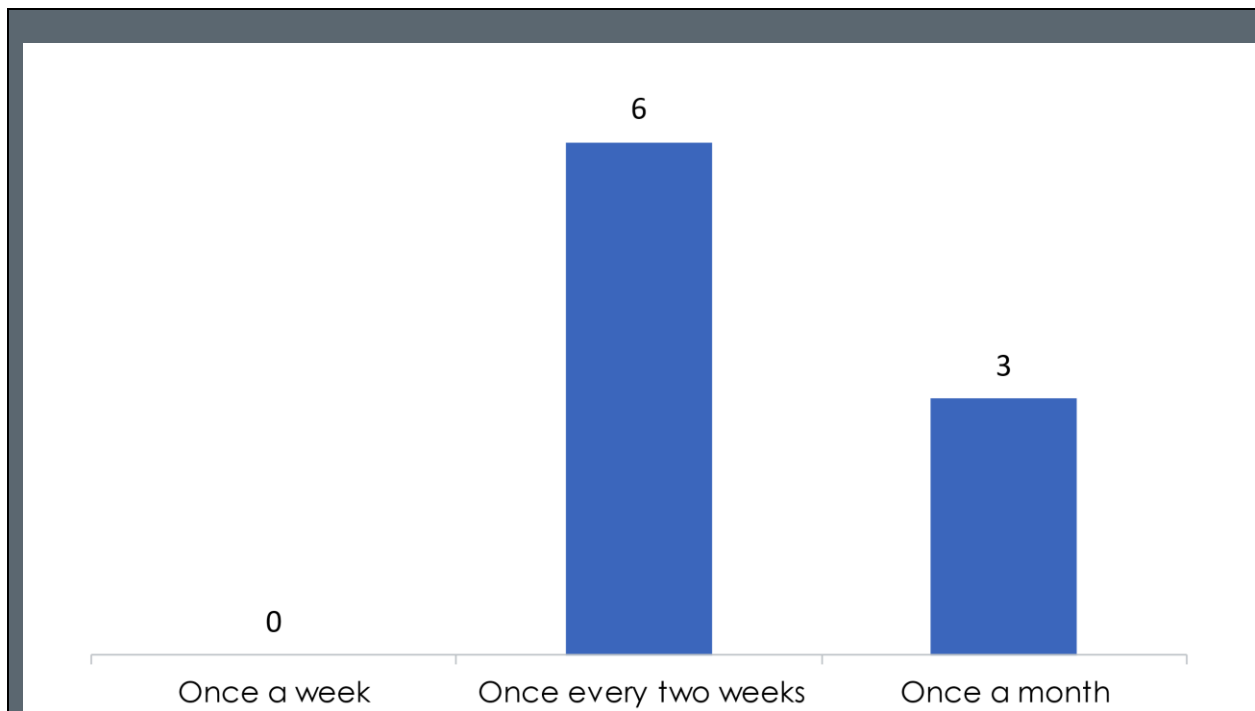
Source: SQW analysis of University of Brighton data

The delivery team explained that there are three distinct elements to their marketing strategy:

- Promoting the programme early on – information about mentoring is included in information packs that prospective students receive from the University

- Using a variety of marketing channel - the delivery team promote the programme in lectures, hold information stalls at student fairs and halls of residence, connect with course leaders and Student Ambassadors, host information on the University's website, and send information to students via emails from Careers Connect.

- Gaining support from senior leadership at the University.

Despite the efforts of the programme delivery team however, many students at the University are unaware of the programme, which in turn reduces the effectiveness of the intervention. One programme delivery team interviewee said:

> *Every student I spoke to [I asked]: "Have you heard of our mentoring service?" "No." "What year are you in?" "Year three. Didn't even know existed." And so that's a big issue. Definitely a big issue that we have is that people don't know that it exists.* (Programme delivery team interviewee)

Furthermore, even when students have heard about the programme, this has not always translated into applications: one member of the programme delivery team said they had presented at a lecture with 30 students in attendance and no one applied. To try and increase awareness of the programme the team are currently trialling different marketing strategies. They recently filmed mentees and mentors talking about their experiences of the programme for a promotional video which will be uploaded to the website.

Mentees and mentors were positive about communication from the programme team. All nine respondents to the mentee survey felt that the frequency of communication from the programme delivery team was "just right". Mentors said they appreciated the clarity and tone communication from the programme delivery team (which emphasised that mentors' views were an important consideration in the matching process) and the team's responsiveness:

> *The whole thing has been set up in such a way that you just feel completely confident and safe as a mentor, in that I feel if I was struggling with anything I wouldn't hesitate to contact them even if I thought it was something really silly that I was struggling with. I would still contact because I know they would respond positively to me.* (Mentor interviewee)

With regards to what could be improved, one mentee (a Master's student) explained that communication from the programme delivery team is more aligned to undergraduates' timelines. The programme delivery team additionally said that they

spend a lot of time chasing people for feedback. Linked to this point, one mentee said that some more guidance on what to include in their monthly feedback would be helpful.

Summary of key findings

Why do mentees engage with the intervention? Mentees were motivated to engage in mentoring for a range of reasons, including a desire to access career guidance and advice, develop existing or new skills, and sometimes to overcome loneliness. The most commonly cited goal by mentees in surveys was improving self-confidence.

How effective do mentees perceive the intervention to be? Mentees mostly felt they had achieved their goals and were generally satisfied with the structure and content of their mentoring sessions. Feedback on mentors was positive, suggesting that the matching process was working well. Mentees liked that the mentor was someone who was external to the University and valued the accountability that a mentor provided. A shared experience or perspective – often on the basis of shared background or characteristics – helped to build high-quality mentor/mentee relationships, giving mentors an innate understanding of their mentees' situations. This was particularly prominent for those on the Identity Match programme.

How do mentees engage with the intervention? There are three distinct elements to the delivery team's marketing strategy: promoting the programme early on, using a variety of marketing channels, and gaining the support of the senior leadership at the University. Despite the team's efforts however, awareness of the programme amongst the wider student body was said to be low, which limits the intervention's potential to generate impact. The team are currently trialling different marketing strategies to increase awareness of the programme.

6. Discussion

The results from the econometric analysis of impacts show that, overall, the mentoring programme is associated with some positive effects on student progression during their studies.

We found a significant positive association with mentoring across different course years and against both matched and unmatched comparison groups. Here, however, our results indicate that progression outcomes in later years among students mentored in previous years may be worse than for students who were not mentored.

On student continuation we found a positive and significant effect only in the first course year and only the unmatched sample. This suggests that mentoring is positively associated with continuation, however, it is more likely that this is due to 'pre-selection'. i.e., students that are more likely to achieve the outcome are more likely to undertake mentoring, rather than that because mentoring leads to an increased likelihood of continuation.

Furthermore, as an outcome, continuation is ambiguous: for example, for some students, continuation means they failed and are re-taking a particular year. We believe the stronger findings associated with progression are useful because progression is an unambiguously positive outcome for students. However, progression is a less relevant measure for students in their final year of study.

We did not find any statistically significant associations between mentoring and improved academic attainment or graduate outcomes. It is important to note that this does not necessarily mean that mentoring has no effect on these outcomes. It does, however, constitute evidence that relative to the multitude of other factors that influence graduate outcomes, participation in the mentoring scheme is not impactful enough that with the available data we were able to identify an effect.

There are some limitations to the method used for the impact evaluation. Firstly, PSM as a technique has a key limitation in that it is only able to match students based on observable characteristics recorded in the available datasets. Differences in unobservable characteristics, such as motivation, are unaccounted for in the match. Secondly, in terms of defining treatment, this analysis employed a retrospective approach, i.e., it counted anyone who had participated in mentoring at any point in their course as having received treatment. Mentoring programme monitoring data was not made available for earlier academic years, when a student could have undertaken mentoring. Had this data been available, we could have identified more treated individuals and analysed a larger sample. As a result, it is possible that this analysis is underestimating the effects of mentoring on outcome measures. Additionally, this

analysis defines treatment as participating in any of the mentoring programmes; this does not allow for a comparison of outcomes across different mentoring sub-programmes.

Finally, the lack of access to the University of Brighton's Administrative data for the 2017/18 academic year, paired with the non-response to the Graduate Outcomes Survey, reduced the sample sizes, which had particular implications for the analysis of graduate outcomes, where no effect was observed.

The process evaluation highlighted the wide range of reasons mentees engaged with mentoring and identified common goals that mentee set. It found that mentees perceived the intervention to be effective and that they were overwhelmingly positive about their experiences on the programme. The quality of mentee/mentor relationships was cited as key to the effectiveness of the intervention, as was the flexibility and autonomy afforded to mentees and mentors with regards to the structure of the mentoring sessions and where and when they took place.

The main limitation of the process evaluation was sample size, particularly the number of respondents to the mentee survey. The findings from the process evaluation should therefore be interpreted with this consideration in mind.

7. Conclusions

Pre-existing research on the impact of mentoring on student outcomes is mixed. This evaluation builds this evidence base, although its findings about the impact of mentoring are also mixed.

Our regression analysis suggests that participating in mentoring is associated with an increased likelihood of progressing into the next course year for students in both their first and second year of study. Curiously, however, progression for mentees from the first year is worse in their second year than for their peers who did not participate in mentoring in the year before. This evaluation has not explored this issue specifically, but one possible reason for this could be that the students who 'seek mentoring out' need additional support and, while mentoring provides this in the immediate term, it is less effective at giving students what they need to progress in the medium and longer term. Given the University of Brighton's mentoring programmes focus on certain groups of students who may in theory be more likely *not* to progress, this finding may be more reflective of intake than the support per se.

Mentoring was not found to be statistically significantly associated with improved academic attainment or graduate outcomes, although this again may be reflective of the groups seeking out mentoring to begin with.

The process evaluation highlights the range of professional and personal reasons why students take up mentoring, and it is striking that the most commonly cited goal in our small survey sample was improving self-confidence. Where mentees have set goals, they generally feel they have achieved them but in some ways this evaluation indicates the *process* of mentoring is in many ways as (or even more) important than the outcomes. Specifically, the relationships mentees and mentors forge were cited as one of the single most powerful elements of the programme, and this was especially true for the Identity Match programme.

One of the barriers impeding the programme's effectiveness is that fact more students do not know about it, although this is something the University recognises and is seeking actively to address.

7.1 Recommendations for enhancing the delivery of the mentoring programme

We acknowledge that considerable energy has already been spent trying to address challenges relating to the following:

- Marketing – the programme delivery team should continue to explore and trial different marketing strategies to increase awareness of the programme.

- Feedback – emphasising why feedback is important (i.e., it is the main mechanism through which the University know that the match is appropriate and that the mentoring is being effective) and continuing to provide guidance on how mentees can provide feedback, and encouragement to do so, may improve response rates.

7.2 Recommendations for future evaluation

This section explores three recommendations for future evaluations of the benefits of the mentoring programme on supported students.

Scope for randomisation

As the evaluation evidence shows, findings regarding the benefits of the mentoring programme on students are mixed, with a positive impact on progression but little evidence of improved graduate outcomes. A plausible explanation here is that the programme is one of many factors (observed and unobserved) that determine student outcomes and that it is difficult to disentangle the effects of the programme from these other confounding factors (variables that influence both the likelihood to participate in mentoring as well as the outcome variables of interest).

A randomised controlled trial (RCT) is a well-established research method to establish a cause-effect relationship without a requirement to establish the impact of confounding factors as it circumvents issues of selection bias. However the University would need to consider whether there is scope for implementing a full RCT. Given the established nature of the intervention, it is unlikely the University will want to have some students apply for and then not receive mentoring on the basis of a random lottery. However, if there is limited capacity for some or all of the mentoring provision, and an issue of over-subscription, this may offer a natural opportunity to embed a randomised approach, by randomly allocating eligible students to receive the mentoring and monitoring the outcomes of students who do not get a place because there is not a spot for them. In this scenario, it must be noted that students who applied unsuccessfully for mentoring at the University, could find alternative support available elsewhere, and this would need to be taken into account in any subsequent analysis.

However, the programme coordinators could consider the pros and cons of implementing a randomised encouragement design (RED). In a classic RCT, participants are expected to adhere to their treatment as is assigned to them. However, to implement a RED, the programme coordinators randomly assign *encouragement* to eligible students into two groups: the treatment group and the control group. The treatment group will receive active encouragement to take part in the programme, whereas the control group will not. The underlying assumption is that active

encouragement increases take-up of the programme. The encouragement can be a small incentive (e.g., an email or a phone call) that reminds people of their eligibility and which details steps to enrol in the programme.

It is then the impact of receiving encouragement to take up the program that is evaluated (and its indirect effect on program take-up), rather than the direct impact of the program itself. Instrumental variable regression analysis would provide an unbiased estimate of the effect of treatment even in the presence of self-selection bias. RED was used, for example, by Vinokur et al (1995) to study the impact of a job-seeking skills programme on depression.

There are some known limitations to implementing a RED which will need to be considered by the programme coordinators. Importantly, to generate impact estimates, the encouragement must induce significantly higher take-up rates in the treatment group compared to the control group. Heard et al (2017) outline more benefits of and challenges involved in implementing REDs in practice.

Data required to establish a counterfactual

If full randomisation, such as an RCT or RED, is not deemed feasible by the programme coordinators, we believe there are options to explore to improve the efficacy of a quasi-experimental approach to establish a counterfactual. These approaches focus on data availability and quality.

The inherent issue with quasi-experimental approaches is that selection of participation is voluntary and therefore almost inevitably associated with confounding factors that can result in bias estimates in statistical analyses. However, using PSM-based inference models, biases in selection can be overcome by constructing a counterfactual control group that matches the treatment group in observable characteristics. However, "[t]he propensity scores method can only mitigate overt selection bias attributed to those baseline characteristics that have been accurately measured" (West et al, 2008). How well PSM is able to account for biases in selection depends on how well any potential sources of bias have been assessed and are measured in the data used for matching the treatment to control group.

In the context of the mentoring programme at The University of Brighton, although overt biases in selection have been accounted for in the matching used in this study, unobserved confounding factors still have the potential to influence both the likelihood of taking part in the mentoring programme as well as the likelihood of achieving progression or certain graduate outcomes. For example, a student's motivation or their need for mentoring may be such factors. When direct measurement of these factors is not feasible, proxies can be used if they are correlated to the unobserved factors. For example, attendance at lectures and seminars could be used to proxy for motivation and grade point averages excluding final exams could be used to proxy for student

need. Improving the collection and availability of this data would greatly improve the efficacy of a PSM approach to create a quasi-experimental counterfactual.

Related to improving the data availability, our evaluation also highlighted some inconsistencies in how data is recorded and, specifically, data relating to the 'continuation' variable. For example, continuation data could more clearly distinguish between its different cases (progression, switching course, repeating, etc.). Ensuring consistency and avoiding instances of missing data can help increase the sample size for the regression analysis, which helps improve the statistical power of the analysis and increases the likelihood of identifying an effect if an effect is present.

Furthermore, the clarity of analysis could be enhanced by sharpening how continuation is defined and coded in University data. Specifically, it could be defined as continuation on one's course (to effectively mean *not* dropping out), and noting separately whether a student was still at the University on another course.

Examining the long-term impact on progression

A surprising result that came out of our analysis is that there may be an adverse effect of mentoring on progression in the years after the mentoring. A further study may wish to analyse if this effect continues to be evident as further data becomes available and, if it does, explore why the impact on progression changes between the contemporaneous effect and the effect in years after mentoring. This analysis would also be aided by including qualitative components (e.g., interviews), that explore why such an effect may occur in more detail.

Dosage

During this evaluation it became apparent that there is limited, consistent data available on the number of mentoring sessions undertaken by mentees. Assembling this data would enable an examination of any associations between dosage – i.e., the number of mentoring sessions attended – and the strength of outcomes realised.

Annex A: Theory of Change

Figure A-1: Theory of change for the intervention

Situation	Problem: non-continuation rates and inequalities in outcomes (e.g., relating to attainment, progression into employment / further study) for specific groups of students		Aims	To support students across different stages of the student life cycle to stay at the University (continuation) and progress into the following year of study (progression between years of study). This is intended to lead to more students achieving a good degree (attainment), and progressing into employment and/or further study and highly skilled employment (graduate outcomes).
What is the problem that the initiative aims to address?	**Context:** • Students can join the mentoring programme at any stage of the student life cycle and at any point in an academic year. • There has been continuous development in delivery since the programme's inception. • Outcomes are measured year on year.		What goal or objective is the programme trying to achieve? What is your solution to the problem?	

Inputs	Activities	Outputs	Outcomes	Impact
What are the human, financial and organisational resources required to delivery your activity and achieve desired outcomes?	What activities will be put in place to achieve the desired changes? Activities mobilise your inputs to produce outputs.	What are the results/ deliverables of the activity relevant to the achievement of your outcomes?	What are the short and intermediate-term outcomes which must be in place for your long-term goals to be achieved?	What is the long-term goal which relates to the 'problem'? What will result from the removal of the problem?
Staff: • 1 x 0.5 FTE grade 8 co-lead • 1 x 0.2 FTE grade 5 coordinator • 1 x 0.4 FTE grade 5 coordinator • 1 external consultant (co-lead) • Mentors (minimum commitment of one session every 2-4 weeks for 4-6 months) **Financial:** Activity funded by APP budget and Careers and Employability **Other** Website to share information and process applications; marketing materials (inc. presentations for students and information packs sent to organisations and alumni); training materials; Zoom/MS Teams subscriptions for online delivery and training sessions; rooms on campus for training sessions, in-person delivery, celebration events	**5 mentoring programmes with different eligibility requirements:** • Momentum, Identity Match, Graduate mentoring, Men in Primary, LGBTQ+ Uni-Amex • Students have the opportunity to identify and work towards achieving personal professional development goals with mentor. **12 step process for mentees and mentors** • Key milestones: review of applications, online induction training, mentor-mentee matching. • Programme team actions: first check in (4-6 weeks post matching); monthly newsletters (reminding participants to provide updates); four month review (16 weeks post matching); refresher training for existing mentors. • Evaluation activities: pre-mentoring questionnaire (mentees); post mentoring questionnaire (mentees and mentors); focus groups to understand mechanisms (mentees and mentors). **Other:** twice yearly peer mentor sessions. Additional training sessions for LGBTQ+ Uni-Amex mentees). Masterclass sessions for mentors.	**Number of:** • Mentees • Mentors – including repeat mentors • Mentorships – complete and incomplete* • Mentoring sessions delivered • Mentee and mentor training sessions delivered • LGBTQ+ Uni-Amex training sessions delivered • Peer mentor sessions delivered • Masterclass sessions delivered • Resources produced (marketing, training, etc.) **Satisfaction scores** • Percentage of mentees who would recommend the mentoring programme to their peers. • Percentage of mentees who feel the sessions are beneficial. • Percentage of mentors who would recommend the mentoring programme to their peers. *Mentorship is considered incomplete if it ends before four months.*	**For students:** • Increased confidence / self-efficacy in skills required to be successful at University • Increased confidence / self-efficacy in skills required to be successful beyond University. **For the university** • Increased rates of continuation, progression and attainment (overall and for WP groups) • Progress towards University of Brighton Graduate Attributes	Increased rates of progression into employment and further study Reduced inequalities between specific groups (relating to continuation, progression, attainment and graduate outcomes)

Rationale and Assumptions	Rationale: mentoring is a more intensive and focused approach compared to other student support activities (e.g., tutorials, workshops etc), therefore it is expected to have a more substantial effect on student outcomes. There is value in matching student to mentors who shares the same* background / experience.	Assumptions: Mentoring will add value to the student experience. There is value in matching student to mentors who shares the same background / experience. The training for mentors is sufficient. The duration of mentoring is the right amount of time to realise outcomes. Mentoring relationships are sustained.
What is the rationale and what are the assumptions behind the initiative? Why do you expect it will have the desired impact?	*applicable for the Identity Match, LGBTQ+ Uni-Amex and Men in Primary mentoring programmes*	

Table B-1: Impact evaluation research question mapping

	Academic Health data set	Mentoring Programme monitoring data	Graduate Outcomes Survey
RQ1: How do rates of continuation for those who participated in mentoring compare with those who did not participate?	■	■	
RQ2: To what extent do rates of continuation vary between different mentee groups involved in mentoring?	■	■	
RQ3: How do rates of progression between years of study for those who participated in mentoring compare with those who did not participate?	■	■	
RQ4: To what extent do rates of progression between years of study vary between different mentee groups involved in mentoring?	■	■	
RQ5: How does attainment for those who participated in programme compare to those who did not participate?	■	■	
RQ6: Do mentees who participate in the programme graduate with a good degree?	■	■	
RQ7: Do rates of attainment differ by participating mentee groups?	■	■	
RQ8: How do rates of graduate level employment and further study among mentees compare to those who did not participate?	■	■	■
RQ9: Do rates of graduate employment and further study differ by participating mentee groups?	■	■	■
RQ10: How do rates of highly skilled graduate level employment among mentees compare to those who did not participate?	■	■	■

Table B-2: Process evaluation research question mapping

	Programme delivery team interviews	Mentee interviews	Written feedback from mentees	Mentor interviews	Mentee survey
RQ1: What motivates mentees to engage with the programme?		■			
RQ2: What goals do mentees set?		■			■
RQ3: How relevant do mentees believe the content of sessions is to the goals they have set?			■		
RQ4: To what extent do mentees feel they achieve the goals that they set?		■			■
RQ5: How satisfied are mentees with the content of the mentoring sessions?			■		■
RQ6: How satisfied are mentees with the structure of the mentoring sessions?		■			■
RQ7: How satisfied are mentees with their mentors?		■			■
RQ8: What works well about mentee/mentor relationships? What could be improved?	■	■		■	
RQ9: What factors support and impede high-quality mentor/mentee relationships?		■		■	
RQ10: With what frequency do mentoring sessions occur?		■			■
RQ11: How much contact do the University's mentoring team have with mentors and mentees?	■				
RQ12: How do prospective mentees hear about the programme?		■			
RQ13: How do prospective mentors hear about the programme?				■	
RQ14: What works well about the programme's marketing? What could be improved?	■	■			
RQ15: How satisfied are mentors and mentees with communication from the programme team?				■	
RQ16: What works well about how the programme team communicates? What could be improved?		■		■	■

Table C-1: Qualitative analysis coding framework

Tier 1	Tier 2	Tier 3
Why do mentees engage with the intervention?	RQ1: What motivates mentees to engage with the programme? RQ2: What goals do mentees set?	
How effective do mentees perceive the intervention to be?	RQ3: How relevant do mentees believe the content of sessions is to the goals they have set?	
	RQ4: To what extent do mentees feel they achieve the goals that they set?	
	RQ5: How satisfied are mentees with the content of the mentoring sessions?	
	RQ6: How satisfied are mentees with the structure of the mentoring sessions?	
	RQ7: How satisfied are mentees with their mentors?	
	RQ8: What works well about mentee/mentor relationships? What could be improved?	What works well? What could be improved?
	RQ9: What factors support and impede high-quality mentor/mentee relationships?	Factors that support relationships Factors that impede relationships
How do mentees and mentors engage with the intervention?	RQ10: With what frequency do mentoring sessions occur?	
	RQ11: How much contact do the University's mentoring team have with mentors and mentees?	
	RQ12: How do prospective mentees hear about the programme?	

Tier 1	Tier 2	Tier 3
	RQ13: How do prospective mentors hear about the programme?	
	RQ14: What works well about the programme's marketing? What could be improved?	What works well? What could be improved?
	RQ15: How satisfied are mentors and mentees with communication from the programme team?	
	RQ16: What works well about how the programme team communicates? What could be improved?	What works well? What could be improved?

Annex D: Impact evaluation samples

Unmatched sample

Table D-1: Demographic profile of unmatched sample (n=55,549)

Characteristic	Frequency[29]	Percent[30]
Level of study		
Undergraduate	36,968	74.09%
Postgraduate Taught	11,324	22.70%
Postgraduate Research	976	1.96%
Other	628	1.26%
Gender		
Female	31,178	62.49%
Male	18,352	36.78%
Non-binary	282	0.57%
Other	84	0.17%
Gender ID		
Gender ID is the same as sex assigned at birth	46,683	98.01%
Gender ID is different to sex assigned at birth	950	1.99%
Ethnicity		
White	32,834	73.04%
Asian	5,168	11.50%
Mixed	2,236	4.97%

[29] Frequencies incorporate all non-missing data; demographic data can be missing where a student was included in the Graduate Outcomes Survey dataset, but not in the University's Administrative dataset.

[30] Percentages are calculated based on non-missing data

Black	2,641	5.87%
Other	2,077	4.62%
Sexual orientation		
Heterosexual	37,419	85.41%
Gay man	1,043	2.38%
Gay woman/lesbian	981	2.24%
Bisexual	3,052	6.97%
Other	1,316	3.00%
IMD		
Q5 (least deprived)	9,705	23.28%
Q4	9,649	23.14%
Q3	8,925	21.40%
Q2	8,376	20.09%
Q1 (most deprived)	5,041	12.09%
Mature student status		
Young	23,980	48.07%
Mature	25,905	51.93%
Disability group		
No disability declared	42,328	86.94%
Disability declared	6,358	13.06%
Mode of attendance		
Never part-time	34,617	69.38%
Part-time for at least one academic year	15,279	30.62%
Care leaver bursary eligibility		
No eligibility	49,781	99.77%

Eligibility	115	0.23%
Estranged bursary eligibility		
No eligibility	49,724	99.66%
Eligibility	172	0.34%

Continuation

Table D-2 compares the demographic profile of the unmatched and matched sample. An asterisk beside a sub-characteristic indicates a statistically significant difference (at the 5% level) between the unmatched and matched samples.

Table D-2: Demographic profile of matched vs unmatched sample for continuation

Characteristic	Unmatched sample	Matched sample n=1,102
Level of study		
Undergraduate*	74.09%	79.04%
Postgraduate Taught	22.70%	20.33%
Postgraduate Research*	1.96%	0.64%
Other*	1.26%	0.00%
Gender		
Female*	62.49%	69.24%
Male*	36.78%	30.13%
Non-binary	0.57%	0.27%
Other	0.17%	0.36%
Gender ID		
Gender ID is the same as sex assigned at birth	98.01%	97.28%

Gender ID is different to sex assigned at birth	1.99%	2.72%
Ethnicity		
White*	73.04%	53.36%
Asian*	11.50%	14.43%
Mixed*	4.97%	7.17%
Black*	5.87%	20.24%
Other	4.62%	4.81%
Sexual orientation		
Heterosexual*	85.41%	80.84%
Gay man*	2.38%	3.50%
Gay woman/lesbian*	2.24%	3.79%
Bisexual	6.97%	7.39%
Other*	3.00%	4.47%
IMD		
Q5 (least deprived)*	23.28%	15.78%
Q4*	23.14%	18.64%
Q3	21.40%	22.61%
Q2*	20.09%	25.05%
Q1 (most deprived)*	12.09%	17.92%
Mature student status		
Young	48.07%	45.83%
Mature	51.93%	54.17%
Disability group		
No disability declared*	86.94%	80.67%

Disability declared*	13.06%	19.33%
Care leaver bursary eligibility		
No eligibility*	99.77%	98.28%
Eligibility*	0.23%	1.72%
Estranged bursary eligibility		
No eligibility*	99.66%	98.73%
Eligibility*	0.34%	1.27%

Figure D-1 depicts balance on observable characteristics based on means for each variable, demonstrating that the matched sample is more balanced than the unmatched sample. Additionally, there are no statistically significant differences in any observable characteristics in the matched sample for continuation.

Figure D-1: Balance checks for continuation[31]

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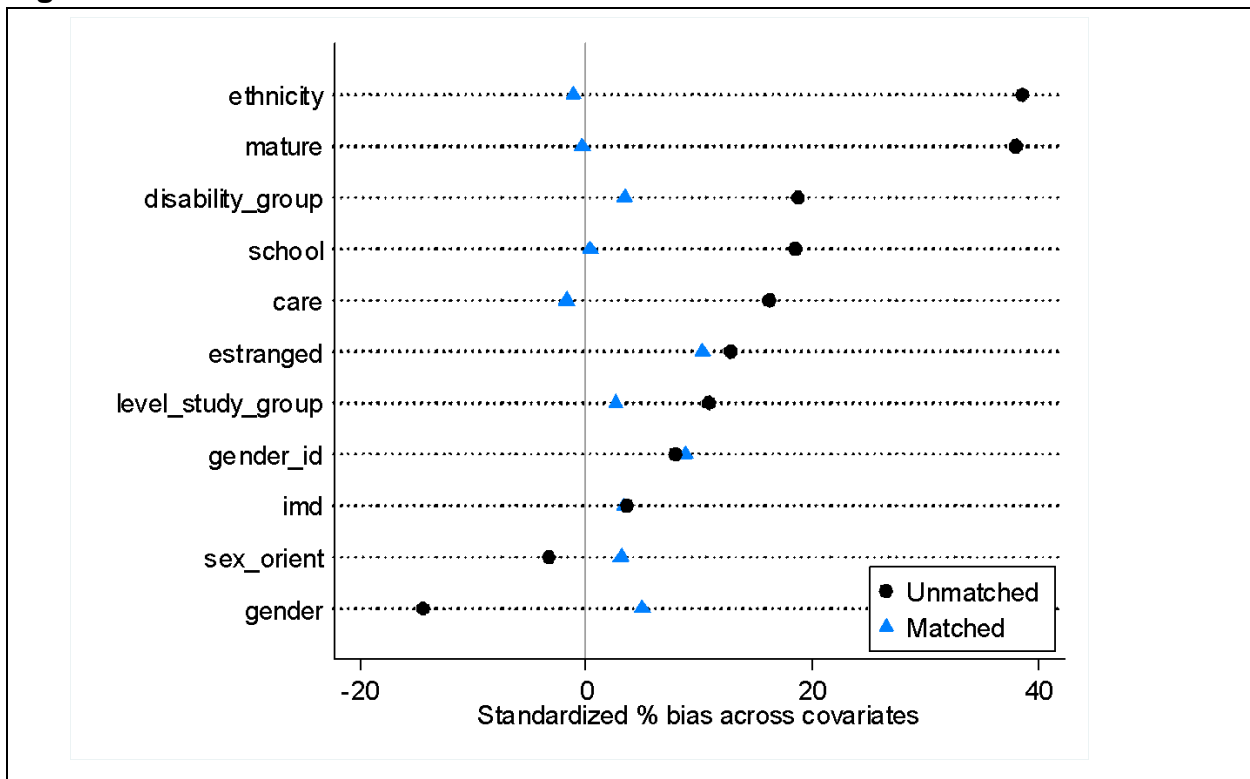
[31] Please note that continuation was recorded for full-time students only.

Figure D-2 compares the probability of treatment (propensity scores) for the unmatched and matched samples. It shows that the distribution of propensity scores is much more similar for treated vs untreated groups in the matched vs. the unmatched sample.

Figure D-2: Probability of treatment, unmatched vs. matched samples for continuation
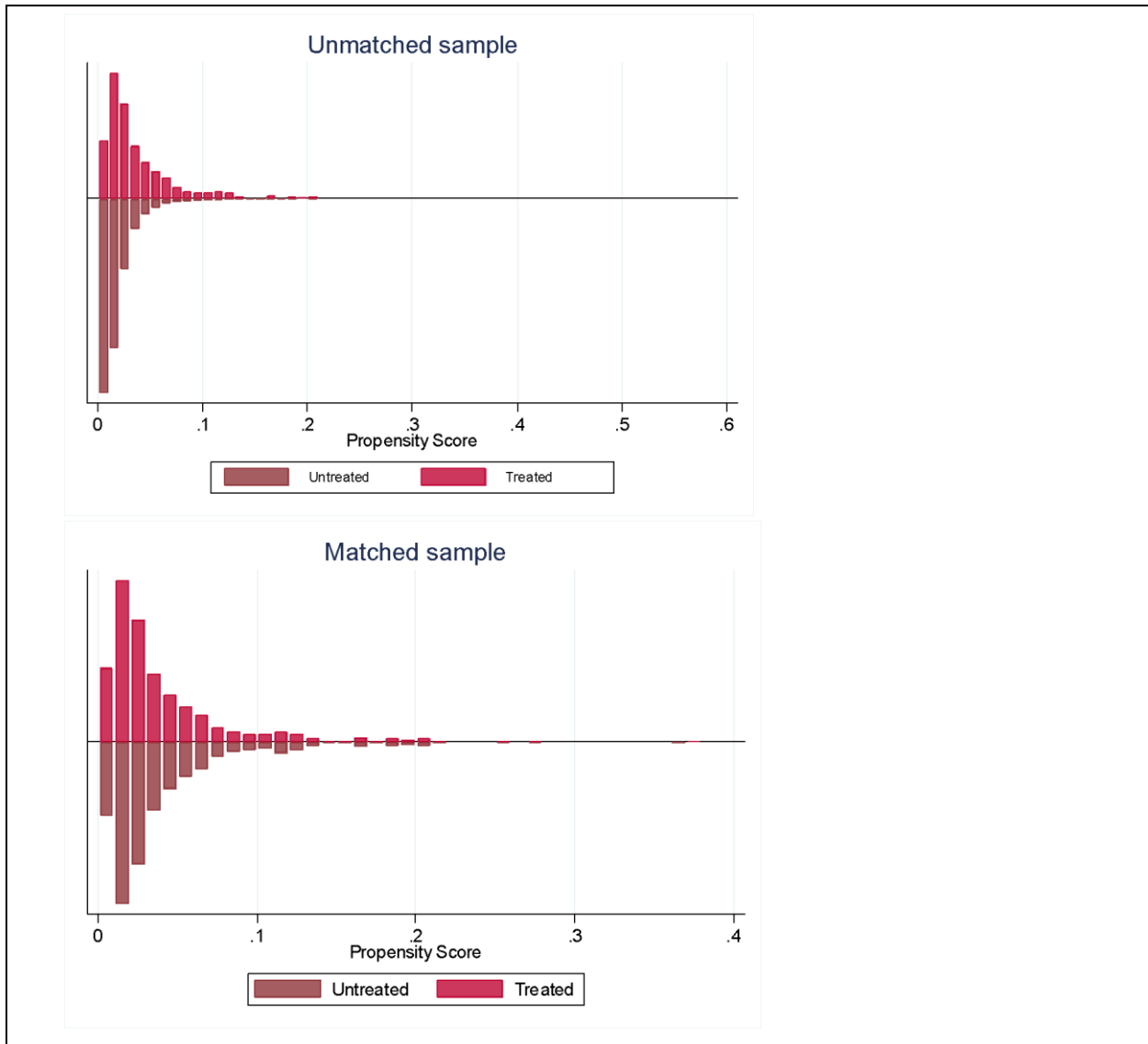
Progression

Table D-3 compares the demographic profile of the unmatched and matched sample. An asterisk beside a sub-characteristic indicates a statistically significant difference (at a 5% significance level) between the unmatched and matched sample.

Table D-3: Demographic profile of matched vs unmatched sample for progression

Characteristic	Unmatched sample	Matched sample n=1,076
Level of study		
Undergraduate	74.09%	76.21%
Postgraduate Taught	22.70%	22.68%
Postgraduate Research	1.96%	1.12%
Other	1.26%	0.00%
Gender		
Female*	62.49%	69.24%
Male*	36.78%	29.74%
Non-binary	0.57%	0.74%
Other	0.17%	0.28%
Gender ID		
Gender ID is the same as sex assigned at birth	98.01%	97.40%
Gender ID is different to sex assigned at birth	1.99%	2.60%
Ethnicity		
White*	73.04%	55.58%
Asian	11.50%	12.45%

Mixed*	4.97%	6.88%
Black*	5.87%	20.72%
Other	4.62%	4.37%
Sexual orientation		
Heterosexual*	85.41%	79.84%
Gay man*	2.38%	3.89%
Gay woman/lesbian	2.24%	2.99%
Bisexual*	6.97%	8.58%
Other*	3.00%	4.69%
IMD		
Q5 (least deprived)*	23.28%	14.97%
Q4*	23.14%	19.23%
Q3	21.40%	23.28%
Q2*	20.09%	24.84%
Q1 (most deprived)*	12.09%	17.67%
Mature student status		
Young*	48.07%	42.19%
Mature*	51.93%	57.81%
Disability group		
No disability declared*	86.94%	77.14%
Disability declared*	13.06%	22.86%
Mode of attendance		
Never part-time*	69.38%	75.28%
Part-time for at least one academic year*	30.62%	24.72%
Care leaver bursary eligibility		

No eligibility*	99.77%	98.79%
Eligibility*	0.23%	1.21%
Estranged bursary eligibility		
No eligibility*	99.66%	98.14%
Eligibility*	0.34%	1.86%

Figure D-3 depicts balance on observable characteristics based on means for each variable, demonstrating that the matched sample is more balanced than the unmatched sample. Although the mean standardised percent of bias increased slightly for sexual orientation, there are no statistically significant differences in any observable characteristics in the matched sample.

Figure D-3: Balance checks for progression
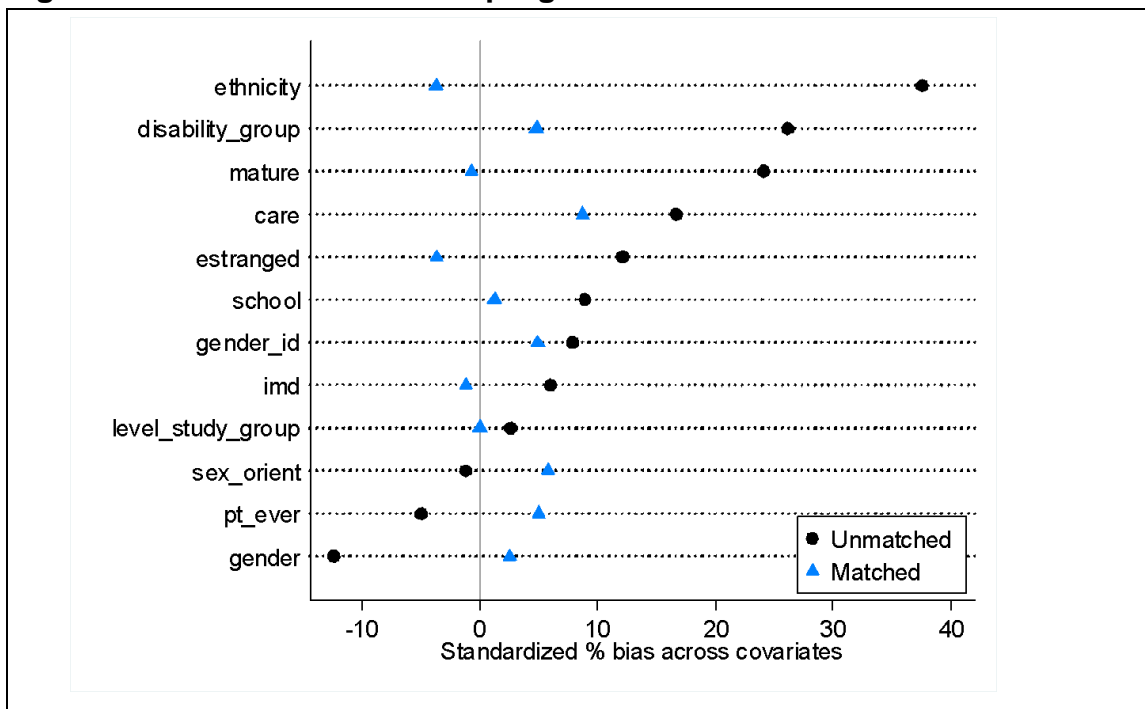
Figure D-4 compares the probability of treatment (propensity scores) for the unmatched and matched samples. It shows that the distribution of propensity scores is much more similar for treated vs untreated groups in the matched vs. the unmatched sample.

Figure D-4: Probability of treatment, unmatched vs. matched samples for progression

Attainment
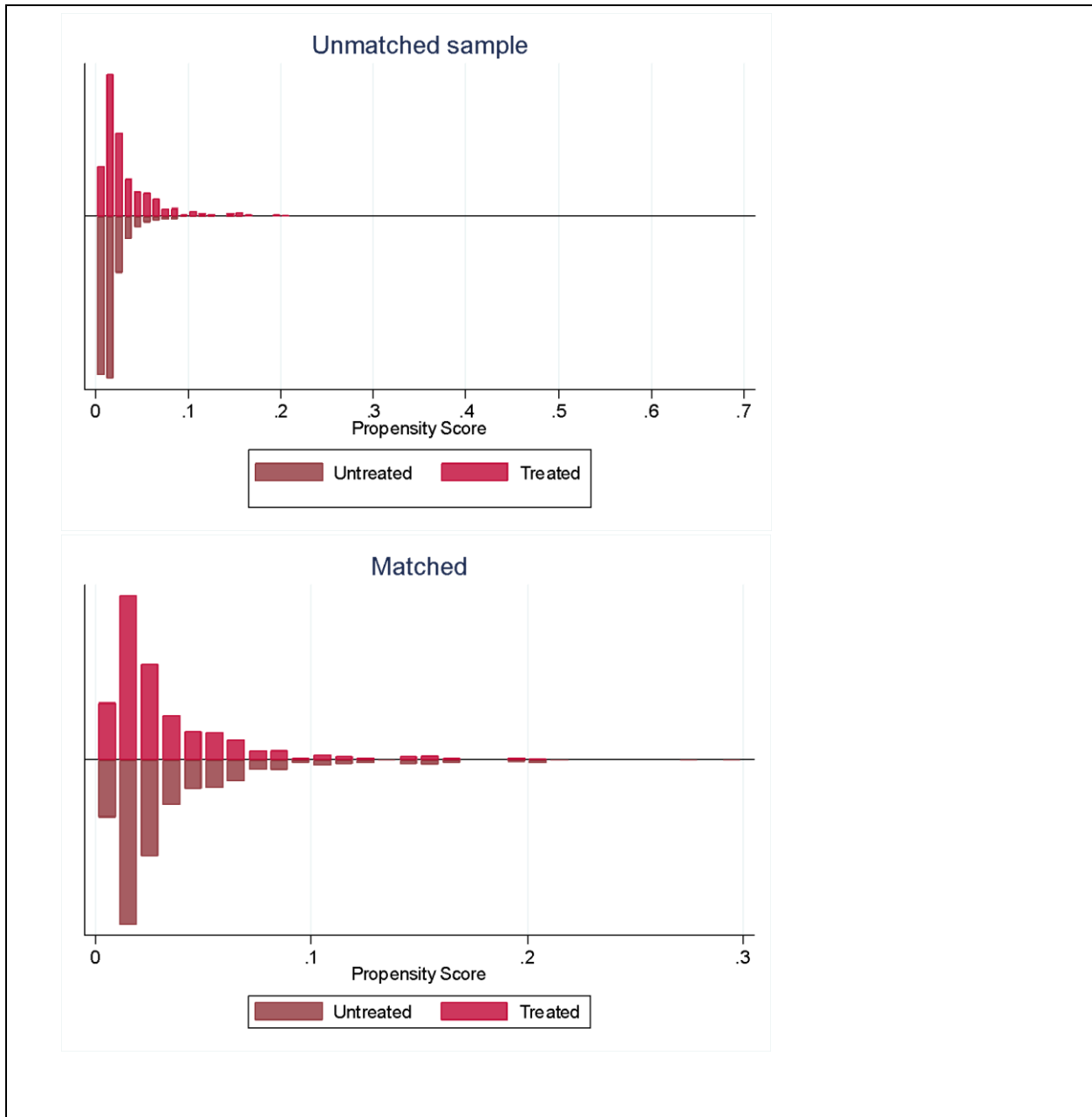
Table D-4 compares the demographic profile of the unmatched and matched sample (which contains undergraduates only). An asterisk beside a characteristic indicates a statistically significant difference (at a 5% level) between the unmatched and matched samples.

Table D-4: Demographic profile of matched vs unmatched sample for attainment

Characteristic	Unmatched sample	Matched sample n=568
Level of study		
Undergraduate*	74.09%	100.00%
Postgraduate Taught*	22.70%	0.00%
Postgraduate Research*	1.96%	0.00%
Other*	1.26%	0.00%
Gender		
Female*	62.49%	70.07%
Male*	36.78%	29.05%
Non-binary	0.57%	0.35%
Other*	0.17%	0.53%
Gender ID		
Gender ID is the same as sex assigned at birth	98.01%	97.71%
Gender ID is different to sex assigned at birth	1.99%	2.29%
Ethnicity		
White*	73.04%	52.82%
Asian	11.50%	13.20%
Mixed*	4.97%	7.04%
Black*	5.87%	22.18%

Other	4.62%	4.75%
Sexual orientation		
Heterosexual	85.41%	85.74%
Gay man	2.38%	2.66%
Gay woman/lesbian	2.24%	2.47%
Bisexual	6.97%	6.08%
Other	3.00%	3.04%
IMD		
Q5 (least deprived)*	23.28%	15.29%
Q4*	23.14%	19.15%
Q3	21.40%	22.65%
Q2*	20.09%	24.86%
Q1 (most deprived)*	12.09%	18.05%
Mature student status		
Young*	48.07%	58.45%
Mature*	51.93%	41.55%
Disability group		
No disability declared*	86.94%	81.69%
Disability declared*	13.06%	18.31%
Mode of attendance		
Never part-time*	69.38%	88.38%
Part-time for at least one academic year*	30.62%	11.62%
Care leaver bursary eligibility		
No eligibility*	99.77%	99.12%
Eligibility*	0.23%	0.88%

Estranged bursary eligibility		
No eligibility	99.66%	99.47%
Eligibility	0.34%	0.53%

Figure D-5 depicts balance on observable characteristics based on means for each variable, demonstrating that the matched sample is more balanced than the unmatched sample. The standardised percent of bias increased slightly for gender ID; there is a statistically significant difference in the estranged bursary eligibility variable in the matched sample, at a 10% significance level.

Figure D-5: Balance checks for attainment
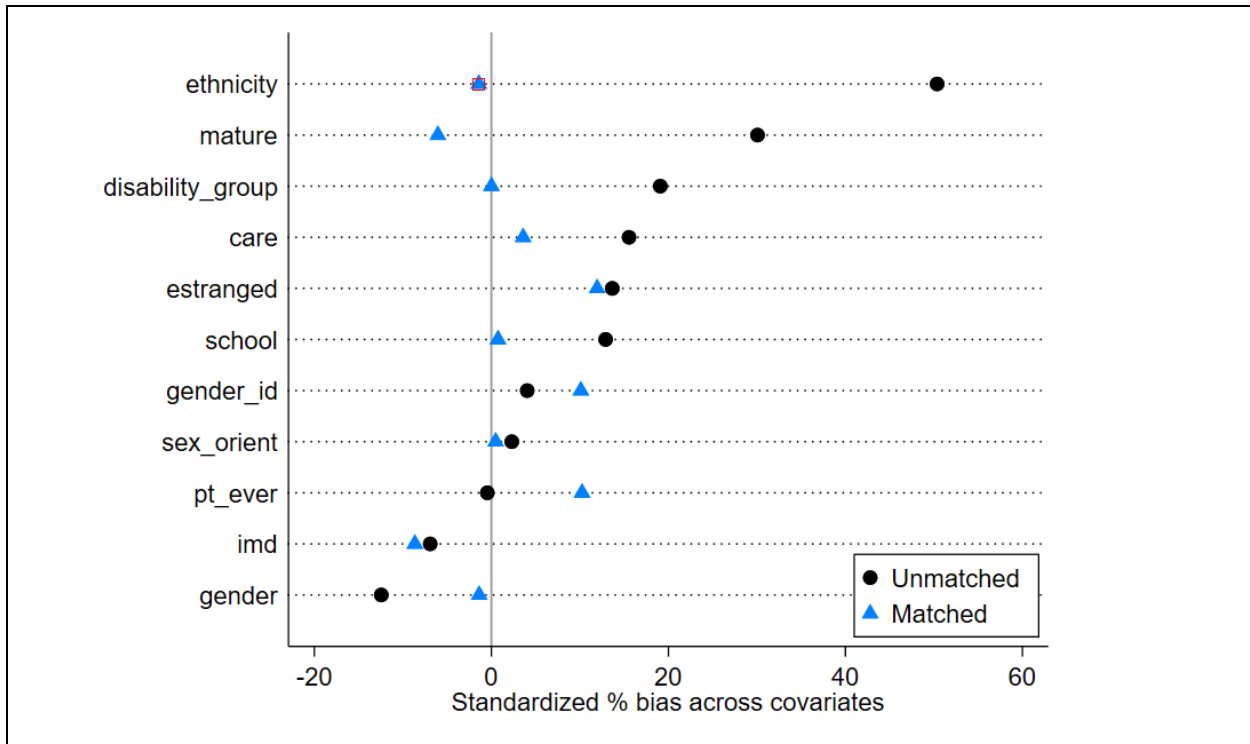
Figure D-6 compares the probability of treatment (propensity scores) for the unmatched and matched samples. It shows that the distribution of propensity scores is much more similar for treated vs untreated groups in the matched vs. the unmatched sample.

Figure D-6: Probability of treatment, unmatched vs. matched samples for attainment
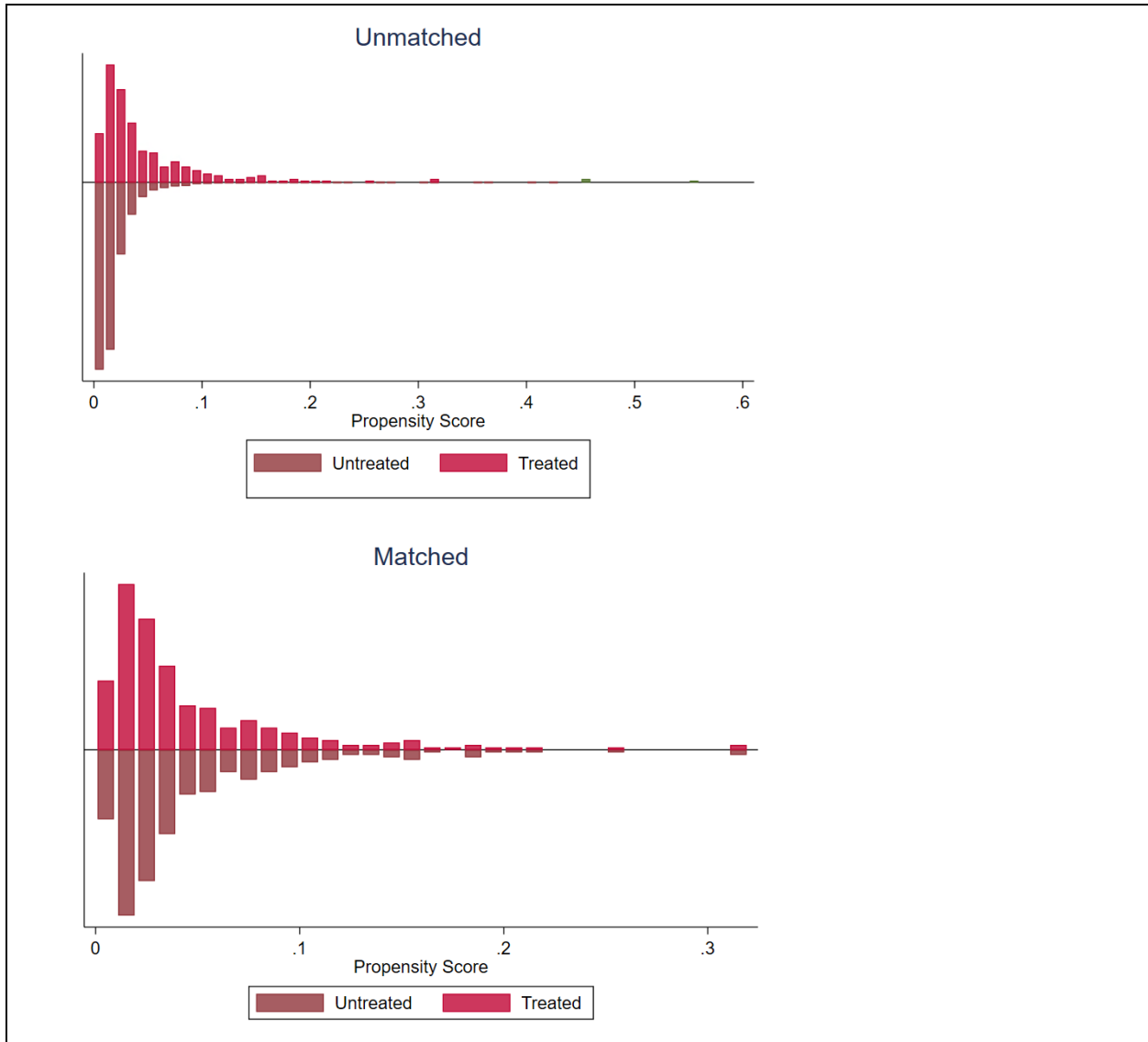
Work or further study

Table D-5 compares the demographic profile of the unmatched and matched sample. An asterisk beside a characteristic indicates a statistically significant difference between at least one of its categories in the unmatched and matched samples.

Table D-5: Demographic profile of matched vs unmatched sample for work/further study

Characteristic	Unmatched sample	Matched sample n=210
Level of study		
Undergraduate	74.09%	70.95%
Postgraduate Taught*	22.70%	29.05%
Postgraduate Research*	1.96%	0.00%
Other	1.26%	0.00%
Gender		
Female*	62.49%	70.48%
Male*	36.78%	27.14%
Non-binary	0.57%	1.43%
Other*	0.17%	0.95%
Gender ID		
Gender ID is the same as sex assigned at birth*	98.01%	94.29%
Gender ID is different to sex assigned at birth*	1.99%	5.71%
Ethnicity*		
White*	73.04%	49.52%
Asian*	11.50%	18.10%
Mixed	4.97%	7.62%
Black*	5.87%	20.95%
Other	4.62%	3.81%
Sexual orientation		

Heterosexual	85.41%	87.13%
Gay man	2.38%	1.49%
Gay woman/lesbian*	2.24%	6.44%
Bisexual*	6.97%	1.49%
Other	3.00%	3.47%
IMD		
Q5 (least deprived)*	23.28%	17.39%
Q4	23.14%	23.91%
Q3	21.40%	17.93%
Q2	20.09%	23.37%
Q1 (most deprived)*	12.09%	17.39%
Mature student status		
Young*	48.07%	41.43%
Mature*	51.93%	58.57%
Disability group		
No disability declared	86.94%	88.57%
Disability declared	13.06%	11.43%
Mode of attendance		
Never part-time*	69.38%	83.33%
Part-time for at least one academic year*	30.62%	16.67%
Care leaver bursary eligibility		
No eligibility	99.77%	99.52%
Eligibility	0.23%	0.48%
Estranged bursary eligibility		
No eligibility	99.66%	99.05%

Eligibility	0.34%	0.95%

Figure D-7 depicts balance on observable characteristics, demonstrating that the matched sample is more balanced than the unmatched sample. Although the standardised bias increased for some variables (level of study group, sexual orientation, attendance, disability group), the only statistically significant bias in the matched sample is for mature student status at the 10% significance level.

Figure D-7: Balance checks for work or further study
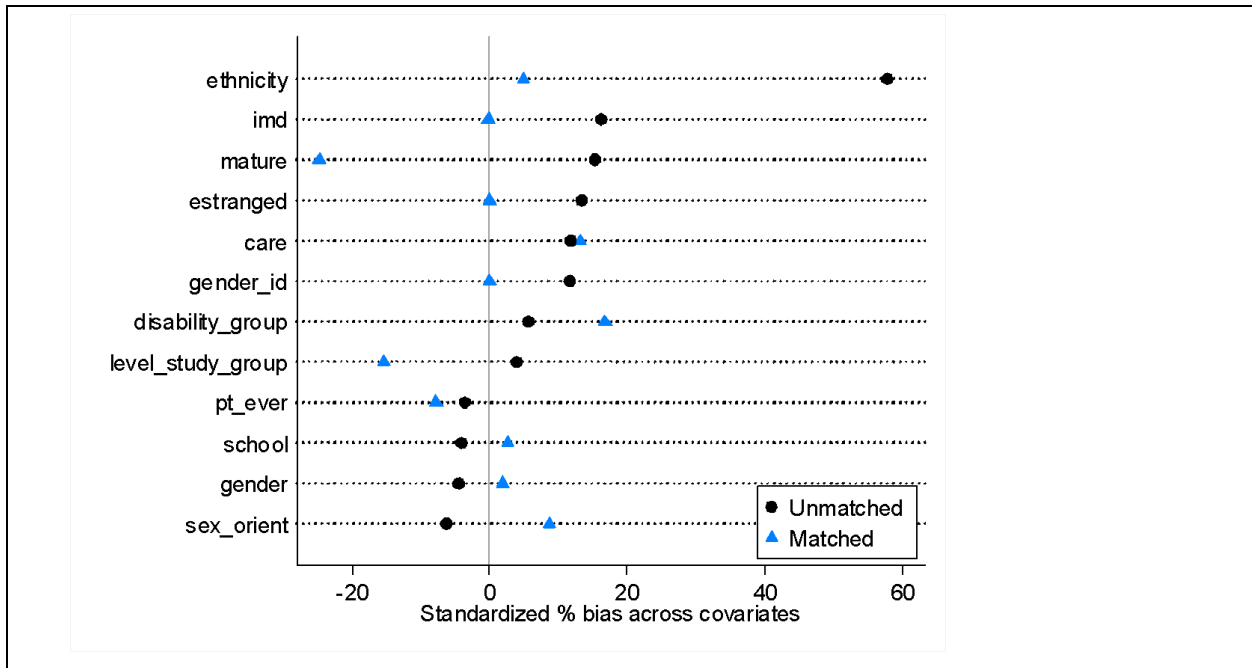
Figure D-8 compares the probability of treatment (propensity scores) for the unmatched and matched samples. It shows that the distribution of propensity scores is much more similar for treated vs untreated groups in the matched vs. the unmatched sample.

Figure D-8: Probability of treatment, unmatched vs. matched samples for work or further study
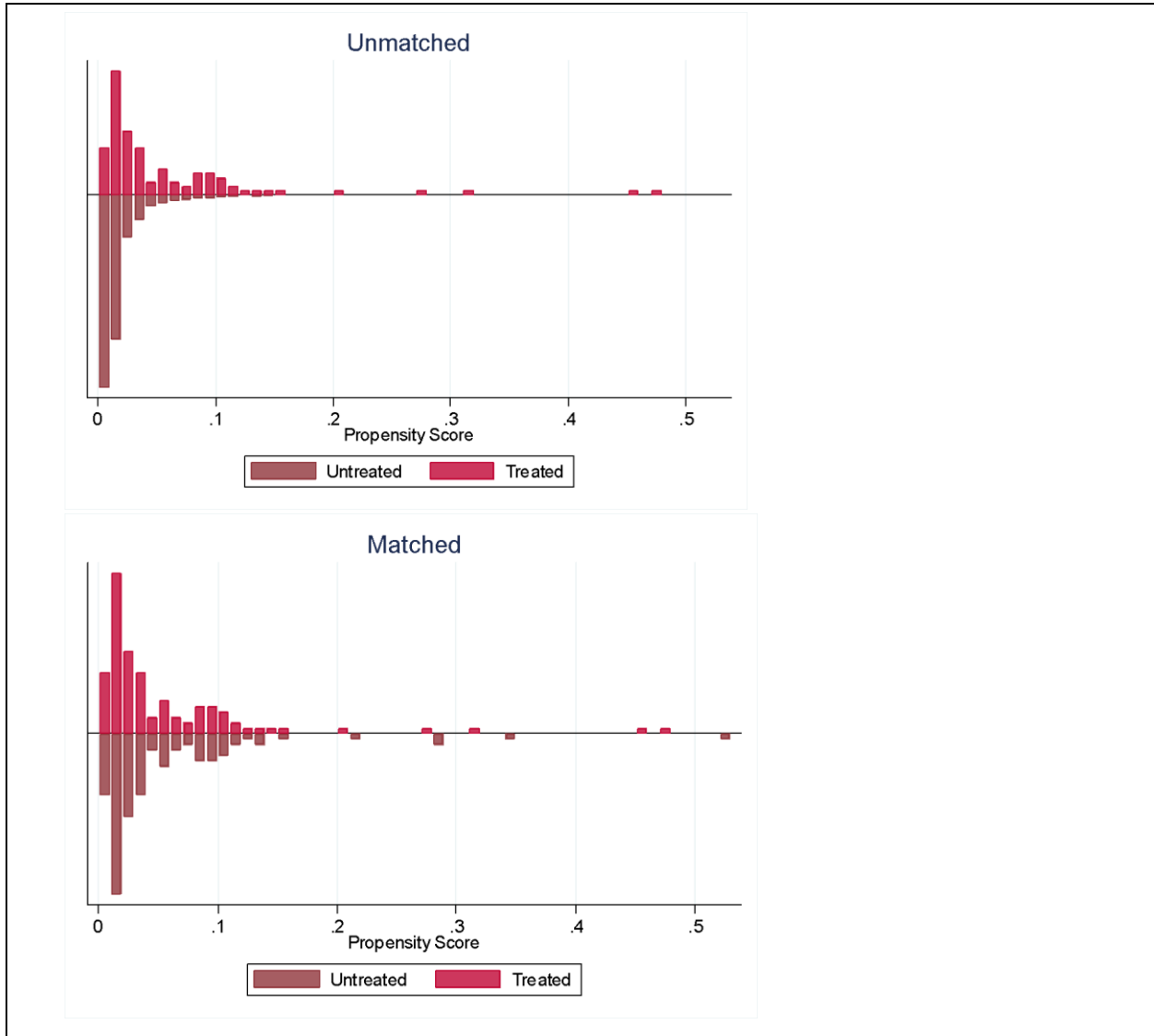
Highly skilled employment

Table D-6 compares the demographic profile of the unmatched and matched sample. An asterisk beside a characteristic indicates a statistically significant difference between at least one of its categories in the unmatched and matched samples.

Table D-6: Demographic profile of matched vs unmatched sample for highly skilled employment
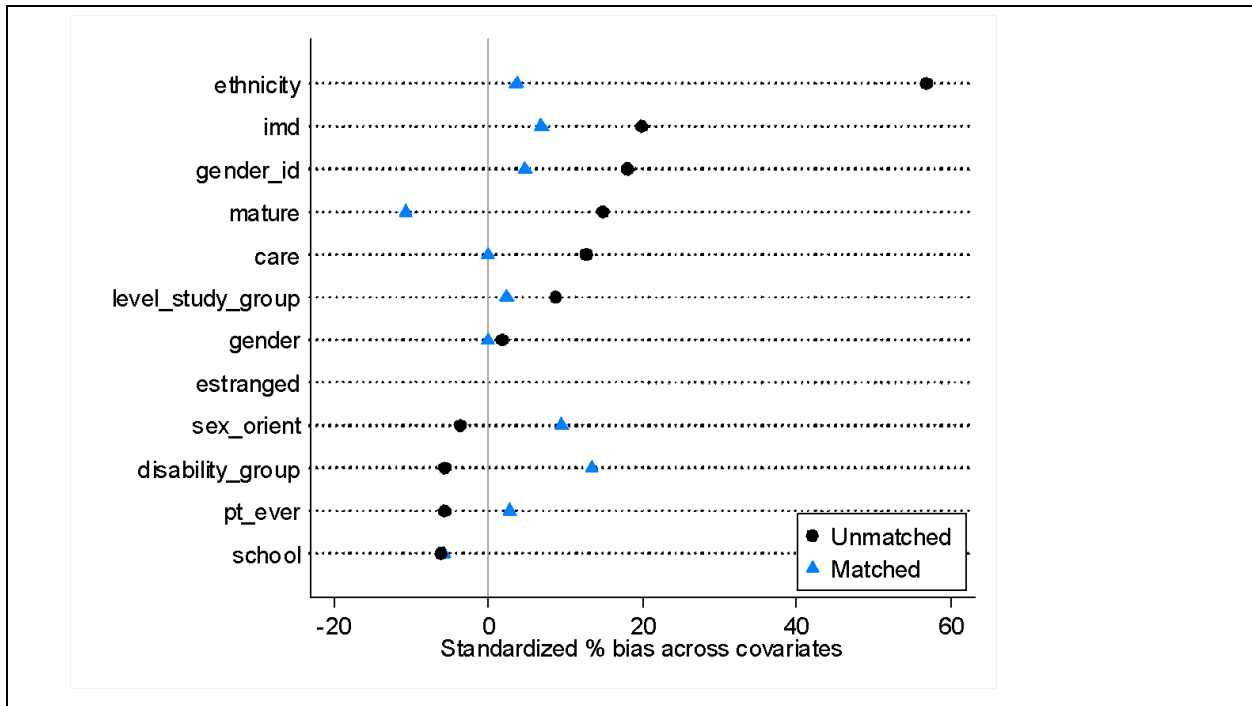
Characteristic	Unmatched sample	Matched sample n=188
Level of study		
Undergraduate	74.09%	70.74%
Postgraduate Taught*	22.70%	29.26%
Postgraduate Research	1.96%	0.00%
Other	1.26%	0.00%
Gender		
Female	62.49%	68.09%
Male	36.78%	30.85%
Non-binary	0.57%	1.06%
Other	0.17%	0.00%
Gender ID		
Gender ID is the same as sex assigned* at birth	98.01%	94.15%
Gender ID is different to sex assigned at birth*	1.99%	5.85%
Ethnicity		
White*	73.04%	50.00%
Asian*	11.50%	17.55%
Mixed*	4.97%	10.11%
Black*	5.87%	18.62%
Other	4.62%	3.72%
Sexual orientation		
Heterosexual	85.41%	87.22%
Gay man	2.38%	3.33%

Gay woman/lesbian*	2.24%	5.00%
Bisexual*	6.97%	0.56%
Other	3.00%	3.89%
IMD		
Q5 (least deprived)*	23.28%	17.07%
Q4	23.14%	22.56%
Q3	21.40%	17.07%
Q2	20.09%	28.66%
Q1 (most deprived)	12.09%	14.63%
Mature student status		
Young	48.07%	43.09%
Mature	51.93%	56.91%
Disability group		
No disability declared	86.94%	91.49%
Disability declared	13.06%	8.51%
Mode of attendance		
Never part-time*	69.38%	84.57%
Part-time for at least one academic year*	30.62%	15.43%
Care leaver bursary eligibility		
No eligibility	99.77%	100.00%
Eligibility	0.23%	0.00%
Estranged bursary eligibility		
No eligibility	99.66%	100.00%
Eligibility	0.34%	0.00%

Source: SQW analysis

Figure D-9 depicts balance on observable characteristics, demonstrating that the matched sample is more balanced than the unmatched sample. Although the standardised bias increased for sexual orientation and disability group, there is no statistically significant differences on observable characteristics in the matched sample.

Figure D-9: Balance checks for highly skilled employment

Figure D-10 compares the probability of treatment (propensity scores) for the unmatched and matched samples. It shows that the distribution of propensity scores is much more similar for treated vs untreated groups in the matched vs. the unmatched sample.

Figure D-10: Probability of treatment, unmatched vs. matched samples for highly skilled employment

Unmatched

Propensity Score

Untreated   Treated

Matched

Propensity Score

Untreated   Treated
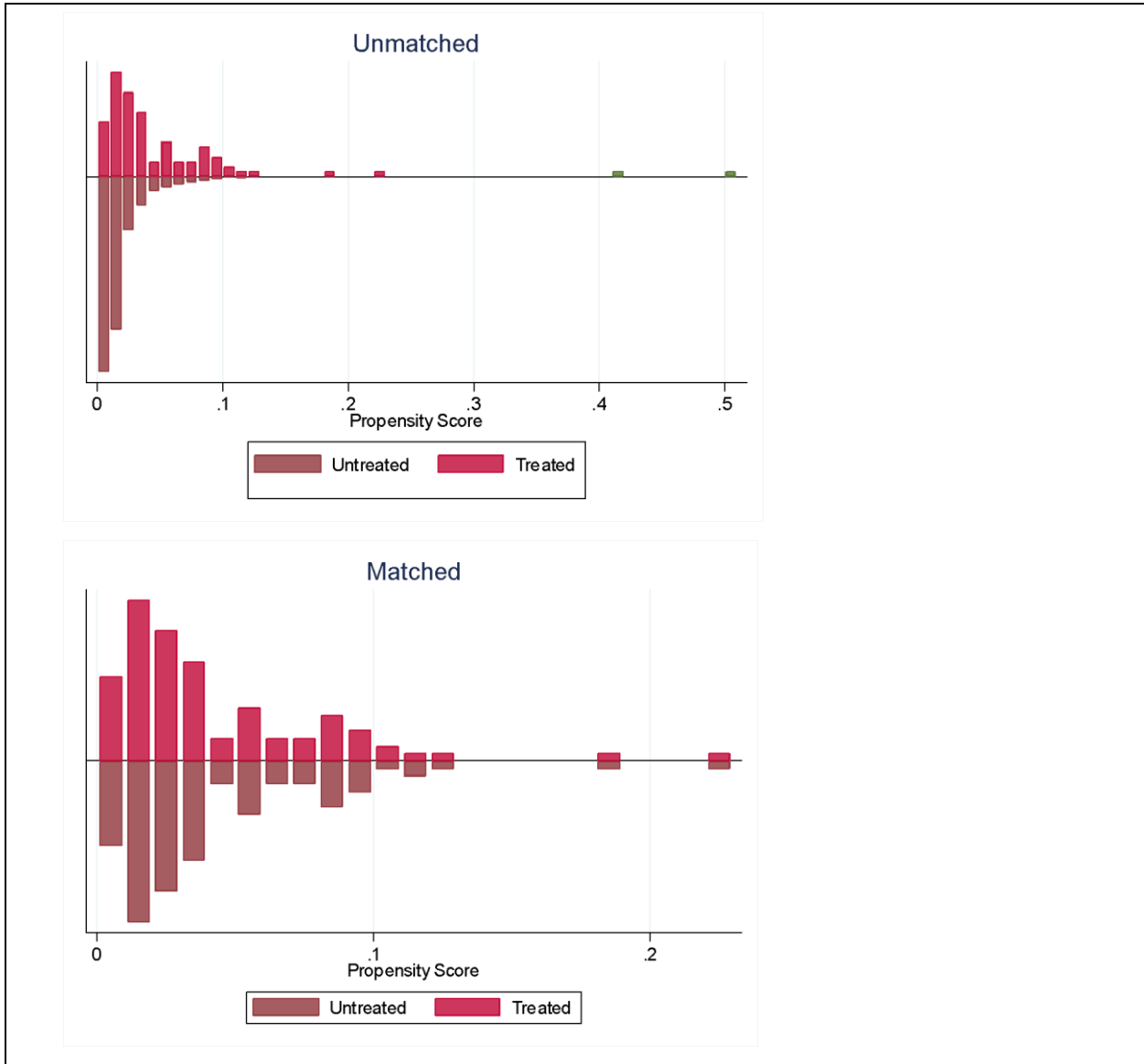
Source: SQW analysis

Annex E: Impact table

Outcome	Sample size	Effect size (95% confidence interval)	Estimated 'real world' effect	Evaluation security (1 = not at all secure 5 = very secure)	Type of evidence
Continuation (contemporaneous and post treatment)	1,102 (matched sample)	*Contemporaneous*: *Year 1:* Cohen's h: 0.048 (-0.123;0.218) Odds ratio: 1.120 *Year 2:* Cohen's h: 0.147 (-0.034;0.327) Odds ratio: 2.077 *Year 3: analysis not meaningful due to variable coding* *Post-treatment*: *Year 1: NA* *Year 2:* Cohen's h: -0.050 (-0.230;0.130) Odds ratio: 0.799 *Year 3:* Cohen's h: 0.167 (-0.078;0.411) Odds ratio: 2.699	N/A	3.8	2/3
Progression (contemporaneous and post treatment)	1,076 (matched sample)	*Contemporaneous*: *Year 1:* Cohen's h: 0.172 (0.025;0.320) Odds ratio: 1.692 *Year 2:*	In the first year, this presents an average marginal effect of 6.7 percentage point increased probability of	3.8	2/3

		Cohen's h: 0.240 (0.091;0.388) Odds ratio: 2.109 *Year 3:* Cohen's h: -0.077 (-0.323;0.169) Odds ratio: 0.713 *Post-treatment:* *Year 1: NA* *Year 2:* Cohen's h: -0.214 (-0.362;-0.065) Odds ratio: 0.549 *Year 3:* Cohen's h: -0.136 (-0.382;0.110) Odds ratio: 0.549	progression (significant at 5%). In the second year the marginal effect is 9.8 percentage point increased probability of progression (significant at 5%).		
Attainment	568 (matched sample)	Cohen's h: 0.061 (-0.105;0.226) Odds ratio: 1.169	N/A	3.6	2/3
Work or further study	210 (matched sample)	Cohen's h: 0.209 (-0.138; 0.555) Odds ratio: 2.746	N/A	2.2	2/3
Highly skilled employment	188 (matched sample)	Cohen's h: -0.218 (-0.507;0.071) Odds ratio: 0.513	N/A	2.2	2/3

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