TASO

Trial protocol Institutional Data Use: Lancaster University – Lancaster Success Programme

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QA:
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VERSION	DATE	REASON FOR REVISION/NOTES
Any changes to the design to be agreed between the implementation partner(s) and the evaluators. Note any agreed changes in the table below.		
5	5/3/24	Formatting and minor typographical changes. Changed name of Entry points covariate to Tariff
4	28/2/24	Inclusion of further clarification to address issue with survival analysis. Continuation is defined in this protocol as moving from Level 4 to Level 5 and Level 5 to Level 6 which provides two time-points
3	21/2/24	Second round of QA
2	13/2/24	Revision to address QA issues. Addition of a survival analysis.
1.0 [*original*]	8/2/24	Original version Post QA
Pre-registration		This design has been pre-registered on the Open Science Framework.[1]

The QA rating system is based on Evaluation Security tool presented in the TASO Monitoring and Evaluation Framework.[2]

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[1] https://osf.io/b4xqa/

[2] https://taso.org.uk/evidence/evaluation/

QA	Comments	Rating (out of 5)
Design	I am not comfortable with this design. It only focuses on those on the programme and therefore the causal results generated will be conditional on engagement with LSP. This is especially problematic as the selection process onto the LSP is opt in and likely to be subject to a significant sample selection process. We need a first stage of the process that understands this self selection into LSP, using the data of all eligible students (the mailing list used to promote the programme could be a start). We need to first understand what drives the choice to join LSP before we can understand how engagement with LSP has an impact on continuation and success outcomes. The inclusion of a survival analysis to address these concerns will need consideration as there are not different timelines for progression with regard to continuation. I welcome a model to consider the differences in the continuation for those who are: non-eligible, LSP opt-outs (or eligible not LSP as they do not actively opt in) and LSP opt-in students.	1 We need a first stage that examines the selection onto LSP and maybe then the use of some of those who did not sign up as a control group for the impact of LSP 3
Sample size	The selection criteria in change in 2021 (shown in table 3) has a significant impact on the number of students in the programme (shown in table 4). This needs to be explored more and could be used to form the basis of a better design. For example, did the change in the selection criteria improve the proportion of eligible students engaging with LSP and did this improve the outcomes for those engaging with LSP. For me this is a more interesting study than the one proposed as this would provide evidence on how universities can use the rules for eligibility to support groups of students. I would like to have a more details on the change of the rule, is this in response to the APP and a target for awarding gaps for example? In that case, does the change in the selection criteria provide evidence for the effectiveness of this intervention? I still think the change in the rules for eligibility in 2021/22 provides a structural break which can be exploited for a stronger causal analysis, the team may wish to explore synthetic control method as a robustness check for their models, and exploit this opportunity presented by the change in the eligibility criteria	2 Yes sufficient sample size, the question is whether there is a better research design that can come from the eligibility criteria change 2
Outcome measure	The selected outcome measures are sufficient. I would suggest including one on the recruitment process and a measure of initial engagement with LSP (compared to those who do not engage). We may need to think about the COVID impact on outcome measures in the interpretation of the results.	3 Existing outcome measures are fine. Adding one to represent the success of the recruitment

2

		process to LSP from all eligible students would be welcome
	Proposal unchanged in this regard	
Attrition	This is a one year programme so attrition is likely to be limited. I would like to have some analysis of the differences in outcomes for those who engage throughout the whole year and those who drop out (in the pick and mix participation model). It could be a whole year is unnecessary and a term is sufficient, which would enable the reallocation of resources to support more students for one term. Some consideration now being placed on the selection process onto the LSP. The results may provide insights to support the development of this piece on attrition from LSP especially after term 1.	3 Some scope to explore attrition more by looking at whole programme engagement and early disengagers
Validity	Given my significant concerns at the beginning of this report, the original model will have limited validity as it does not seriously address the selection process onto LSP The team has now considered how to model self selection onto LSP, whilst I may not have selected that estimation strategy, I am sure the results will inform the other pieces of the project improving validity	1 3
Overall	**As stated above, I have significant concerns about this model and at the least, we need to include a first stage that models the self selection process onto the LSP and then acknowledge the limited scope for the model results as these would only represent the causal effect of LSP engagement conditional on joining the programme** **Comments from the team given the reported data limitations go some way to address my concerns as a reviewer and the provide the opportunity for the team to learn from the analysis for a stronger evaluation. I would like to see the team make use of the change in eligibility criteria as a tool for a synthetic control model or something similar.**	**1** **3**

1. Summary

Background

This evaluation design has been developed as part of a project funded by TASO on the use of institutional data to generate causal (Type 3) evidence for interventions designed to increase equality of opportunity within the Higher Education (HE) sector. Four HE Providers (HEPs) are taking part in the project and a team from Staffordshire University are designing and carrying out the evaluation. Two types of evaluation for each HEP's intervention will be conducted: an impact evaluation and an implementation and process evaluation. This analysis protocol covers the impact evaluation of the Lancaster Success Programme (LSP) at Lancaster University.

Aims

The evaluation aims to determine the causal relationship between LSP participation and selected student outcomes by answering the following research questions:

- Does the LSP participation affect retention?
- Does LSP attendance affect grade attainment of students enrolled?
- Does LSP participation affect future employment prospects?
- Does LSP participation vary by demographic characteristics?

Intervention

The LSP offers participants access to a range of interventions inspired by coaching models of support and development. The core LSP offer consists of dedicated 1:1 personal development coaching sessions at regular intervals across the entire academic year. Additional LSP activities include:

- Prepare for Lancaster
- Action Learning Sets
- Themed peer mentoring
- Social and community events

Design

In this study we will apply an ex-post facto quasi-experimental evaluation design to determine whether LSP participation increases the likelihood of positive student outcomes.

Outcome measures

This study has two primary outcome measures: continuation and end of stage awards. We will explore two secondary outcome measures: attainment and progression to graduate outcome.

Analyses

We will use a combination of ordinal and logistic linear regression models, in addition to chi square analyses to test the hypotheses articulated as part of the evaluation.

2. Background

This evaluation design has been developed as part of a project funded by TASO on the use of institutional data to generate causal (Type 3) evidence for interventions designed to increase equality of opportunity post-entry within the Higher Education (HE) sector. Four HE Providers (HEPs) are taking part in the project and a team from Staffordshire University are designing and carrying out the impact evaluation. Two types of evaluation for each HEP's intervention will be conducted: an impact evaluation and an implementation and process evaluation. This analysis protocol covers the impact evaluation of the Lancaster Success Programme (LSP) at Lancaster University.

Details of the project team from TASO, Lancaster University and Staffordshire University responsible for delivering the evaluation can be found in Table 1.

Table 1: Project team

Organisation	Name	Role and responsibilities
TASO	Dr Rob Summers	Project/Contract Manager
TASO	Luke Arundel	Project Assistant
Staffordshire University	Dr Sally Andrews	Project Lead. Responsible for day-to-day management of the project.
Staffordshire University	Vanessa Dodd	Project Co-Lead. Supporting the project lead on day-to-day management.
Staffordshire University	Reagon Alford	Research Assistant. Responsible for data cleaning, analysis, and reporting.
Staffordshire University	Sehrish Ghayas	Research Assistant. Responsible for data cleaning, analysis, and reporting.
Lancaster University	Dr Matthew Pawelski	Project Lead at Lancaster University. Responsible for data curation and distribution

3. Aims

This evaluation is designed to examine the relationship between LSP participation, continuation (i.e. continuing to next academic year) and end of stage academic attainment (i.e. end of stage grades). As secondary outcomes, we will also seek to understand the relationship between LSP participation and graduate outcomes as well as final degree awards. The evaluation will meet these aims via robust, inferential

statistical techniques so the evaluators can infer causation. Four research questions and testable hypotheses were developed below:

RQ1: Does the LSP participation affect continuation to the next level of study?

H_0: There is no relationship between LSP participation and student continuation to Level 5.

H_1: Greater engagement with LSP has a significant effect on continuation to Level 5 in comparison to those who participated less.

RQ2: Does LSP attendance affect grade attainment?

H_0: LSP participation has no relationship to final grade attainment.

H_1: Greater engagement with LSP results in significantly different final grades compared to those who participated less.

RQ3: What effect does the LSP have on future employment prospects?

H_0: LSP participation has no relationship with graduate outcomes.

H_1: Greater engagement with LSP results in significantly different graduate outcomes than those who participated less.

RQ4: Does LSP participation vary by demographic characteristics?

H_0: There is no relationship between participant demographic characteristics and participation in the LSP.

H_1: There are significant differences between participation in the LSP and student demographic characteristics.

4. Intervention

LSP offers a range of support activities for students that are inspired by coaching models of support and development. The core offer of the LSP is dedicated 1:1 personal development coaching sessions that occur at regular intervals across the entire academic year. The LSP team developed a comprehensive schedule of recruitment for eligible students including online information events, presentations at FE colleges, and re-advertisement through academic departments if there is space remaining at the start of term (these adverts are targeted at under-represented courses). Online information events are held multiple times to ensure that there are plenty of opportunities for contextual offer holders to engage. Through these sessions, offer holders will find out more about the LSP and be able to sign up to the programme.

LSP implements several complementary interventions including Prepare for Lancaster, Action Learning Sets, themed peer support as well as a variety of informal networking and student voice events at dedicated times within the academic year:

1:1 personal development coaching: Approximately six 1-to-1 sessions throughout level 4 (approximately two per term). However, the specific number of sessions is determined by the student.

Prepare for Lancaster: Prepare for Lancaster is designed to familiarise students with the LSP, share information about what activities will be part of the programme and to get to know other students opting in to the LSP. It consists of two Welcome events (one online and one face to face) scheduled approximately two weeks before the start of the academic year. By holding the event face to face, students get an early opportunity to experience campus as a student and get introduced to the various support structures that are available to them throughout their studies. It is also held online to ensure the activity is accessible to students who may not be able to attend in person.

Action Learning Sets: This activity consists of 18 sessions per year (four to seven students at each). At these sessions one student raises a challenge or issue they're facing related to their studies at LU, and the other students apply coaching techniques to support the student to think about how to resolve their challenge.

Themed peer mentoring: This activity consists of six sessions throughout the academic year (two per term). Peer mentoring was introduced as a forum where students connect (approximately 20-30) and is an informal alternative to Action Learning Sets designed based on student feedback that students wanted a space to offer advice without the formalised coaching mechanism of the Action Learning Sets.

Social and networking events: These events are multiple and spread throughout the academic year. Indicative events include: Welcome to Lancaster social (at the beginning of term 1), mature student social events, LSP social events, summer BBQ.

Student voice & community events: LSP-specific student voice opportunities are available to students, including a staff-student committee and LSP advocates to feed back about the programme.

An underlying principle of the LSP is that students can engage in the way that is best for them. For example, some students may not feel like they need the coaching sessions but find the social and networking events invaluable for providing a sense of community so are able to 'pick and mix' their participation.

5. Design

This evaluation study will apply a post-hoc evaluation design to determine the relationship between LSP and the outcome measures identified within this trial protocol.

This study will use matched administrative data with localised LSP engagement data from the Student Success team from academic years 2019/20 to 2023/24.

6. Outcome measures

We have identified two primary outcome measures and four secondary outcome measures (see Table 2) to test the hypotheses detailed in Section 2.

Primary outcome measures were identified due to their direct alignment with the aims of LSP; retention and skills development as part of the coaching approach embedded in LSP. Secondary outcome measures identified provide a fuller picture of long-term outcomes that may occur because of participation in LSP.

Table 2: Primary and secondary outcome measures

Outcome measure	Type	Level
Primary: Continuation	Categorical	Continued, Withdrawn
Primary: Stage marks	Continuous	Numeric grade at the end of the first year of study
Secondary: Completion	Categorical	Completed, Withdrawn
Secondary: Degree award	Categorical	Good degree outcome, lower degree outcome
Secondary: Graduate outcome	Categorical	Progressed to graduate outcome[3] as defined by the Graduate Outcomes Survey, Did not progress to a graduate outcome as defined by the Graduate Outcomes Survey
Secondary: LSP participation	Continuous	Count of attendance

7. Sample selection

The LSP is a yearlong targeted, opt-in programme for eligible students. The eligibility criteria of LSP have evolved to meet the needs of students at the university. The eligibility criteria and the years in which they changed are presented Table 3.

Table 3: Eligibility criteria changes to LSP by academic year

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[3] A graduate outcome is achieved if a student articulates they are in skilled employment or further study as part of a census taken 15 months after graduation.

Academic year	Eligibility criteria
2019/20	Students applying with BTEC or a non-standard qualification (such as Cambridge Tech or Access Programme qualifications) and who also met WP criteria.
2021/22	Students in receipt of a contextual offer including students from a POLAR4 Q1 neighbourhood, care experienced students, students with prior participation in the Lancaster Access Programme and Realising Opportunities Programme, Mature students. Ad-hoc exceptions to eligibility also included recipients of need-based scholarships.

Table 4 estimates the count of participants in LSP by academic year.

Table 4: LSP participant counts

Academic year	LSP participant count
2019/20	54
2020/21	141
2021/22	215
2022/23	260
2023/24	340
Total	**1,040**

8. Identification strategy

Participants will be identified within the data as participants alongside quantified counts of their participation through attendance within each of the separate strands of LSP intervention.

9. Data collection

Data will be obtained from the university provider, from their historical administrative records on students. No data will be collected by the researchers at any point.

10. Procedure

A high level timeline for the project is presented in Table 5.

Table 5. Project timeline

Timeline	Action
October 2023- January 2024	● Set up data sharing process and agreement ● Conduct enhanced theory of change workshop

Timeline	Action
	- Achieve ethics approval - Complete draft enhanced theory of change - Complete Trial Protocol
February 2024 – March 2024	Analyse data and deliver final report

11. Power calculations

As prior research has not established the common effect size of interventions like this, certain assumptions must be made; this includes the effect size/odds ratio, which will be tested three times for small, medium, and large effects. As there is only one predictor, a version of the coefficient of determination, termed in the G*Power software as R^2 *Other X*, functions as a metric of assumed model fit relative to the null hypothesis and can be referred to as *pseudo-R^2*. This will also be tested three times, with a cautious estimate, a moderate estimate, and a large estimate. Furthermore, and whilst assuming the null hypothesis, the conditional probability of the event Y being equal to 1 given that the predictor variable X is equal to 1 will be assumed as 0.5; this assumes that the probability is no greater than chance. In this specific instance, Y represents the binary variable 'progression' and X represents the continuous variable 'LSP attendance'. Moreover, as the power analysis will be conducted upon a binary logistic regression, a binomial distribution will be assumed. Similar to the conditional probability, the X parameter π has been assumed as 0.5. This is a conservative estimate decided due a lack of a previous standard or pilot data.

As mentioned, the overall power analysis will be based on a binary logistic regression model which will address H1 (see section 12 for more details). This decision is motivated by it being the evaluation's primary analysis.

The power analysis was run via the G*Power software, with the settings as follows:

- Test family: "z tests"
- Statistical test: "Logistic regression"
- Type of power analysis: "A priori: Compute required sample size – given α, power and effect size"
- Tail(s): One
- Odds ratio: 1.5, 2.5 & 4
- $Pr(Y = 1|X = 1)H0 = 0.5$
- α err prob = 0.05
- Power (1 – β err prob) = 0.80

- R^2 other X = 0.25, 0.50, 0.75
- X distribution: "binomial"
- X parm π = 0.5

As the researchers have no control or influence over the total sample population, nor the allocation to the intervention or comparator groups, only the total required sample will be reported instead. The Critical z and Actual Power will also be reported. The table also gives values assuming a 20% loss to the minimal required sample, if the sample provided is less than the sample size desired by the evaluators.

Table 6: Power analysis results

$R^2_{Other X}$	Assuming OR =	Minimum required sample size	Critical z-value	True Power
0.25	1.5 (small)	817	1.64	0.80
	20% sample loss		1.64	0.72
	2.5 (medium)	172	1.64	0.80
	20% sample loss		1.64	0.72
	4.0 (large)	85	1.64	0.80
	20% sample loss		1.64	0.72
0.50	1.5 (small)	1225	1.64	0.80
	20% sample loss		1.64	0.72
	2.5 (medium)	258	1.64	0.80
	20% sample loss		1.64	0.72
	4.0 (large)	127	1.64	0.80
	20% sample loss		1.64	0.72
0.75	1.5 (small)	2450	1.64	0.80
	20% sample loss		1.64	0.72
	2.5 (medium)	516	1.64	0.80
	20% sample loss		1.64	0.72
	4.0 (large)	253	1.64	0.80
	20% sample loss		1.64	0.71

12. Analytical strategy

RQ1: Does LSP participation affect continuation to the next level of study?

The first research question will primarily be addressed through the application of a logistic regression model, with the equation:

$$P(Y = 1) = \frac{1}{1 + e^{-(\beta_0 + \beta_1 X_1 + \beta_2 X_C)}}$$

Where, $P(Y = 1)$ is the probability of the participant continuing to Level 5 of their programme, β_0 is the intercept, β_1 is the coefficient, X_1 is LSP attendance, β_2 is a vector of coefficients and X_C is a vector of covariates from Table 10 that were found to be significant predictors of session attendance in the exploratory analysis (see Exploratory Analysis, below). This model will be used to infer the effect of attendance at the LSP on continuation in the LSP students' respective courses.

In this model, LSP attendance is operationalised via 1:1 coaching attendance. This has theoretical and practical reasoning. Firstly, this is considered a primary mechanism of change for the programme, and secondly, the other activities were not consistent across the years of programme, nor was attendance consistently recorded.

This research question will be further explored using a survival analysis model, with the Cox Proportional Hazards Model expressed as:

$$h(X) = h_0(t) \cdot exp\,(\beta_1 \cdot Actual\ E1 + \beta_2 \cdot Disinterested\ E1 + \beta_3 \cdot Potential\ E1 +$$
$$\beta_4 \cdot Actual\ E2 + \beta_5 \cdot Disinterested\ E2 + \beta_6 \cdot Potential\ E2 +$$
$$\beta_7 \cdot Tariff\ Points\,)$$

Where $h(t/X)$ is the hazard function at time t given the covariate vector X, $h_0(t)$ is the baseline hazard function, and $\beta_1 \ldots \beta_7$ are the coefficients associated with the respective covariates. *Actual E1*, *Disinterested E1*, *Potential E1*, *Actual E2*, *Disinterested E2* and *Potential E2,* each represent different groups. *E1* and *E2* represent the two eligibility criteria, with *E1* as the original criteria (BTEC or other WP criteria) and *E2* as the updated criteria (POLAR4 Q1). The *Actual* groups are the LSP participants, the *Disinterested* groups are participants who would be eligible but chose not to take part, and *Potential* are participants who would have been eligible to take part in the other criteria but did not have the opportunity to. *Tariff Points* are the total Tariff points of the students.

This model will compare the proportional likelihood of departure at specified time points within a student's possible undergraduate degree life cycle (Level 4, Level 5 & Level 6). Group comparison between the intervention group, eligible non-applicant group, and the non-eligible group will be made with a log-rank test. Amount of tariff points on entry will be controlled for within the model.

RQ2: Does the LSP attendance affect grade attainment?

The second research question will be investigated by utilising two ordinal regression models. The first model will be used to infer whether opting into the intervention affects student grade attainment at large. This model will include the covariate of tariff points, as this may be a predictor of later academic attainment. This model can be expressed algebraically as:

$$logit\big(P(Y \leq j)\big) = \alpha_j + \beta_1\, Intervention + \beta_2\, Tariff + \beta_3 X_C$$

Where $P(Y \leq j)$ is the cumulative probability of the ordinal outcome variable being less than or equal to level j, α_j is the threshold parameter for level j of the ordinal outcome variable, *Intervention* denotes whether the participant underwent the LSP or did not opt-in, and *Tariff* is the participants' tariff points. β_1 and β_2 are the coefficients associated with the respective covariates. β_3 is the coefficient of the covariates, X_C, identified as significant predictors of session attendance in the exploratory analysis.

The second ordinal regression will specifically investigate whether attendance at LSP affects LSP students' grade outcomes. This model can be expressed through the equations:

$$P(Y \leq 1) = \frac{1}{1+e^{-(\alpha_1 + \beta X)}}$$

$$P(Y \leq 2) = \frac{1}{1+e^{-(\alpha_2 + \beta X)}}$$

$$P(Y \leq 3) = \frac{1}{1+e^{-(\alpha_3 + \beta X)}}$$

$$P(Y \leq 4) = \frac{1}{1+e^{-(\alpha_4 + \beta X)}}$$

$$P(Y \leq 5) = \frac{1}{1+e^{-(\alpha_5 + \beta X)}}$$

Where the values of Y and $\alpha_1, \alpha_2, \ldots, \alpha_5$ correspond to the levels of the outcome variable 'final grade attained' and $P(Y \leq 1, 2, ..., 5)$ is the cumulative probability for each respective category. The threshold parameters of each level are presented by α and β is the coefficient of X.

RQ3: What effect does the LSP have on future employment prospects?

Like RQ1, this research question will be explored through a logistic regression. The equation will be the same:

$$P(Y=1) = \frac{1}{1+e^{-(\beta_0 + \beta_1 X + \beta_2 X_C)}}$$

However, $P(Y=1)$ is the probability that the participant has entered high-skill employment.

RQ4: Does LSP participation vary by demographic characteristics?

This research question will be addressed through a series of Chi-Square tests, to investigate whether the decision to opt-in to LSP differs across demographic groups. The larger model can be algebraically expressed as:

$$\chi^2 = \frac{(N \times Observed_{1,1} - Expected_{1,1})^2}{Expected_{1,1}} + \cdots + \frac{(N \times Observed_{2,2} - Expected_{2,2})^2}{Expected_{2,2}}$$

Where χ^2 represents the test statistic and N is the total sample size. Contingency tables can be in Tables 7-9.

Table 7: Chi-Square Test (Opt-In vs Mature Student Status)

	Mature Student: YES	Mature Student: NO
Opt-In: YES	$Observed_{1,1}$	$Observed_{1,2}$
Opt-In: NO	$Observed_{2,1}$	$Observed_{2,2}$

Table 8: Chi-Square Test (Opt-In vs Care Leaver Status)

	Care Leaver: YES	Care Leaver: NO
Opt-In: YES	$Observed_{1,1}$	$Observed_{1,2}$
Opt-In: NO	$Observed_{2,1}$	$Observed_{2,2}$

Table 9: Chi-Square Test (Opt-In vs Commuter Status)

	Commuter: YES	Commuter: NO
Opt-In: YES	$Observed_{1,1}$	$Observed_{1,2}$
Opt-In: NO	$Observed_{2,1}$	$Observed_{2,2}$

Exploratory analysis

An exploratory analysis will be conducted to see, within the LSP group, whether certain demographic factors predict session attendance. This model can be seen here:

$$Intervention = \beta_0 + \beta_{Mat} + \beta_{Gen} + \beta_{CLStatus} + \beta_{ComStatus} + \beta_{CSPop} + \beta_{ClearStatus} + \epsilon$$

Where *Intervention* is the outcome variable, β_0 is the intercept, β_{Mat} is the mature student status variable, β_{Gen} is the gender variable, $\beta_{CLStatus,}$ is the care leaver status variable, $\beta_{ComStatus}$ is the commuter status variable, β_{CSPop} is the course population variable, $\beta_{ClearStatus}$ is the clearing status variable, and ϵ is the error term.

See Table 10 for all variables used within the proposed analyses.

Table 10: List of Variables Included in Analyses

Variables	Type	Levels	Description
Intervention	Categorical	Eligible non-participant (No Opt-In), LSP participant (Opt-In)	Student LSP status, with levels denoting whether eligible students chose to Opt-In.
1:1 coaching attendance	Continuous	Count of sessions attended	The total amount of 1:1 coaching sessions attended by each student.
Tariff points	Continuous	Total UCAS tariff points	The total amount of UCAS tariff points on entry to university.
Mature status	Categorical	Mature, Young	Status as a mature student.
Commuter status	Categorical	Commuter, Non-commuter	Status as a commuter.

Variables	Type	Levels	Description
			Note: this was calculated by whether a student's home postcode is the same as their term time postcode, and thus may not be a perfect measure.
Gender	Categorical	Female, Male, Non-binary, Other	Self-reported gender of student.
Ethnicity	Categorical	Asian/Asian, Black/Black British, British, Mixed Ethnicities, White/White British	Self-reported ethnicity of student.
Clearing status	Categorical	No, Yes	Whether a student has entered their course through clearing.
Care leaver status	Categorical	Care leaver, Non-care leaver	Denoting whether a student is a care leaver.
Employment Status	Categorical	High-skilled, Other	Whether a student is, by the institution's measure, in high skilled employment.

13. Ethical considerations

This project has received ethical approval from Lancaster University's ethics committee. The following ethical considerations are key to the research and an approved ethics submission will be submitted to provide further detail:

Confidentiality and Privacy: We will safeguard the confidentiality and privacy of student data in line with GDPR (2016) regulation. In addition, the providers' privacy notice informs students that their administrative data may be used for research and evaluation purposes. We have implemented procedures to protect sensitive information and ensure that individual student identities are not disclosed without explicit consent. Data owners developed robust anonymisation protocols prior to disseminating data to evaluators. These protocols prevent the identification of individual participants when conducting analyses and reporting findings.

Data Security: Data owners and evaluators have implemented robust data security measures to protect student data from unauthorised access, disclosure, or loss. Data will be shared using secure servers, encrypted data files, and two factor authentication access controls to safeguard the integrity of the data.

Minimisation of Harm: We have taken steps to minimise any potential harm to students through the procedures outlined above. This research will be undertaken using large scale secondary datasets which reduces the probability of identification. We will not

report descriptive statistics on control or covariate data where counts are considered low (n<15) and will aggregate data where necessary. For example, it may be appropriate to report on ethnicity using the aggregate groupings Black, Asian, mixed ethnicities and white rather than disaggregating this data into more granular groupings.

14. Risks

Part of evaluation	Risk	Mitigation strategy	Risk owner
Ethical approval	Failure to get ethical approval in time - Delay to Lancaster University ethical approval would delay starting on data sharing and analysis	• Lancaster University to submit ethics early • evaluator to adapt timeline to conduct evaluations for Lancaster University with ethical approval first, freeing up time later for those facing delays with ethical approval.	Matthew Pawelski
Data curation	Lancaster University does not agree to share required institutional data with independent evaluator - Limited access to some or all institutional data would impact the robustness of the evaluation	• independent evaluator to lead data sharing agreement with each Lancaster University and TASO at the outset of the project • Research protocols developed based on available data. Independent evaluator document if more relevant institutional data is available but not permitted. • Independent evaluator will work flexibly with Lancaster University to develop arrangements that work with Lancaster University requirements (e.g., temporary staff account for project members requiring data access negates the need for external data sharing)	Matthew Pawelski
Data analysis	Institutional Data accuracy is limited – would impact on robustness of findings	• Independent evaluator to maintain honest dialogue with Lancaster University on data accuracy • Recognising the messiness of real-world data, the independent evaluator will make an informed decision about how to balance depth of findings with robustness of data (using data cleaning and conversations to inform appropriacy)	Independent evaluator