

Does increased teaching by casual staff lead to lower student satisfaction?

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Abstract

Using survey data on student satisfaction and teaching time in the UK, we examine how the proportion of teaching conducted by casual staff affected students' satisfaction ratings of their time at university during the 2014-15 academic year. We find statistically significant evidence that an increased proportion of teaching delivered by casualised staff results in lower student satisfaction. This suggests that there is a trade-off arising from increasing casualisation, and whilst this may reduce financial expenditures in the short-term it has the potential to result in lower student demand (and thus income) in the long-run.

JEL classifications: I20, I23, C21, J41

Keywords: Casual contracts, UK Higher Education, Student Satisfaction

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1 Introduction

There are a number of reasons why student satisfaction may be affected by the proportion of teaching conducted by casual staff, for instance, casual teaching staff may have less time available to dedicate to preparing class material and may be able to offer less out-of-class contact time, leading to lower student satisfaction. In this paper, we explore the relationship between the amount of teaching time delivered by staff on casual contracts and students' reported satisfaction from their time at university. Our analysis is conducted at the university- and subject- level and focuses on the 2014-15 academic year.

The subject of this paper is of interest to policymakers as there is an underlying hypothesis that students prefer to be taught by academic, rather than casual staff, yet due to funding constraints there has been an increase in teaching by casual staff over time. If the hypothesis is correct then this would suggest that student satisfaction will fall, which may affect future demand for universities which employ a large proportion of teaching staff on casual contracts. On the other hand, if this hypothesis is not supported by empirical evidence then this would permit greater use of casual teaching staff, without affecting student satisfaction, which may help resolve funding issues at universities.¹

To the best of our knowledge, this paper is the first to utilise both the Student Academic Experience Survey (SAES) and the University and College Union (UCU) survey in this manner to explore the effect on student satisfaction of teaching conducted by casual staff in HEIs. The existing literature focuses on the effects of casual contracts on staff well-being and finds that such contracts often result in increased stress of staff (e.g. Gill 2014, Lopes & Dewan 2014, Allmer 2018). Lenton (2015) investigates the National Student Survey, and explores the determinants of student satisfaction, finding that the student-staff ratio and student employability are strong influencers of student satisfaction. However, the paper doesn't explore the relationship between student satisfaction and the prevalence of staff casualisation.

Our results show that an increase in the proportion of teaching by casual staff results in a decline in student satisfaction: a 1 percentage point increase in the proportion of teaching by casual staff leads to a 0.12 percentage point reduction in the probability that a student will be satisfied with their time at university. This result is largely driven by a (0.15pp) reduction in students stating they are 'very satisfied', instead, being more likely to respond that they were only 'fairly satisfied' (increase of 0.71pp), 'not very satisfied' (increase of 0.65pp) and 'not at all satisfied' (increase of 0.18pp). These findings would suggest policymakers at HEIs have a direct incentive to consider their employment practices in order to boost student satisfaction, which may have positive effects on student demand (Gibbons et al. 2015).

2 Data

We have obtained two proprietary datasets: (1) survey results of university teaching staff, allowing us to capture the proportion of teaching by staff employed on a casual contract (conducted by the UCU); and (2) survey results of undergraduate students across the

¹It goes without saying that increasing staff casualisation may have other effects, such as leading to increases in staff dissatisfaction and reduced staff well-being. This paper focuses only on the effect, direct or indirect, of staff casualisation on student satisfaction, and as such, we cannot comment on other effects that increasing staff casualisation may cause.

UK, reporting their satisfaction from the university experience (SAES). Both datasets are available at subject- and university-level for the academic year 2014-15.

In the first dataset, we exclude any survey responses from respondents who were not involved in teaching, provided more than one response or were at a further or alternative education provider. This leaves 1,580 university-subject pairs with information on respondents' estimate of the average proportion of timetabled teaching time relating to undergraduate courses per week delivered by staff on open-ended/permanent contracts, fixed-term contracts or casual contracts.² A casual contract is defined as a situation where an individual is employed on an 'as and when' basis, which may or may not be renewed. This includes zero hours, variable hours, sessional and termly contracts. We define a contract which lasts for one or two years as being fixed.

This proportion of teaching time delivered by casual staff, given as a value between 0 and 100%³, was used as the key measure of staff casualisation in this analysis. On average, there were 4.8 responses per university-subject pair, with a median of 3 responses. In the first instance, we removed any university-subject pair which had fewer than five responses, to ensure accuracy of the reported proportion of teaching by casual staff.⁴

The second dataset comes from the 2014-15 SAES⁵, a survey of full-time undergraduate students studying across the UK.⁶ The survey investigated student satisfaction and the key variable of interest is the extent to which the student is satisfied with the overall quality of their course, denoted on a 4-point scale ranging from 'not at all satisfied' to 'very satisfied'.

The final, merged, dataset contains 8,145 university-subject responses. Within this sample, there were 118 different universities and 15 different subject areas.^{7,8}

3 Descriptive Statistics

In Table 1 we present descriptive statistics related to the key dependent variables of interest.

Around 2% of observations indicated that no undergraduate teaching was delivered by staff employed on a casual contract. It should be cautioned that the proportion used for this analysis comes from survey data and it may be the case that the information is inaccurate, particularly in larger departments where respondents may know less about the contractual arrangements of their colleagues. This, therefore, explains why the sample is restricted to observations which are based on the average of at least five responses.

²Whilst the Higher Education Statistics Agency (HESA) publish information on atypical staff, there is no information requirement for HEIs to provide this information to HESA and, as such, it is often unpopulated or incorrect. Furthermore, the survey allows us to explore the proportion of teaching conducted by casualised staff, rather than the number of staff who are casualised (and may, or may not deliver teaching). Student satisfaction is likely to be more directly affected through teaching by casualised staff and students may not observe the effects of casualisation by the wider body of staff.

³With the sum of the proportion of permanent, fixed-term and casual jointly summing to 100%.

⁴When considering the number of responses which contributed to each university-subject pair, there is a clear trade-off between reliability and total number of observations.

⁵Summary statistics, along with an explanation of this survey, can be found at <https://www.hepi.ac.uk/2015/06/04/2015-academic-experience-survey/>.

⁶This survey is conducted alongside UCAS, inviting all UCAS starters to join the panel. The panel comprises around 1 in 20 current UK undergraduates (SAES et al. 2015).

⁷A full list of universities and subject-areas included in the sample is provided in the Annex.

⁸The subject variable is broadly aligned to JACS1 codes. The Joint Academic Coding System is a way of classifying academic subjects and modules. See <https://www.hesa.ac.uk/support/documentation/jacs>.

Furthermore, respondents were sourced from the UCU’s mailing list, so this is not a representative sample of the university sector. Around 45% of observations have a proportion of teaching by casual staff lower than 10%, and 80% of observations have a proportion lower than 20%.

Student satisfaction was not biased towards those who were dissatisfied, which might be expected if dissatisfied students are more likely to wish to provide feedback. Indeed, 2% of sampled students were ‘not at all satisfied’, 10% were ‘not very satisfied’, 59% were ‘fairly satisfied’ and 29% were ‘very satisfied’. This may have been because respondents were incentivised to complete the survey with a £1 Amazon gift card.⁹

Table 1: Descriptive Statistics

Variables	Source	Mean	Std. Dev.	Min	Max
Student Satisfaction	SAES	3.15	0.67	1	4
University	SAES and UCU	N/A	N/A	1	118
Subject-area	SAES and UCU	N/A	N/A	1	15
Proportion of Casual Staff	UCU	0.13	0.09	0.00	0.50
Proportion of Fixed Staff	UCU	0.15	0.09	0.00	0.68
Total Number of Students ^{a,b}	HESA	9.52	0.46	6.45	11.57
Total Number of Staff ^{a,b}	HESA	7.54	0.66	4.32	8.86
Russell Group ^a	HESA	N/A	N/A	0	1
Number of Students on Course ^a	HESA	7.35	0.63	1.61	9.99
Student-Staff Ratio ^{a,b}	HESA	8.12	3.71	1.65	17.79
Net Income ^{a,b}	HESA	12.63	0.75	9.63	14.31
Surplus:Income ^b	HESA	0.06	0.04	-0.07	0.19
Region	HESA	N/A	N/A	1	12
Person Weight ^c	SAES	1.03	0.48	0.0074	2.00

Note: All variables listed above have 8,145 observations except Number of Students on Course (8,044). ^a natural logarithm of variable has been used. ^b refers to number at university-level (and not university- subject-level). ^c a weighting variable to account for survey non-responses. Source: Author’s calculations from UCU and SAES data.

4 Methodology

As a result of the discrete and ordered nature of our dependent variable (student satisfaction), a multinomial discrete choice model is adopted, namely the ordered logit model. This model is built around a latent regression where y^* is the unobserved dependent variable (true level of student satisfaction), x is a vector of explanatory variables, β an unknown parameter vector and ϵ an error term with a logistic distribution:

$$y^*_i = \beta'X_i + \epsilon_i \quad (1)$$

The true level of student satisfaction (y^*) is not observed, but we do observe y , the student satisfaction rating given by the individual:

⁹It should be noted that it was clear that the survey was run by an independent organisation and the incentive was not provided by the student’s institution or conditional on their feedback. It is therefore unlikely that the incentive would have affected the respondent’s impression of their institution when providing feedback.

$y = 1$ (student ‘not at all satisfied’) if $y^* \leq 1$
 $y = 2$ (student ‘not very satisfied’) if $1 < y^* \leq \mu_1$
 $y = 3$ (student ‘fairly satisfied’) if $\mu_1 < y^* \leq \mu_2$
 $y = 4$ (student ‘very satisfied’) if $\mu_2 < y^* \leq \mu_3$

With μ_1 , μ_2 and μ_3 being unknown threshold variables to be determined. Note that $Pr(y_i = j) = Pr(y_i \text{ is in the } j\text{th range})$, where $J = 1, 2, 3, 4$. Therefore, the probability that y will take on a particular value is expressed as:

$$Pr(y_i = j|X) = F(\mu_j - \beta'X_i) - F(\mu_{j-1} - \beta'X_i) \quad (2)$$

With $F()$ representing the cumulative distribution function of the logistic distribution, such that $F(a) = 1/[1 + \exp(a)]$. This implies that:

$$Pr(y_i = j|X) = \frac{1}{1 + e^{-u_j + \beta'X_i}} - \frac{1}{1 + e^{-u_{j-1} + \beta'X_i}} \quad (3)$$

For this study, the latent regression of interest is:

$$StudentSatisfaction_{i,j,k} = \alpha + \beta CasualStaff_{j,k} + \gamma X_{i,j,k} + \mu_j + \lambda_k + \epsilon_{i,j,k} \quad (4)$$

In this specification, i refers to the student, j to the university and k to the subject-area. β is our coefficient of interest: a positive and significant value implies that the proportion of teaching by casual staff leads to higher student satisfaction and vice versa for a negative coefficient.

We have included an individual control term for university and subject, μ_j and λ_k respectively, to remove any omitted characteristics associated with university and subject. Given data limitations it is not possible to interact university and subject and HESA data is only disaggregated at the university-subject level for student numbers, which we control for below.

X is a vector of control variables, including proportion of teaching by staff on a fixed contract, total number of students at institution, total number of staff at institution, total number of students on a particular course in a given university, student-staff ratio, region, a dummy variable for Russell Group membership, net income of the institution and the ratio of surplus to income (see Table 1). We test various specifications and believe this set of control variables is sufficient to alleviate any omitted variable concerns.

We use robust standard errors to account for any potential heteroskedasticity or serial correlation.¹⁰ Additionally, we weight the data, using the weights provided in the SAES, to account for the fact that the survey sample design did not fully reflect the demographic split of the university population.

5 Results and Discussion

Below we present results from a variety of specifications, starting from the most parsimonious model, testing university and subject fixed effects (as well as jointly), before adding

¹⁰The intra-class correlation between university and student satisfaction is relatively small, at 0.02, suggesting that we do not need to use clustered standard errors.

various controls (Table 2). In Table 3, we estimate the associated marginal effects for the ordered logistic models.

We see that for all models there is a negative coefficient attached to the proportion of teaching by casual staff, indicating that as the proportion increases, student satisfaction decreases.

The coefficient of interest is significant and negative when including university controls (column 2) but insignificant when including subject controls (3). However, the majority of coefficients attached to universities in (2) are insignificant, and university coefficients are jointly insignificant; this is the same in (3) for subject coefficients, which are all insignificant (both individually and jointly). Furthermore, the results suggest that when controlling for both subject and university simultaneously, an increase in the proportion of teaching by casual staff reduces student satisfaction (column 4), although this finding is only significant at the 10% level.¹¹ Moreover, the majority of coefficients attached to university are individually insignificant and the university variable is jointly insignificant. Similarly, the coefficients associated with subject are all insignificant (both individually and jointly).¹² As a result of these findings, we prefer the models without the university and subject controls.

In specifications (5) to (8) we include various controls to alleviate any omitted variable bias concerns. In column (5) we control for the proportion of teaching by staff on fixed contracts, as well as region. Column (6) includes the total number of students at each institution along with the total number of staff. In (7), we include a dummy variable for whether the institution is in the elite Russell Group. This variable is not significant, although we note that it is significant in regressions which do not control for total number of staff and students (not shown here). This suggests that the effect on student satisfaction of being a Russell Group university is well proxied by university size. Finally, in (8) we include the number of students on a particular course within the institution, the student staff ratio, net income and the ratio of surplus to income. These variables are found to be insignificant (both individually and jointly).

The preferred specification is that of (6), given the insignificance of adding further variables. We see that the effect of the proportion of teaching by casual staff on student satisfaction is negative, whilst the impact of fixed-staff teaching proportion is positive. The results also suggest that institutions with a larger student intake lead to lower student satisfaction, whilst having a greater number of staff provides the opposite effect. Institutions in London are associated with having a lower student satisfaction, as are those in Yorkshire and the Humber.

Table 3 presents the marginal effects of these results, and allows us to quantify the effect in terms of probabilities. Studying the marginal effects of our preferred specification (6), a 1 percentage point increase in the proportion of teaching delivered by casualised staff leads to a 0.15 percentage point decrease in the probability that a student will be ‘very satisfied’. Instead, the probability that a student is ‘fairly satisfied’ increases by around 0.71pp, ‘not very satisfied’ by 0.65pp and ‘not at all satisfied’ by around 0.18pp. The positive marginal effect associated with ‘fairly satisfied’ does not indicate that increasing

¹¹Note that when controlling for both subject and university, we are not suggesting that we are controlling for subject within university. In other words, this is not an interaction term, simply that we are controlling for both subject, and university, individually.

¹²A joint significance test was also run on all universities and subjects. This fails to reject the null hypothesis of joint insignificance.

Table 2: Logit Estimation Results

Variables	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Proportion Casual	-0.965*** (0.282)	-1.205*** (0.340)	-0.300 (0.358)	-0.783* (0.447)	-0.898*** (0.284)	-0.761*** (0.287)	-0.759*** (0.287)	-0.686** (0.297)
Proportion Fixed					0.962*** (0.278)	0.551* (0.294)	0.546* (0.298)	0.560* (0.298)
Total # students						-0.371*** (0.0825)	-0.367*** (0.0887)	-0.510*** (0.188)
# Staff						0.281*** (0.0579)	0.275*** (0.0873)	0.422* (0.249)
Russell Group							0.00923 (0.0858)	-0.0118 (0.101)
# course students								-0.0729 (0.0495)
Student-Staff ratio								0.0261 (0.0239)
Net Income								0.0409 (0.145)
Surplus:Income								0.231 (0.804)
East of England					0.185 (0.135)	0.0934 (0.136)	0.0949 (0.137)	0.0754 (0.141)
London					-0.294*** (0.0993)	-0.469*** (0.108)	-0.468*** (0.109)	-0.478*** (0.112)
North East					0.00705 (0.117)	0.0271 (0.117)	0.0246 (0.120)	0.00185 (0.121)
North West					-0.00811 (0.104)	-0.0675 (0.105)	-0.0672 (0.105)	-0.0716 (0.106)
Northern Ireland					0.103 (0.198)	0.0985 (0.198)	0.0946 (0.201)	0.101 (0.202)
Scotland					-0.0367 (0.110)	-0.149 (0.112)	-0.149 (0.112)	-0.155 (0.113)
South East					0.0426 (0.108)	-0.0772 (0.111)	-0.0755 (0.113)	-0.0912 (0.114)
South West					-0.0172 (0.100)	0.00325 (0.101)	0.00193 (0.102)	-0.00165 (0.103)
Wales					0.139 (0.136)	0.00672 (0.139)	0.00668 (0.139)	0.0376 (0.153)
West Midlands					0.0142 (0.118)	-0.0331 (0.119)	-0.0343 (0.120)	-0.0324 (0.121)
Yorkshire & The Humber					-0.164 (0.100)	-0.177* (0.101)	-0.179* (0.103)	-0.193* (0.103)
Observations	8,145	8,145	8,145	8,145	8,145	8,145	8,145	8,044
University controls	No	Yes	No	Yes	No	No	No	No
Subject controls	No	No	Yes	Yes	No	No	No	No

Note: All models are weighted using survey weights. East Midlands is the baseline region. Standard errors are robust. *** p<0.01, ** p<0.05, * p<0.1. Source: Author's calculations based on UCU and SAES data.

Table 3: Estimated Marginal Effects

Student satisfaction:	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Not at all satisfied	0.0228*** (0.00699)	0.0267*** (0.00789)	0.00692 (0.00830)	0.0171* (0.00986)	0.0210*** (0.00693)	0.0177*** (0.00686)	0.0176** (0.00687)	0.0159** (0.00706)
Not very satisfied	0.0828*** (0.0244)	0.101*** (0.0285)	0.0254 (0.0304)	0.0648* (0.0370)	0.0766*** (0.0244)	0.0648*** (0.0245)	0.0646*** (0.0246)	0.0584** (0.0254)
Fairly satisfied	0.0901*** (0.0261)	0.114*** (0.0323)	0.0281 (0.0336)	0.0743* (0.0426)	0.0840*** (0.0264)	0.0712*** (0.0267)	0.0710*** (0.0268)	0.0643** (0.0277)
Very satisfied	-0.196*** (0.0568)	-0.241*** (0.0678)	-0.0605 (0.0722)	-0.156* (0.0892)	-0.182*** (0.0572)	-0.154*** (0.0577)	-0.153*** (0.0579)	-0.139** (0.0599)
Observations	8,145	8,145	8,145	8,145	8,145	8,145	8,145	8,044
University controls	No	Yes	No	Yes	No	No	No	No
Subject controls	No	No	Yes	Yes	No	No	No	No

Note: Standard errors are robust. *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$. Source: Author's calculations based on UCU and SAES data.

the proportion of teaching by casual staff will increase student satisfaction but instead that responses switch from 'very satisfied' to just 'fairly satisfied'.

To check the robustness of our results, we estimate the above specifications on a dataset where each subject-university observation is restricted to only three staff responses in the UCU dataset (and not five). We find that the outcome is qualitatively similar, although significance is reduced and the magnitude of the effect is around 40% lower.¹³

Additionally, we estimate the same model but replace the dependent variable with 'student satisfied', a binary variable equal to 1 if the student is satisfied and zero otherwise. The results confirm the above findings: a 1 percentage point increase in the proportion of teaching by casual staff leads to a 0.12 percentage point decrease in the probability that a student will be satisfied (Annex, Table 5, column 6).

Overall, our findings suggest that increasing the proportion of teaching by casual staff leads to a reduction in student satisfaction of their experience at university. Whilst these results might seem small, it suggests that a five percentage point increase in the proportion of teaching delivered by staff employed on a casual contract leads to a 0.58 percentage point reduction in the probability that a student will be satisfied with the university experience. It is important to remember how clustered student satisfaction scores are in national rankings and the importance of such scores in third-party rankings. As a result, policymakers have an incentive to consider employment practices in order to preserve student satisfaction and thus university ranking tables.

There are a number of mechanisms which can explain our finding, although our dataset does not allow us to conclude which explanation is most likely. Firstly, students, most of whom pay £9,000 per year in tuition fees, may expect to be taught by qualified faculty members, employed on 'fair' contracts, in order to 'get their money's worth'.¹⁴ Secondly, casual teaching staff may have less time available to dedicate to preparing class materials and may also have less out-of-class contact time. Thirdly, casual staff may

¹³Full results are available on request.

¹⁴However, given the fact that students might be unaware of the contractual arrangements of those individuals delivering teaching, it is difficult to make a convincing argument here.

have less experience and receive less training, thereby resulting in lower quality.¹⁵ And, finally, casual staff may be relatively less motivated to provide high-quality teaching as there are fewer incentives to commit effort to a particular institution. Whilst these are just a few possible mechanisms to explain the results, the evidence is unable to pinpoint exactly which mechanism (or combination of mechanisms) is driving the findings. Further research may seek to investigate the driving mechanism.

6 Conclusion

Existing literature on the casualisation of teaching staff at UK HEIs has focused on the effect casual contracts had on staff wellbeing. Furthermore, the research methods in the existing literature tend to focus on case studies, perhaps stemming from a lack of data to explore such relationships. In this paper, we utilise two proprietary datasets to study the effect of teaching by casual staff on student satisfaction. We find that an increase in the proportion of teaching by casual staff results in a reduction in student satisfaction. More specifically, a one percentage point increase in proportion of teaching by casual staff leads to a 0.12 percentage point reduction in the probability that the individual will be satisfied with their time at university. This manifests itself through a decline in the probability that a student will be ‘very satisfied’, with the probability being redistributed predominantly to ‘fairly satisfied’ and ‘not very satisfied’.

Given the increasing marketisation of higher education in the UK, and the need to attract students for the financial viability of universities, high student satisfaction, as a key driver of demand, is of great importance for university policymakers. The findings of this paper would suggest that policymakers should exercise caution when considering employing teaching staff on casual contracts, as this may lead to lower student satisfaction which could have negative effects on future demand.

Recent findings from the UCU show that, in 2019, around 25 to 30% of teaching was conducted by casual staff (UCU 2019), suggesting an upward trend in the use of casual contracts over time. If the findings in this paper hold constant, then this would suggest universities which load a high proportion of teaching on casual staff will observe a decrease in student satisfaction.

¹⁵Existing research finds that part-time staff were less likely than full-time staff to experiment with their teaching or to teach potentially challenging material (AAUP 2016).

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7 Annex

7.1 List of Subject Areas

Architecture, building & planning	Languages
Biological sciences	Law
Business & administrative studies	Mass communications & documentation
Combined	Medicine & dentistry
Creative arts & design	Physical sciences
Education	Social studies
Engineering & technology	Subjects allied to medicine
Historical & philosophical studies	

7.2 List of Universities

Aberystwyth University	Manchester Metropolitan University
Anglia Ruskin University	Middlesex University
Arts University Bournemouth	Newman University
Aston University	Nottingham Trent University
Bangor University	Open University
Bath Spa University	Oxford Brookes University
Birkbeck College	Queen Margaret University, Edinburgh
Birmingham City University	Queen Mary University of London
Bournemouth University	Queen's University of Belfast
Brunel University London	Roehampton University
Canterbury Christ Church University	Royal Central School of Speech and Drama
Cardiff University	Royal Holloway and Bedford New College
City University	School of Oriental and African Studies
Coventry University	Sheffield Hallam University
De Montfort University	Southampton Solent University
Edge Hill University	Swansea University
Falmouth University	Teesside University
Glasgow Caledonian University	Trinity Laban Conservatoire of Music and Dance
Glasgow School of Art	University College Birmingham
Goldsmiths College	University College London
Harper Adams University	University for the Creative Arts
Heriot-Watt University	University of Aberdeen
Imperial College of Science, Technology and Medicine	University of Abertay Dundee
King's College London	University of Bath
Kingston University	University of Bedfordshire
Leeds Beckett University	University of Birmingham
Liverpool Hope University	University of Bolton
Liverpool John Moores University	University of Bradford
London Metropolitan University	University of Brighton
London School of Economics	University of Bristol
London South Bank University	University of Cambridge
Loughborough University	University of Central Lancashire
	University of Chester
	University of Cumbria
	University of Derby

University of Dundee
University of Durham
University of East Anglia
University of East London
University of Edinburgh
University of Essex
University of Exeter
University of Glasgow
University of Gloucestershire
University of Greenwich
University of Hertfordshire
University of Huddersfield
University of Hull
University of Keele
University of Kent
University of Lancaster
University of Leeds
University of Leicester
University of Lincoln
University of Liverpool
University of Manchester
University of Newcastle-upon-Tyne
University of Northampton
University of Northumbria at Newcastle
University of Nottingham
University of Oxford
University of Plymouth
University of Portsmouth
University of Reading
University of Salford
University of Sheffield
University of South Wales
University of Southampton
University of St Andrews
University of St Mark and St John
University of Stirling
University of Strathclyde
University of Sunderland
University of Surrey
University of Sussex
University of the Arts, London
University of the West of England, Bristol
University of Ulster
University of Wales Trinity Saint David
University of Warwick
University of Westminster
University of Winchester
University of Wolverhampton
University of Worcester
University of York
York St John University

Table 4: Logit Estimation Results - Student Satisfied

Variables	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Proportion Casual	-1.505*** (0.399)	-1.157** (0.512)	-0.476 (0.524)	-0.382 (0.665)	-1.323*** (0.404)	-1.086*** (0.417)	-1.051** (0.418)	-1.035** (0.430)
Proportion Fixed					1.081** (0.450)	0.422 (0.449)	0.345 (0.452)	0.341 (0.451)
Total # students						-0.416*** (0.119)	-0.352*** (0.128)	-0.0457 (0.281)
# Staff						0.409*** (0.0863)	0.308** (0.129)	0.0314 (0.351)
Russell Group							0.147 (0.133)	0.149 (0.154)
# course students								-0.0478 (0.0724)
Student-Staff ratio								-0.0345 (0.0338)
Net Income								-0.00636 (0.200)
Surplus:Income								0.575 (1.162)
East of England					-0.157 (0.213)	-0.239 (0.215)	-0.221 (0.216)	-0.181 (0.222)
London					-0.409*** (0.155)	-0.582*** (0.164)	0.571*** (0.164)	-0.530*** (0.168)
North East					0.174 (0.223)	0.213 (0.223)	0.177 (0.225)	0.202 (0.227)
North West					-0.142 (0.166)	-0.221 (0.166)	-0.217 (0.166)	-0.228 (0.166)
Northern Ireland					-0.0180 (0.327)	-0.0368 (0.326)	-0.0961 (0.329)	-0.112 (0.331)
Scotland					-0.165 (0.177)	-0.294 (0.179)	-0.304* (0.179)	-0.288 (0.181)
South East					-0.147 (0.175)	-0.280 (0.178)	-0.257 (0.180)	-0.245 (0.183)
South West					-0.0283 (0.171)	0.0368 (0.172)	0.0164 (0.172)	0.0420 (0.174)
Wales					-0.101 (0.210)	-0.270 (0.212)	-0.270 (0.212)	-0.274 (0.233)
West Midlands					0.0858 (0.218)	0.0413 (0.219)	0.0239 (0.220)	0.0224 (0.221)
Yorkshire & The Humber					-0.285* (0.159)	-0.302* (0.159)	-0.332** (0.163)	-0.344** (0.166)
Observations	8,145	8,065	8,145	8,065	8,145	8,145	8,145	8,044
University controls	No	Yes	No	Yes	No	No	No	No
Subject controls	No	No	Yes	Yes	No	No	No	No

Note: All models are weighted using survey weights. East Midlands is the baseline region. Standard errors are robust. The number of observations differs slightly, compared to Table 2, due to perfect multicollinearity when controlling for university. *** p<0.01, ** p<0.05, * p<0.1. Source: Author's calculations based on UCU and SAES data.

Table 5: Estimated Marginal Effects - Student Satisfied

Student satisfaction:	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Student Satisfied	-0.164*** (0.0437)	-0.119** (0.0526)	-0.0508 (0.0560)	-0.0387 (0.0672)	-0.143*** (0.0438)	-0.116*** (0.0447)	-0.113** (0.0448)	-0.111** (0.0460)
Observations	8,145	8,065	8,145	8,065	8,145	8,145	8,145	8,044
University controls	No	Yes	No	Yes	No	No	No	No
Subject controls	No	No	Yes	Yes	No	No	No	No

Note: Standard errors are robust. *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$. The number of observations differs slightly, compared to Table 3, due to perfect multicollinearity when controlling for university. Source: Author's calculations based on UCU and SAES data.