Data analysis

September **2016/28**

Graduate satisfaction with undergraduate choices

This issues paper examines the retrospective satisfaction of graduates with their higher education choices, using data from a nationwide survey of former students. This is to identify whether there is variation in the frequency with which graduates from different equality groups say they would be likely to make different choices if they were able to revisit their choice of subject, institution or qualification or to choose to do something completely different. It is found that there is substantial variation in the levels of satisfaction between different ethnic groups with some groups being much more likely to make different choices if they could choose again.

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Graduate satisfaction with undergraduate choices

To	Heads of HEFCE-funded higher education institutions
Of interest to those responsible for	Student opportunity, Admissions, Widening participation, Advice to applicants to higher education
Reference	2016/28
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Executive summary

Purpose

1. This issues paper examines the retrospective satisfaction of graduates with their higher education (HE) choices, using data from a nationwide survey of former students. This is to identify whether there is variation in the frequency with which graduates from different equality groups say they would be likely to make different choices if they were able to revisit their choice of subject, institution or qualification or to choose to do something completely different.

Key points

2. A majority of graduates are satisfied with their choices and the most common response is that they would be not at all likely to make different choices. However, a large minority of respondents say they would be either likely or very likely to choose differently. This proportion is greatest for choice of subject (32 per cent of graduates) and smallest for choice of institution (21 per cent).

3. Levels of satisfaction across ethnic groups vary in large and statistically significant ways, with black and minority ethnic graduates more likely to wish they had made different HE choices. These findings are robust to controls for entry qualifications, subject studied, institution attended, degree satisfaction, degree classification, employment outcomes, and other factors. Using regression analysis to estimate levels of satisfaction, it is found that relative to white graduates:

- the proportion of Black African graduates who say they would be likely to choose a different qualification is 18 percentage points higher, and 11 percentage points higher in the case of choosing something completely different
- the proportion of Pakistani and Bangladeshi graduates likely to choose something completely different is 14 percentage points higher
- the proportion of Indian graduates likely to choose a different qualification is 10 percentage points higher
- the proportion of Chinese graduates likely to choose a different institution is nine percentage points higher.

4. Mature graduates are on average more satisfied with their choices than young graduates, which is consistent with the expectation that mature students have a greater knowledge and understanding about what and where they want to study and are on average more constrained in their choices due to other commitments.

5. Female graduates are less likely to say they would go to a different institution, but would be more likely to choose something completely different (an estimated two percentage points). There was no difference between male and female graduates in their likelihood of choosing different subjects or qualifications.

6. The only statistically significant difference between graduates who were in receipt of Disabled Students' Allowance and those who were not is that those in receipt are estimated to be three percentage points more likely to choose a different institution.

7. Graduates from low-participation areas generally express the same levels of satisfaction with their HE choices as those from other areas once degree satisfaction and post-HE employment experiences are taken into account. The exception is that they are slightly more likely (an estimated two percentage points) to say they would choose a different qualification.

Action required

8. This document is for information only.

Introduction

9. The decisions of whether to study in higher education (HE), what subject to study and where to study are some of the most important economic choices that many people ever make. Participation in higher education typically means taking out a student loan that will be repaid over many years, while it has consequences for employment prospects and lifetime earnings. It has been shown that the earnings premium for a graduate is large (Walker and Zhu, 2008, 2011), but that graduate earnings can vary substantially across subjects and institutions (HEFCE, 2015/23; Britton et al., 2016). However, despite the importance of HE choices, little is known about how satisfied individuals are with the choices they make.

10. This issues paper addresses this by examining the retrospective satisfaction of graduates with their HE choices using data from the Destination of Leavers from Higher Education longitudinal survey ('longitudinal DLHE'). The survey asks graduates 40 months after they have graduated how likely they would be to make a different choice now. We investigate how this likelihood varies across demographic characteristics, with particular regard to the equality groups.

11. This analysis is of interest because it sheds light on where there may be insufficient information, advice and guidance for some groups of prospective students to be able to make informed decisions about their higher education participation. For example, it is likely that individuals from low-participation backgrounds will have less knowledge of the higher education and they may be less able to access advice and guidance (Greenbank, 2011). However, it is not known if this causes them to make choices with which they are eventually less satisfied.

12. The analysis also has potentially important implications for policies to maximise student success. It has been shown that student groups differ in the rates at which they drop out, achieve first and upper second class degrees, and obtain employment (HEFCE 2015/21, HEFCE 2015/23). However, the causes of these differences are not well understand and it may be that they are, in part, attributable to some groups of students making worse choices when they enter HE.

Context

13. There is a large literature that examines students' HE choices and it has been shown that these choices vary across demographic characteristics. An extensive review of this literature is given by Hemsley-Brown and Oplatka (2015), but, briefly, it has been found that choices vary according to sex (Drewes and Michael, 2006) ethnicity (Cho et al., 2008), age (Harker et al., 2001) and social background (Perna and Titus, 2004; Callender and Jackson, 2005). However, it is not known whether students with different demographic characteristics are equally satisfied with the choices they make.

14. Information-seeking behaviour and decision making inevitably depends on individual traits, but it is also known that socioeconomic and cultural backgrounds play a role, for example in determining the importance of key influencers and peer networks (Archer et al., 2007). It has been shown that the ability of potential students to access information, advice and guidance varies according to social background (Kettley and Whitehead, 2012), and it might be expected that those who are less able will be less likely to make good choices. If this is the case then those from low participation neighbourhoods are expected to be less satisfied with their HE choices. The same may also hold for black and minority ethnic (BME) students, who on average

are less likely to have family experience of the English HE sector. Conversely, it is expected that mature students should be more satisfied, as they should on average make their HE choices with more experience, for example regarding the usefulness of qualifications in the labour market. Although research has shown that male and female prospective students engage in different information-seeking behaviour (Moogan and Baron, 2010), it is not known how this impacts on the likelihood of them making better or worse choices, and so we hold no prior expectations for the relationship between sex / gender and the level of satisfaction that graduates have with their HE choices.

15. Although the primary interest of this paper is to investigate whether there are differences in the levels of satisfaction with choices across equality and diversity characteristics, it is likely that satisfaction will also be related to other factors. First, it is expected that factors which might influence an individual's choice may also affect their level of satisfaction with those choices. These factors include entry qualifications and region of domicile, as these may affect the number of higher education institutions that an individual considers applying to. Those with lower entry qualifications have fewer options, while individuals in parts of the country with less HE provision may also face more constrained choices. Similarly, a student wanting to live at the parental home during term time will also have fewer options. Finally, the type of secondary school attended might matter if those at private or selective schools receive better advice and guidance when making their choices.

16. In addition to these factors, those graduates who express more satisfaction with their HE experience are expected to have greater satisfaction with their choices, as are those who achieve higher grades. However, these factors may in part be a consequence of the choices made, as those who make better choices are more likely to engage with their course, which could lead to them being more satisfied and achieving higher marks.

17. Finally, it is expected that a graduate's satisfaction with their HE choices will be related to their post-HE employment experience. If a graduate has had difficulty obtaining employment then they are expected to be more likely to wish that they had made different choices. It is also expected that those in graduate occupations and those for whom their qualification was important in obtaining their current employment will be more satisfied. Further, if a graduate can use skills acquired during their degree programme in their current role then this may improve their satisfaction.

Data

18. The longitudinal DLHE survey is a biennial survey of former students collected by the Higher Education Statistics Agency. It is collected for a cohort of graduates 40 months after graduation and has been carried out on five occasions, starting with the cohort of students graduating in 2002-03. The analysis in this report is restricted to the graduate cohort of 2010-11, as changes to the survey questionnaire mean that it cannot be treated as a panel dataset. The survey of 2010-11 graduates is the most recent and it has the largest sample size, although this cohort entered higher education prior to the undergraduate fee increases in 2012-13 and future surveys may show differences as a result of this.

19. In total, there were 81,650 respondents to the 2010-11 longitudinal DLHE, but the analysis in this report is for English-domiciled graduates from full-time first degree programmes only, which reduces the sample to 36,090.

20. The longitudinal DLHE contains data on the respondents' personal characteristics and the course they studied. It also includes answers to a set of four questions that examine the satisfaction of graduates with their higher education choices. Graduates are asked how likely they would be to make different choices if they were able to choose again with the benefit of experience. The choice questions are:

> 'If you were now to choose whether or not to do the course leading to your qualification, how likely or unlikely is it that you would…

- 'Do a different subject?
- 'Study at a different institution?
- 'Work towards a different type of qualification?
- 'Decide to do something completely different?'

Respondents choose from five answers: 'Very likely', 'Likely', 'Not very likely', 'Not at all likely' and 'Don't know'.

21. The interpretation of the answers to the questions on subject and institution seem straight-forward, but what graduates mean when answering the other two questions is less certain. For example, those saying that they would choose a different qualification might mean a different level of qualification, or perhaps a change between a BSc and a BA. Similarly, 'something completely different' could mean a combination of the other changes or not entering HE at all. However, the latter is the intended interpretation, and the question wording was changed to the current formulation as a result of cognitive testing for the 2006-07 survey, so that this could be more clearly understood.

22. The percentages of respondents giving each answer to these questions across all 36,090 respondents to the 2010-11 survey are presented in Table 1. Overall, this shows that a large majority of graduates are satisfied with their choices and that the most common response to all questions is one of being not at all likely to choose differently. In each case, between about two thirds and three quarters of graduates say they be not very or not at all likely to make different choices.

23. However, a large minority of respondents say they would be either likely or very likely to choose differently. This proportion is greatest for subject (32 per cent) and smallest for institution (21 per cent).

Table 1: How likely respondents would be to choose differently (percentage)

	Very likely	Likely	Not very likely	Not at all	Don't know
Subject	13.8	18.2	25.4	40.7	2.0
Institution	6.4	14.3	32.3	43.5	3.6
Qualification	9.1	16.5	27.6	44.6	2.2
Something completely different	8.6	12.9	27.1	48.5	2.9

Source: Longitudinal DLHE survey 2010-11 cohort.

24. The data in Table 1 indicates that the pattern of responses to each question is broadly similar across all four questions, and it is possible that respondents will answer similarly to each. To investigate this, the correlations between answers are shown in Table 2. It can be seen that answers to three of the four questions are strongly positively correlated, but that 'Study at a different institution' is less strongly correlated with the other questions.

Table 2: Pearson correlation coefficients between questions

	Subject	Institution	Qualification	Something completely different
Subject	1.00	0.36	0.61	0.62
Institution		1.00	0.39	0.35
Qualification			1.00	0.68
Something completely different				1.00

Source: Longitudinal DLHE survey 2010-11 cohort.

25. Further investigation of the relationship between responses across questions using factor analysis suggests that a single factor explains 56 per cent of the variability across the questions. This mainly relates to the three questions on subject, qualification and choosing something completely different. A second factor exists relating to institution choice. Overall, this suggests that there may be similar motivations for responses to three questions, but that something additional matters to the decision of whether a different institution would be chosen.

26. In addition to these questions on satisfaction with choices, the longitudinal DLHE survey also contains a number of individual data items on post-HE employment experiences that are relevant to the analysis in this report, including incidences of unemployment and the type of job currently undertaken. The longitudinal DLHE has been linked to the Higher Education Statistics Agency student record to give individual additional student characteristics including region of domicile, term-time accommodation and entry qualifications.

Methodology and variables

27. The relationship between the equality and diversity characteristics and the level of satisfaction with HE choices is analysed in two ways. First, it is examined unconditionally using the raw data from the longitudinal DLHE, then it is analysed conditionally controlling for the factors discussed in paragraphs 15-18. The conditional analysis is performed using a logit regression model to investigate the likelihood of a respondent being likely or very likely to make a different choice if they could choose their undergraduate course again. The estimating equation is:

$$logit(Y_i) = \alpha + \beta_1 Demographic\ characteristics_i + \beta_2 Choice\ set_i + \beta_3 NSS_i + \beta_4 Degree\ class_i + \beta_5 Employment_i + \beta_6 Subject_i + \beta_7 Institution_i + \varepsilon_i \quad (1)$$

where Y_i is a binary categorical variable taking the value of one if graduate *i* states they would be likely or very likely to choose differently, and zero otherwise. The β terms are vectors of

coefficients for the explanatory variables described below. The constant term is given by α, and ε_i is the error term. To control for possible non-independence of the errors, these are clustered by higher education institutions (HEIs).

28. The variable **Demographic characteristics** includes terms for: sex, age, ethnicity, disability, and whether the respondent comes from a disadvantaged neighbourhood. Age is measured as a binary categorical variable based on whether the respondent entered undergraduate study as a young or mature (aged 21 years or over) student, and disability by whether they were in receipt of Disabled Students' Allowance (DSA). Disadvantage is identified using HEFCE's Participation of Local Areas (POLAR 3) methodology. This classifies each neighbourhood ward in England into a POLAR quintile, where quintile 1 has the lowest level of participation in HE and quintile 5 has the highest, and individuals are classified here as being from a low-participation neighbourhood if they come from a quintile 1 or 2 ward (that is, the 40 per cent of wards with the lowest rates of HE participation).

29. The other explanatory variables reflect the discussion above. First, there is a set of variables for factors that may have influenced a respondent's initial choice (**Choice set**). These are a graduate's entry qualification, their regional of domicile and whether they lived at the parental home during their degree. A state school marker is also included to control for the effectiveness of advice and guidance provided by a school. Of course, this will vary even within the state (and private) sector, meaning that a binary state school marker is a somewhat crude proxy for this, but data limitations do not permit a more detailed measure.

30. Next, variables are included for whether the graduate was satisfied with their degree at the time (**NSS**) and how well they did (**Degree class**). The student satisfaction term is measured using the graduate's response to question 22 of the National Student Survey (NSS), which asks for overall satisfaction with the degree course.

31. The variable **Employment** is a vector of terms to capture the impact of experiences in the labour market, all of which are taken from responses to the longitudinal DLHE. First, a binary term is included for whether the graduate has ever been unemployed for at least one month. Second, since the amount of time unemployed might matter, the total number of months unemployed since leaving HE is included as a continuous variable. Third, those unemployed at the time of the survey may have particularly strong feelings and so a term for this is also included.

32. In addition to these, a term is included for whether the graduate is in professional employment. This is measured by whether or not the respondent works in an occupation classified as 'Managers and senior officials', 'Professional occupations', or 'Associate professional and technical occupation' in the ONS Standard Occupational Classification (SOC2010). To capture the usefulness of the degree programme there are terms for how important the respondent believes their degree was in obtaining their current employment, and how frequently the respondent believes they use skills acquired during their degree programme in their current role.

33. A potential issue with the inclusion of the **NSS**, **Degree class** and **Employment** variables is that they may be endogenously determined with the level of satisfaction with an individual's choices and a causal relationship cannot be inferred. This is because a poor choice may result in a student having a poor HE experience, which could affect their satisfaction as measured by the NSS, their academic performance and, indirectly, their employment outcomes. This could bias

the estimates in the regression analysis, leading to the relationship between choice satisfaction and other variables being underestimated. In recognition of this, equation (1) is estimated with and without the **NSS**, **Degree class** and **Employment** terms, and the results of both estimations are presented.

34. Finally, since responses may vary systematically across subjects and HEIs, sets of dummy variables are included to control for the subject studied and institution attended by each graduate. The subjects are placed in 20 groupings that follow the Joint Academic Coding System version 3.0, while a total of 150 different HEIs across the UK are included in the sample.

Analysis

Unconditional analysis

35. Before analysing the regression results, we first consider the raw data. Table 3 gives the breakdown of responses across groups to the question of choosing something completely different. The largest differences in levels of satisfaction are across ethnic groups. Only 19 per cent of white graduates say they would be likely or very likely to choose something completely different, but this is much greater for graduates from minority ethnicities. For example, 36 per cent of both Black African graduates and 35 per cent of Pakistani and Bangladeshi graduates would be likely or very likely to choose something completely different.

36. With regard to the other equality and diversity characteristics, it can be seen that the responses vary little by gender and age. However, a slightly greater proportion of graduates with a disability say they would be likely or very likely choose something completely different, 24 per cent relative to 21 per cent of those not in receipt of DSA.

37. Comparing graduates from neighbourhoods with different levels of higher education participation, it can be seen that 24 per cent of graduates from low-participation wards say they would be likely or very to choose differently compared with 21 per cent from elsewhere.

38. Tables for the other three questions are presented in Annex A. The data in these tables follows a similar pattern to that observed in Table 3, with the clearest differences again being observed between white and BME students, and the latter being more likely to say they would choose differently. Most strikingly, 47 per cent of Black African graduates say they would be likely or very likely to choose a different qualification. Across all three questions, those in receipt of DSA and those from low-participation neighbourhoods are slightly more likely to say they would choose differently. Mature students are less likely to say they would choose a different subject, but otherwise there are few obvious differences according to either age or gender.

39. Of course, the raw data presented in the tables does not control for factors that are likely to affect the answers to these questions, but which may also vary systematically across these characteristics, for example employment outcomes. It is therefore necessary to control for these factors using regression analysis.

Table 3: Likelihood of choosing something completely different (percentage)

		Number of graduates	Very likely	Likely	Not very likely	Not at all likely	Don't know
Sex	Male	14,035	8.2	12.7	27.0	49.4	2.7
	Female	22,055	8.9	13.0	27.2	47.9	3.1
Age	Young	30,500	8.4	13.2	27.6	47.9	3.0
	Mature	5,595	9.8	11.3	24.5	51.6	2.8
Ethnicity	Black African	1,170	19.7	16.4	25.3	36.3	2.3
	Black Caribbean	495	12.7	16.7	23.8	42.7	4.0
	Chinese	380	7.7	19.0	31.9	36.7	4.7
	Indian	1,795	11.5	18.2	29.4	38.5	2.4
	Mixed	1,035	11.0	14.4	28.4	43.2	3.0
	Not known	485	8.9	11.0	20.7	56.4	3.1
	Other	1,520	12.5	14.7	26.0	43.9	2.9
	Pakistani/Bangladeshi	1,260	15.5	19.3	26.5	36.2	2.5
	White	27,950	7.3	11.8	27.2	50.8	3.0
Disability	In receipt of DSA	2,445	9.7	14.2	25.3	47.7	3.0
	Not in receipt of DSA	33,645	8.5	12.8	27.2	48.5	2.9
Low participation	POLAR quintiles 1-2	8,435	10.3	13.5	26.1	46.9	3.2
	POLAR quintiles 3-5	27,660	8.1	12.7	27.4	49.0	2.9

Source: Longitudinal DLHE survey 2010-11 cohort.

Regression results

40. Equation (1) was estimated for each of the four choice questions and the full results are presented in Annex B. The inclusion of the variables **NSS**, **Degree class** and **Employment** greatly increases the explanatory power of the regression, and this is the preferred specification. Discussion of the results therefore focuses on this, but it can be seen that the results are consistent across both specifications.

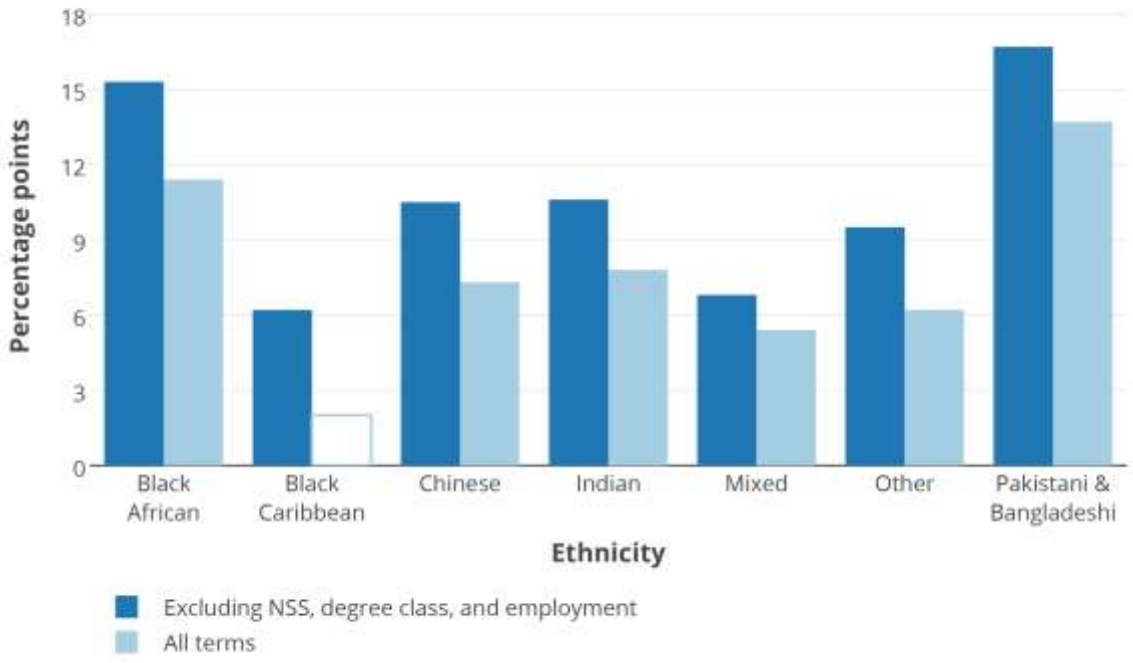
Likelihood of choosing something completely different

Demographic characteristics

41. The model results for the demographic characteristics are presented in Table 4. They are broadly in line with expectations and generally confirm the patterns seen in the unconditional analysis.

42. There are large differences across ethnic groups. In all cases except for Black Caribbean students, graduates from minority ethnicities are significantly more likely than white graduates to say that they would choose something completely different. To illustrate this, Figure 1 presents the percentage point differences of being likely or very likely to choose differently, for each ethnic group relative to white graduates. These are the average marginal effects, calculated holding everything else constant. The largest estimated effects are for Pakistani and Bangladeshi graduates, who would be 13.7 per cent more likely than white graduates to choose something completely different, and Black African graduates, at 11.4 percentage points more likely.

Figure 1: Percentage point differences in the likelihood of choosing something completely different relative to white graduates



Note: Hollowed bars indicate no statistical difference from white graduates at the 5 per cent significance level.

Table 4: Regression results

Something completely different		Excluding Degree class, NSS and Employment		All terms	
		Estimate	Standard error	Estimate	Standard error
Sex	Female	0.073**	0.036	0.132***	0.037
Age	Mature	-0.218***	0.071	- 0.120	0.079
Ethnicity	Black African	0.769***	0.065	0.621***	0.072
	Black Caribbean	0.324***	0.120	0.111	0.146
	Chinese	0.607***	0.122	0.441***	0.145
	Indian	0.575***	0.081	0.451***	0.091
	Pakistani/Bangladeshi	0.821***	0.101	0.716***	0.101
	Mixed	0.384***	0.081	0.335***	0.086
	Other	0.521***	0.075	0.359***	0.075
	Not known	0.224	0.150	0.145	0.175
Disability	In receipt of DSA	0.112*	0.063	0.033	0.067
Low participation	POLAR quintiles 1-2	0.095**	0.045	0.062	0.044
Parental home		Included		Included	
State school		Included		Included	
Entry qualification		Included		Included	
Region		Included		Included	
Degree class		–		Included	
NSS		–		Included	
Employment		–		Included	
Subjects		Included		Included	
Institutions		Included		Included	

Intercept	-1.314***	0.367	-1.039***	0.453
Number of observations	35,903		35,903	
Weighted observations	35,959.11		35,959.11	
Log likelihood	-19,502.47		-17,032.58	
Likelihood ratio	1836.77***		4939.79***	

Note: Number of observations reduced from starting sample size of 36,091 by excluding those whose region of domicile or employment history is unknown. The base case is a young, white male with no disability, coming from an area in POLAR quintiles 3-5. Standard errors clustered at an institution level.

*** = significant at the 1 per cent level, ** = 5 per cent and * = 10 per cent.

43. Female graduates would be more likely to choose something completely different and, holding all other variables constant, are two percentage points more likely to say so. This was not apparent from the raw data, but is found in both specifications of the regression model.

44. The coefficient for mature students is negatively signed, but it is not statistically significant. However, replacing this term with a continuous variable for age at start of HE course gives a negative estimated coefficient that is statistically significant at the 1 per cent level, indicating that older entrants to HE are less likely to say they would do something different.

45. Graduates from low-participation neighbourhoods are more likely to say they would choose something completely different, but this is not statistically significant once variables are included to control for degree satisfaction and experience in the labour market.

46. Table 4 shows that the difference between graduates who were in receipt of DSA and those who were not is not statistically significant once degree class, NSS response and employment experiences are taken into account. Splitting the non-DSA recipients into those with no disability and those with a self-declared disability makes no difference to the results.

47. To investigate responses further by demographic characteristic, interactions between characteristics were included in auxiliary regressions, but none of these were found to have a statistically significant effect. These interactions were between sex and low participation, sex and ethnicity, age and low participation, and low participation and ethnicity.

Other variables

48. The estimated coefficients for the other variables are presented in Annex B, although to save space the institution terms are not shown. Focusing on the estimation with all terms, it can be seen that the **Choice Set** variables have little explanatory power. Attending a state school has no effect and nor does living in the parental home. The latter is interesting since Neves and Hillman (2016) find that students living at home are less likely to be satisfied with their course, but a similar effect is not observed here. Moreover, interaction terms between ethnicity and whether or not the student lived at the parental home are not statistically significant. The region of domicile is also generally not significant, the exception being the North-East of England as graduates from there are more likely to say they would choose something completely different.

49. Entry qualifications appear to make little difference to the likelihood of a graduate saying they would choose differently. The differences between the estimated coefficients are not statistically significant for most qualification categories, although those who entered HE with the highest qualifications (four A-levels at grade A) are least likely to say they would choose differently.

50. Graduates who expressed greater levels of satisfaction when completing the NSS are, on average, less likely to say they would choose something completely different. Similarly, those who achieved higher degree classifications are also more satisfied with their choices. The estimates decrease monotonically as the degree class gets higher, so that a graduate with a first class degree is least likely to choose differently and a graduate with a third class or pass degree is most likely (9.6 percentage points more than a 2:1). The difference between an upper and lower second class degree is marked, with a graduate with a 2:2 being 4.7 percentage points more likely to choose differently than an otherwise similar graduate holding a 2:1.

51. There is a strong correlation between employment experiences after graduation and the likelihood of a graduate stating that they would choose something completely different. A respondent who has experienced a spell of unemployment since graduation lasting more than one month is 2.4 percentage points more likely to say they would choose differently. Those who are unemployed at the time of the survey, especially, are more likely (12.5 percentage points) to say they would choose differently than those in work. However, the amount of time spent unemployed does not appear to have an effect. Those employed in a professional level role are less likely to say they would choose differently, while being able to use the skills acquired during the degree programme also reduces the likelihood. Similarly, the more important the qualification is considered to have been in obtaining the respondent's current job then the lower the likelihood of choosing differently.

52. The variables for subject studied are all statistically insignificant. Many of the institution terms are significant, but omitting these from the regression makes no meaningful difference to the estimated coefficients of the other terms.

Other questions

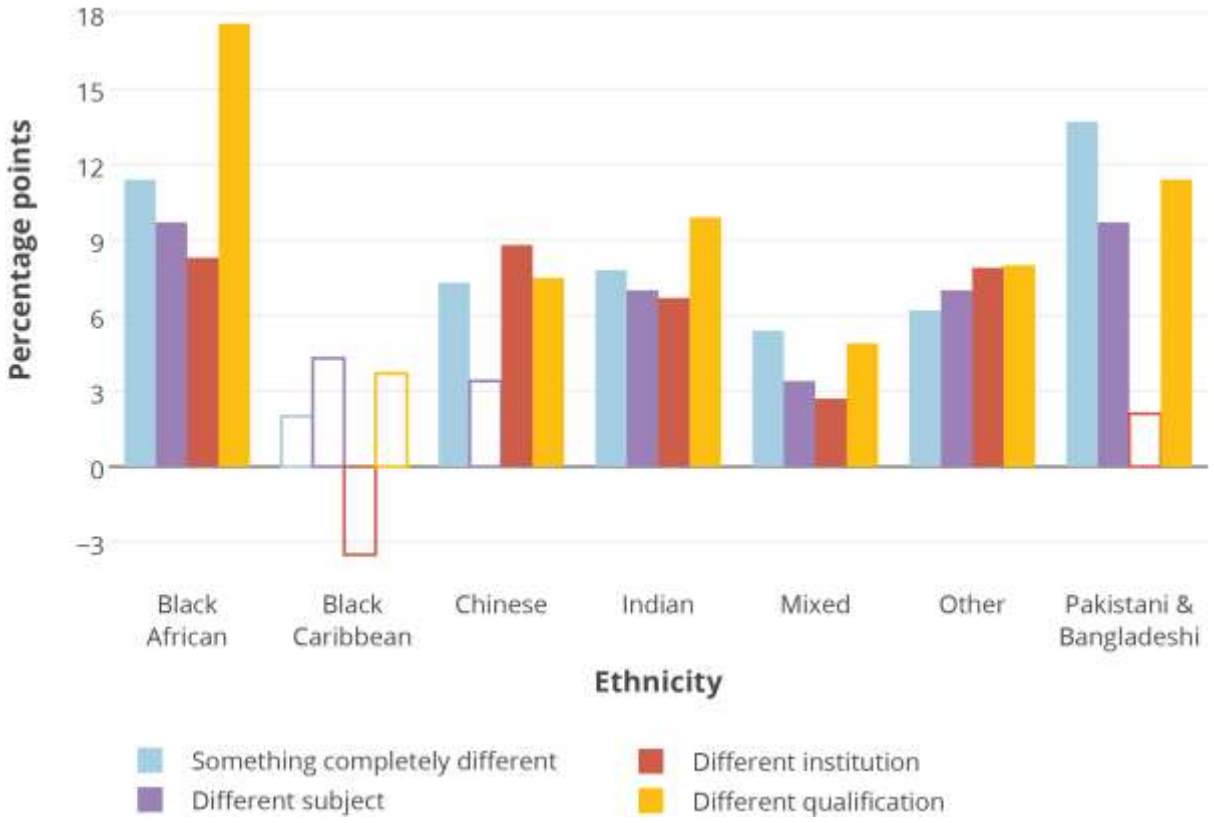
53. The regression results for the other questions are presented in Annex B. Overall, the pattern of estimates is broadly consistent across the four choice questions, although there is some variation in responses across the questions for the demographic characteristics.

54. The biggest differences continue to be seen for the ethnicity terms, with graduates from minority ethnic groups consistently being less satisfied than white graduates across all aspects of their HE choices. The percentage point differences relative to white graduates for all four questions are shown in Figure 2.

55. Black Caribbean graduates are not statistically significantly different from white graduates for any question, but all other ethnicities are significantly less satisfied with their HE choices. Black African students are most likely to say they would choose differently, being 9.7 percentage points more likely than white graduates to choose a different subject and 17.6 percentage points more likely to choose a different qualification. Pakistani and Bangladeshi graduates are also much more likely to say they would choose differently for all questions apart from choice of institution. Conversely, Chinese graduates are most likely to be dissatisfied with their institution choice (8.8 percentage points more than white graduates), while for Indian graduates it is their qualification that they are most likely to say they would choose differently (9.9 percentage points more than white graduates).

56. Female graduates are not significantly more likely to choose a different subject or qualification, but are less likely to pick a different institution, whereas they were more likely to choose something completely different. The factor analysis discussed earlier suggested that responses to the question of choosing a different institution were somewhat different from those to the other three questions. It may be that this is due to female graduates answering this question differently, although of course institutional effects are also likely to be stronger for this question.

Figure 2: Percentage point differences in the likelihood of making different HE choices relative to white graduates



Note: Hollowed bars indicate no statistical difference from white graduates at the 5 per cent significance level.

57. Mature graduates are significantly less likely to choose differently in all questions. This is consistent with the expectation that mature students have better knowledge of what they want to study prior to starting their HE course, and with evidence that shows that mature students are less likely to be geographically mobile (HEFCE, 2016/14), and hence less likely to say they would choose a different institution.

58. The proportion of graduates in receipt of DSA who are likely or very likely to choose a different institution is three percentage points higher than those who not in receipt. However, disability status does not have an impact on the likelihood of choosing either a different qualification or subject.

59. The only question for which being from a low-participation area has a statistically significant effect is whether to take a different qualification. The proportion of disadvantaged graduates who say they would be likely to choose a different qualification is 1.9 percentage points higher than for those from elsewhere, and this is significant at the 10 per cent level. Overall though, there appears to be little difference between graduates coming from areas with different levels of disadvantage.

Discussion

60. The most striking finding of this analysis is clearly the large difference seen between levels of satisfaction between white and BME graduates. However, while the analysis has demonstrated that these differences exist, it does not identify underlying causes of these differences.

61. The absence of differences between POLAR quintiles has implications for the interpretation of the differences seen between ethnic groups. It suggests that the large differences observed between ethnic groups cannot be straightforwardly interpreted as due to these groups having access to less information, advice and guidance when they make their HE choices, as if this were the case then we would expect to see similar effects for those coming from low-participation areas. Instead it suggests that there is something non-random in the decision-making of students from some ethnic minorities that leads them to make choices with which they are less satisfied. However, while it has been widely identified that cultural backgrounds influence decision-making (Diamond et al., 2014), in this case the cause is not known.

62. It has been found elsewhere that parental and family influences play a greater role in determining HE choices among BME than white students and that, related to this, BME students are more likely to be motivated by the potential economic gains and career advantages of HE participation (Connor et al., 2004). The latter suggests that employment outcomes would be more important in determining the satisfaction with HE choices of BME graduates, but as has been shown, the differences between ethnic groups persist even when accounting for experiences in the labour market.

63. It has also been found that BME students are over-represented in subjects such as computer science, medicine, dentistry and law (Connor et al., 2004). The reasons for this are not known for certain although it may be attributable to the influences above. To see whether this bias in subject choice has had an effect on satisfaction with choices, the regression model was re-estimated to include interaction terms between ethnicity and subjects. However, none of these terms was statistically significant and, as figure 2 shows, for none of the ethnic groups is the likelihood of choosing a different subject especially high relative to the other questions, so that subject choice does not explain the observed differences in satisfaction levels.

Conclusions

64. This report has investigated the satisfaction of graduates with their HE choices using data from the 2010-11 longitudinal DLHE survey that samples graduates 40 months after graduation.

65. Overall, the majority of students are satisfied with their choices, but levels of satisfaction vary across groups of graduates. There exist large differences between ethnic groups, with BME graduates being considerably more likely to say that they would make different choices if they were able to choose again. Smaller differences are seen between young and mature graduates, with mature graduates being typically happier with their choices. There are few differences in levels of satisfaction between graduates from areas with different levels of HE participation.

66. These findings potentially have implications for the provision of information, advice and guidance to BME students. However, while the results clearly indicate that many ethnic groups are less satisfied with their HE choices, the analysis does not identify the causes of this and further research would be necessary to establish these.

Annex A: Response to choice questions by graduate characteristic

Table A1: Likelihood of choosing a different subject

		Number of graduates	Very likely	Likely	Not very likely	Not at all likely	Don't know
Sex	Male	14,035	14.0	18.8	25.6	39.6	2.1
	Female	22,055	13.6	17.8	25.2	41.5	1.9
Age	Young	30,500	13.8	19.1	26.0	39.2	1.9
	Mature	5,595	13.7	13.3	21.8	49.0	2.2
Ethnicity	Black African	1,170	25.5	19.1	22.1	32.0	1.3
	Black Caribbean	495	19.2	20.4	21.8	35.7	3.0
	Chinese	380	13.5	22.2	32.5	29.8	2.1
	Indian	1,795	17.4	21.0	26.7	33.6	1.3
	Mixed	1,035	18.0	17.7	25.4	36.7	2.2
	Not known	485	14.0	13.4	23.3	45.7	3.5
	Other	1,520	17.1	21.5	23.1	36.2	2.2
	Pakistani/Bangladeshi	1,260	21.9	21.7	23.1	32.3	1.0
	White	27,950	12.2	17.6	25.7	42.5	2.0
Disability	In receipt of DSA	2,445	15.6	17.7	23.1	41.6	2.0
	Not in receipt of DSA	33,645	13.6	18.2	25.5	40.7	2.0
Low participation	POLAR quintiles 1-2	8,435	16.4	17.8	24.1	39.7	2.0
	POLAR quintiles 3-5	27,660	13.0	18.3	25.8	41.0	2.0

Source: Destination of Leavers from Higher Education longitudinal survey 2010-11 cohort. Note: ‘DSA’ = ‘Disabled Students Allowance’; ‘POLAR’ = ‘Participation of Local Areas’.

Table A2: Likelihood of choosing a different institution

		Number of graduates	Very likely	Likely	Not very likely	Not at all likely	Don't know
Sex	Male	14,035	6.5	15.7	33.9	40.2	3.8
	Female	22,055	6.3	13.4	31.2	45.7	3.4
Age	Young	30,500	6.2	14.3	32.7	43.3	3.6
	Mature	5,595	7.5	14.4	29.8	44.8	3.6
Ethnicity	Black African	1,170	13.3	19.8	30.0	33.2	3.7
	Black Caribbean	495	8.7	15.3	32.7	40.3	3.0
	Chinese	380	7.4	21.6	35.1	30.6	5.3
	Indian	1,795	8.5	18.7	33.2	36.9	2.7
	Mixed	1,035	7.5	17.1	34.5	37.3	3.6
	Not known	485	8.1	14.3	26.9	45.2	5.6
	Other	1,520	11.0	19.2	30.6	35.8	3.4
	Pakistani/Bangladeshi	1,260	9.5	17.7	32.5	36.8	3.4
	White	27,950	5.4	13.1	32.3	45.5	3.6
Disability	In receipt of DSA	2,445	7.4	16.9	29.5	42.5	3.8
	Not in receipt of DSA	33,645	6.3	14.1	32.5	43.6	3.5
Low participation	POLAR quintiles 1-2	8,435	7.2	14.5	31.6	43.3	3.5
	POLAR quintiles 3-5	27,660	6.1	14.3	32.5	43.6	3.6

Source: Destination of Leavers form Higher Education longitudinal survey 2010-11 cohort. Note: ‘DSA’ = ‘Disabled Students Allowance’; ‘POLAR’ = ‘Participation of Local Areas’.

Table A3: Likelihood of choosing a different qualification

		Number of graduates	Very likely	Likely	Not very likely	Not at all likely	Don't know
Sex	Male	14,035	8.8	16.6	28.5	43.8	2.3
	Female	22,055	9.2	16.5	27.1	45.1	2.2
Age	Young	30,500	8.7	16.5	28.3	44.3	2.2
	Mature	5,595	11.3	16.4	23.9	46.2	2.2
Ethnicity	Black African	1,170	22.9	23.7	20.2	31.1	2.1
	Black Caribbean	495	15.7	20.0	27.4	34.5	2.4
	Chinese	380	8.7	23.7	29.0	36.1	2.4
	Indian	1,795	12.3	22.4	29.7	33.9	1.7
	Mixed	1,035	12.3	17.1	28.0	41.0	1.6
	Not known	485	7.9	12.6	21.9	53.1	4.5
	Other	1,520	13.8	20.6	25.8	37.9	1.9
	Pakistani/Bangladeshi	1,260	15.5	23.4	24.1	35.3	1.7
	White	27,950	7.5	15.2	28.1	46.9	2.2
Disability	In receipt of DSA	2,445	11.2	17.1	25.3	43.8	2.5
	Not in receipt of DSA	33,645	8.9	16.5	27.8	44.6	2.2
Low participation	POLAR quintiles 1-2	8,435	11.5	17.7	26.3	42.3	2.2
	POLAR quintiles 3-5	27,660	8.3	16.2	28.0	45.3	2.2

Source: Destination of Leavers from Higher Education longitudinal survey 2010-11 cohort. Note: ‘DSA’ = ‘Disabled Students Allowance’; ‘POLAR’ = ‘Participation of Local Areas’.

Annex B: Regression results by question

NB: Throughout the following, the number of observations has been reduced from a starting sample size of 36,091 by excluding those with an unknown region of domicile, employment history or both. The base case is a young, white male with no disability, from an area in POLAR quintiles 3 to 5. He has never been unemployed for more than one month since graduation, but is not in a graduate job. His degree was helpful, but not very important, in obtaining his current job, and he uses the skills acquired during his course to some extent in his current work. He did not attend a state school and entered higher education with three Cs at A-Level. He came from the South West and did not live at his parents' home during term time. He achieved an upper second class degree.

Table B1: Likelihood of choosing something completely different

Something completely different		**Excluding Degree class, NSS and Employment**		**All terms**	
		Estimate	**Standard error**	**Estimate**	**Standard error**
Intercept		-1.314***	0.367	-1.039***	0.453
Sex	Female	0.073**	0.036	0.132***	0.037
Age	Mature	-0.218***	0.071	-0.120	0.079
Ethnicity	Black African	0.769***	0.065	0.621***	0.072
	Black Caribbean	0.324***	0.120	0.111	0.146
	Chinese	0.607***	0.122	0.441***	0.145
	Indian	0.575***	0.081	0.451***	0.091
	Mixed	0.384***	0.081	0.335***	0.086
	Not known	0.224	0.150	0.145	0.175
	Other	0.521***	0.075	0.359***	0.075

	Pakistani/Bangladeshi	0.821***	0.101	0.716***	0.101
Disability	In receipt of DSA	0.112*	0.063	0.033	0.067
Low participation	POLAR quintiles 1 and 2	0.095**	0.045	0.062	0.044
Parental home		0.095*	0.049	0.079	0.050
State school		-0.050	0.051	-0.037	0.057
Entry qualification					
A-Levels	AAAA	-0.582***	0.178	-0.349*	0.190
	AAA	-0.298*	0.159	-0.109	0.173
	AAB	-0.198	0.162	-0.073	0.169
	AAC	-0.086	0.226	-0.008	0.235
	ABB	-0.216	0.171	-0.126	0.176
	ABC	-0.325*	0.182	-0.236	0.188
	ACC	-0.078	0.243	-0.026	0.270
	BBB	-0.171	0.173	-0.176	0.180
	BBC	-0.051	0.152	-0.043	0.161
	BCC	-0.216	0.168	-0.243	0.174
Tariff points	299-999	-0.013	0.261	0.219	0.287
	441-470	0.025	0.317	0.166	0.288
	411-440	-0.830***	0.289	-0.829***	0.307
	381-410	-0.375	0.250	-0.401	0.283
	351-380	-0.277	0.250	-0.298	0.232
	321-350	-0.135	0.261	-0.117	0.264

	291-320	-0.001	0.174	-0.044	0.181
	261-290	-0.031	0.142	-0.060	0.155
	231-260	0.029	0.157	-0.036	0.161
	201-230	0.007	0.184	-0.123	0.183
	161-200	0.013	0.168	-0.195	0.179
	131-160	0.201	0.158	-0.002	0.164
	101-130	-0.014	0.265	-0.187	0.261
	1-100	0.043	0.169	-0.070	0.184
Other qualifications	Combination of Level 3 qualifications	-0.199	0.168	-0.218	0.178
	Other, equivalent to Level 3	0.102	0.186	0.004	0.201
	GNVQ/NVQ	0.133	0.289	-0.148	0.247
	Baccalaureate	0.138	0.258	0.155	0.241
	Foundation course	-0.278	0.206	-0.283	0.223
	Access course	0.133	0.170	0.036	0.184
	BTEC/ONC	0.028	0.180	-0.144	0.185
	None	-0.141	0.235	-0.331	0.251
	Other	0.104	0.207	0.023	0.222
	Unknown	-0.144	0.339	-0.310	0.338
	Postgraduate	-0.262	0.454	-0.100	0.487
	First degree	-0.230	0.188	-0.075	0.217
	Other undergraduate course	-0.027	0.157	-0.150	0.172
	Not known	-0.414	0.392	-0.623	0.408
Region	North East	0.267**	0.127	0.250**	0.118

	North West	0.102	0.118	0.047	0.119
	Yorkshire and Humber	0.026	0.109	-0.045	0.115
	East Midlands	-0.055	0.115	-0.087	0.124
	West Midlands	0.172*	0.098	0.161	0.106
	East of England	-0.136	0.092	-0.106	0.100
	London	0.004	0.092	-0.071	0.094
	South East	-0.085	0.088	-0.105	0.090
Degree class	First			-0.310***	0.053
	Lower second			0.261***	0.045
	Third/pass			0.481***	0.098
	Unclassified			0.345**	0.152
NSS	Definitely disagree			0.642***	0.144
'Satisfied overall'	Mostly disagree			0.030	0.114
	Mostly agree			-0.404***	0.076
	Definitely agree			-0.659***	0.083
	Not answered / Don't know			-0.378***	0.089
Employment	Currently unemployed			0.574***	0.105
	Have been unemployed			0.140***	0.054
	Months unemployed			0.007*	0.004
	Professionally employed			-0.118**	0.048

	Use skills -– to a great extent			-0.590***	0.057
	Use skills -– not at all			0.562***	0.055
	Use skills -– not answered / don't know			-0.139*	0.081
	Qualification – formal requirement			-0.597***	0.069
	Qualification – important			-0.376***	0.060
	Qualification – not important			0.410***	0.059
	Qualification – not answered			-0.002	0.093
Subject	Medicine and dentistry	-0.611*	0.355	-0.018	0.490
	Subjects allied to medicine	-0.165	0.298	0.382	0.376
	Biological sciences	0.010	0.305	0.155	0.383
	Veterinary sciences, agriculture and related subjects	-0.146	0.277	-0.162	0.381
	Physical sciences	0.039	0.305	0.180	0.378
	Mathematics and computer science	-0.236	0.301	-0.024	0.376
	Engineering	-0.281	0.299	0.043	0.370
	Technologies	0.468	0.314	0.519	0.393
	Architecture, building and planning	-0.106	0.319	0.132	0.391
	Social studies	0.128	0.288	0.270	0.363
	Law	0.299	0.307	0.456	0.386
	Business and administrative studies	0.101	0.301	0.246	0.377
	Mass communication and documentation	0.520*	0.302	0.459	0.373
	Linguistics, classics and related subjects	-0.059	0.313	0.039	0.392
	European languages	-0.076	0.329	0.094	0.404

	Non-European languages	-0.052	0.449	-0.038	0.531
	Historical and philosophical studies	0.245	0.318	0.261	0.397
	Creative arts and design	0.303	0.306	0.254	0.382
	Education	-0.352	0.316	0.079	0.389
Institution		Included		Included	
Number of observations		35,903		35,903	
Weighted observations		35,959.11		35,959.11	
Likelihood ratio		1,836.77***		4,939.79***	

Note: 'DSA' = 'Disabled Students Allowance'; 'NSS' = 'National Student Survey'; 'POLAR' = 'Participation of Local Areas'.

Standard errors clustered at an institution level. *** significant at the 1% ** = 5% and * = 10% level.

Table B2: Likelihood of choosing a different subject

Different subject		**Excluding Degree class, NSS and Employment**		**All terms**	
		Estimate	**Standard error**	**Estimate**	**Standard error**
Intercept		-0.461	0.311	-0.107	0.276
Sex	Female	-0.030	0.032	0.012	0.032
Age	Mature	-0.396***	0.064	-0.269***	0.069
Ethnicity	Black African	0.608***	0.072	0.464***	0.080
	Black Caribbean	0.410***	0.111	0.204*	0.122
	Chinese	0.359***	0.124	0.165	0.127

	Indian	0.473***	0.072	0.343***	0.083
	Mixed	0.237***	0.069	0.170**	0.073
	Not known	-0.003	0.128	-0.084	0.140
	Other	0.490***	0.063	0.342***	0.071
	Pakistani/Bangladeshi	0.595***	0.075	0.453***	0.087
Disability	In receipt of DSA	0.053	0.052	-0.002	0.055
Low participation	POLAR quintiles 1 and 2	0.047	0.037	0.019	0.036
Parental home		0.043	0.040	0.032	0.039
State school		-0.021	0.041	0.002	0.040
Entry qualification					
-Llevels	AAAA	-0.203	0.145	0.116	0.159
	AAA	0.020	0.148	0.258*	0.154
	AAB	-0.045	0.139	0.112	0.145
	AAC	0.250	0.177	0.398**	0.202
	ABB	0.022	0.146	0.153	0.148
	ABC	-0.137	0.174	-0.018	0.186
	ACC	-0.200	0.213	-0.165	0.220
	BBB	0.078	0.154	0.109	0.164
	BBC	0.242*	0.132	0.280**	0.142
	BCC	0.006	0.142	0.005	0.152
Tariff points	299-999	0.034	0.194	0.298	0.198
	441-470	-0.241	0.344	-0.059	0.334
	411-440	-0.723***	0.268	-0.680**	0.272

	381-410	-0.691**	0.284	-0.710**	0.308
	351-380	-0.196	0.252	-0.193	0.239
	321-350	-0.158	0.201	-0.133	0.208
	291-320	0.167	0.162	0.131	0.172
	261-290	0.124	0.154	0.105	0.160
	231-260	0.196	0.138	0.155	0.146
	201-230	0.220	0.140	0.111	0.149
	161-200	0.108	0.138	-0.085	0.144
	131-160	0.467***	0.151	0.281**	0.152
	101-130	0.144	0.241	0.025	0.227
	1-100	0.197	0.151	0.099	0.159
Other qualifications	Combination of Level 3 qualifications	-0.002	0.135	0.016	0.147
	Other, equivalent to Level 3	0.377**	0.192	0.323	0.200
	GNVQ/NVQ	0.125	0.273	-0.098	0.246
	Baccalaureate	0.216	0.227	0.296	0.232
	Foundation course	0.107	0.164	0.160	0.186
	Access course	0.388**	0.175	0.301*	0.188
	BTEC/ONC	0.275**	0.133	0.139	0.139
	None	0.163	0.264	0.039	0.266
	Other	0.306*	0.173	0.249	0.183
	Unknown	0.090	0.246	-0.003	0.237
	Postgraduate	-1.080***	0.308	-0.972***	0.328
	First degree	-0.441**	0.172	-0.324	0.197
	Other undergraduate course	0.203	0.137	0.074	0.146

	Not known	-0.124	0.364	-0.371	0.398
Region	North East	0.159	0.104	0.127	0.104
	North West	0.061	0.100	0.003	0.098
	Yorkshire and Humber	0.163*	0.094	0.116	0.097
	East Midlands	-0.015	0.083	-0.041	0.087
	West Midlands	0.070	0.097	0.047	0.103
	East of England	-0.047	0.090	-0.032	0.093
	London	-0.010	0.087	-0.088	0.090
	South East	0.026	0.086	0.013	0.089
Degree class	First			-0.383***	0.043
	Lower second			0.354***	0.040
	Third/pass			0.512***	0.084
	Unclassified			0.255	0.177
NSS	Definitely disagree			0.526***	0.162
‘Satisfied overall’	Mostly disagree			0.173*	0.103
	Mostly agree			-0.345***	0.069
	Definitely agree			-0.783***	0.073
	Not answered / Don’t know			-0.294***	0.074
Employment	Currently unemployed			0.349***	0.106
	Have been unemployed			0.215***	0.038
	Months unemployed			0.000	0.004

	Professionally employed			-0.054	0.051
	Use skills -– to a great extent			-0.583***	0.051
	Use skills -– not at all			0.514***	0.056
	Use skills -– not answered / don't know			-0.246***	0.070
	Qualification – formal requirement			-0.492***	0.055
	Qualification – important			-0.279***	0.048
	Qualification – not important			0.228***	0.055
	Qualification – not answered			-0.049	0.091
Subject	Medicine and dentistry	-1.447***	0.332	-1.004***	0.305
	Subjects allied to medicine	-0.685**	0.316	-0.303	0.288
	Biological sciences	-0.282	0.303	-0.200	0.275
	Veterinary sciences, agriculture and related subjects	-0.852**	0.380	-0.927***	0.315
	Physical sciences	-0.310	0.321	-0.227	0.288
	Mathematics and computer science	-0.563*	0.310	-0.438	0.287
	Engineering	-0.735**	0.319	-0.538*	0.294
	Technologies	-0.086	0.336	-0.121	0.321
	Architecture, building and planning	-0.849*	0.306	-0.751***	0.266
	Social studies	-0.239	0.310	-0.195	0.283
	Law	-0.393	0.333	-0.362	0.302
	Business and administrative studies	-0.416	0.313	-0.379	0.286
	Mass communication and documentation	0.323	0.305	0.228	0.283

	Linguistics, classics and related subjects	-0.448	0.308	-0.406	0.274
	European languages	-0.486	0.313	-0.393	0.281
	Non-European languages	-0.312	0.416	-0.344	0.418
	Historical and philosophical studies	-0.372	0.315	-0.407	0.296
	Creative arts and design	-0.154	0.293	-0.222	0.263
	Education	-0.647*	0.341	-0.350	0.317
Institution		Included		Included	
Number of observations		35,903		35,903	
Weighted observations		35,959.11		35,959.11	
Likelihood ratio		1,813.78***		5,104.84***	

Note: 'DSA' = 'Disabled Students Allowance'; 'NSS' = 'National Student Survey'; 'POLAR' = 'Participation of Local Areas'.

Standard errors clustered at an institution level. *** significant at the 1% ** = 5% and * = 10% level.

Table B3: Likelihood of choosing a different institution

Different institution		**Excluding Degree class, NSS and Employment**		**All terms**	
		Estimate	**Standard error**	**Estimate**	**Standard error**
Intercept		-0.158	0.376	0.279	0.392
Sex	Female	-0.135***	0.038	-0.108***	0.039
Age	Mature	-0.295***	0.067	-0.265***	0.070
Ethnicity	Black African	0.488***	0.079	0.444***	0.081

	Black Caribbean	-0.093	0.110	-0.204*	0.119
	Chinese	0.624***	0.173	0.521***	0.190
	Indian	0.450***	0.079	0.386***	0.083
	Mixed	0.216***	0.079	0.171**	0.080
	Not known	0.184	0.140	0.130	0.140
	Other	0.524***	0.083	0.436***	0.085
	Pakistani/Bangladeshi	0.199**	0.095	0.119	0.092
Disability	In receipt of DSA	0.184***	0.062	0.137**	0.066
Low participation	POLAR quintiles 1 and 2	-0.031	0.050	-0.053	0.051
Parental home		0.161***	0.061	0.165***	0.062
State school		-0.112***	0.038	-0.097**	0.039
Entry qualification					
A -Levels	AAAA	0.346**	0.172	0.409**	0.182
	AAA	0.321**	0.152	0.353**	0.155
	AAB	0.135	0.152	0.139	0.153
	AAC	0.318	0.240	0.308	0.243
	ABB	0.167	0.145	0.156	0.143
	ABC	0.233	0.157	0.249	0.164
	ACC	0.509**	0.214	0.546**	0.226
	BBB	0.398**	0.169	0.358**	0.173
	BBC	0.329***	0.128	0.291**	0.129
	BCC	0.107	0.133	0.081	0.138
Tariff points	299-999	-0.245	0.212	-0.238	0.217

	441-470	0.156	0.353	0.149	0.359
	411-440	0.040	0.333	-0.002	0.325
	381-410	0.554**	0.282	0.557**	0.269
	351-380	0.386*	0.215	0.348	0.218
	321-350	0.298*	0.180	0.277	0.186
	291-320	0.233	0.186	0.185	0.196
	261-290	0.127	0.160	0.059	0.162
	231-260	0.221	0.150	0.165	0.152
	201-230	0.258*	0.155	0.179	0.157
	161-200	0.056	0.177	-0.071	0.178
	131-160	0.302*	0.175	0.143	0.171
	101-130	-0.027	0.213	-0.156	0.215
	1-100	0.212	0.169	0.140	0.172
Other qualifications	Combination of Level 3 qualifications	0.231	0.152	0.180	0.155
	Other, equivalent to Level 3	0.226	0.175	0.158	0.181
	GNVQ/NVQ	0.513	0.363	0.353	0.368
	Baccalaureate	0.635**	0.258	0.576**	0.245
	Foundation course	0.151	0.188	0.169	0.199
	Access course	0.075	0.171	-0.022	0.174
	BTEC/ONC	0.201	0.156	0.104	0.148
	None	0.255	0.239	0.190	0.249
	Other	0.124	0.179	0.086	0.181
	Unknown	0.632**	0.300	0.551*	0.299
	Postgraduate	0.708**	0.321	0.710**	0.325

	First degree	0.273	0.192	0.312	0.197
	Other undergraduate course	0.228	0.166	0.135	0.164
	Not known	0.061	0.427	-0.027	0.431
Region	North East	-0.164	0.132	-0.207	0.133
	North West	-0.156	0.097	-0.186*	0.095
	Yorkshire and Humber	-0.232**	0.104	-0.278***	0.106
	East Midlands	-0.090	0.093	-0.109	0.094
	West Midlands	-0.214**	0.088	-0.229***	0.087
	East of England	-0.203**	0.093	-0.186**	0.093
	London	-0.198**	0.096	-0.254***	0.096
	South East	-0.124	0.095	-0.123	0.094
Degree class	First			-0.023	0.051
	Lower second			0.120***	0.039
	Third/pass			0.175*	0.093
	Unclassified			0.228	0.156
NSS	Definitely disagree			0.584***	0.147
'Satisfied overall'	Mostly disagree			0.195**	0.097
	Mostly agree			-0.633***	0.075
	Definitely agree			-1.066***	0.076
	Not answered / Don't know			-0.559***	0.079

Employment	Currently unemployed			0.146	0.138
	Have been unemployed			0.181***	0.051
	Months unemployed			0.006	0.005
	Professionally employed			0.161***	0.051
	Use skills -– to a great extent			-0.273***	0.047
	Use skills -– not at all			0.436***	0.061
	Use skills -– not answered / don't know			-0.012	0.081
	Qualification – formal requirement			-0.162***	0.059
	Qualification – important			-0.177***	0.057
	Qualification – not important			0.019	0.064
	Qualification – not answered			0.106	0.096
Subject	Medicine and dentistry	-0.188	0.345	-0.045	0.416
	Subjects allied to medicine	-0.433	0.335	-0.274	0.339
	Biological sciences	-0.322	0.327	-0.280	0.334
	Veterinary sciences, agriculture and related subjects	-0.309	0.339	-0.331	0.352
	Physical sciences	-0.276	0.338	-0.267	0.346
	Mathematics and computer science	-0.425	0.332	-0.402	0.341
	Engineering	-0.172	0.331	-0.106	0.336
	Technologies	-0.022	0.357	-0.109	0.363
	Architecture, building and planning	-0.387	0.346	-0.417	0.349
	Social studies	-0.248	0.335	-0.240	0.339

	Law	-0.047	0.333	-0.016	0.344
	Business and administrative studies	-0.392	0.341	-0.392	0.349
	Mass communication and documentation	0.067	0.347	-0.086	0.350
	Linguistics, classics and related subjects	-0.449	0.335	-0.389	0.335
	European languages	-0.458	0.362	-0.415	0.365
	Non-European languages	-0.199	0.690	-0.213	0.698
	Historical and philosophical studies	-0.535	0.339	-0.509	0.346
	Creative arts and design	-0.005	0.347	-0.092	0.353
	Education	-1.022***	0.340	-0.919***	0.344
Institution		Included		Included	
Number of observations		35,903		35,903	
Weighted observations		35,959.11		35,959.11	
Likelihood ratio		2,734.13***		4,138.33***	

Note: ‘DSA’ = ‘Disabled Students Allowance’; ‘NSS’ = ‘National Student Survey’; ‘POLAR’ = ‘Participation of Local Areas’.

Standard errors clustered at an institution level. *** significant at the 1% ** = 5% and * = 10% level.

Table B4: Likelihood of choosing a different qualification

Different qualification	**Excluding Degree class, NSS and Employment**		**All terms**	
	Estimate	**Standard error**	**Estimate**	**Standard error**
Intercept	-0.831***	0.314	-0.539	0.352

Sex	Female	-0.043	0.036	0.003	0.037
Age	Mature	-0.259***	0.068	-0.144*	0.078
Ethnicity	Black African	0.994***	0.072	0.845***	0.068
	Black Caribbean	0.392***	0.109	0.182	0.124
	Chinese	0.589***	0.116	0.414***	0.124
	Indian	0.646***	0.066	0.518***	0.073
	Mixed	0.335***	0.077	0.274***	0.082
	Not known	0.012	0.149	-0.070	0.164
	Other	0.578***	0.082	0.417***	0.083
	Pakistani/Bangladeshi	0.700***	0.090	0.552***	0.088
Disability	In receipt of DSA	0.132**	0.058	0.066	0.061
Low participation	POLAR quintiles 1 and 2	0.105**	0.045	0.080*	0.045
Parental home		0.073	0.047	0.065	0.048
State school		-0.009	0.046	0.011	0.049
Entry qualification					
A -Levels	AAAA	-0.577***	0.158	-0.318**	0.162
	AAA	-0.279**	0.142	-0.0710	0.154
	AAB	-0.145	0.147	-0.005	0.155
	AAC	-0.058	0.191	0.048	0.208
	ABB	-0.119	0.141	-0.005	0.148
	ABC	-0.104	0.169	0.006	0.181
	ACC	-0.112	0.218	-0.080	0.235

	BBB	-0.192	0.141	-0.174	0.155
	BBC	0.092	0.122	0.119	0.131
	BCC	-0.054	0.126	-0.063	0.130
Tariff points	299-999	-0.050	0.233	0.163	0.240
	441-470	-0.068	0.315	0.069	0.279
	411-440	-0.241	0.294	-0.203	0.309
	381-410	-0.562**	0.268	-0.587**	0.285
	351-380	-0.251	0.237	-0.242	0.232
	321-350	0.134	0.189	0.165	0.188
	291-320	0.017	0.166	-0.026	0.177
	261-290	0.098	0.147	0.077	0.149
	231-260	0.188	0.128	0.141	0.128
	201-230	0.180	0.154	0.060	0.160
	161-200	0.202	0.145	0.023	0.151
	131-160	0.226	0.156	0.022	0.170
	101-130	0.216	0.224	0.079	0.216
	1-100	0.232	0.186	0.129	0.196
Other qualifications	Combination of Level 3 qualifications	-0.057	0.150	-0.057	0.159
	Other, equivalent to Level 3	0.406**	0.162	0.328**	0.164
	GNVQ/NVQ	0.325	0.263	0.109	0.230
	Baccalaureate	0.039	0.236	0.072	0.232
	Foundation course	0.042	0.184	0.059	0.198
	Access course	0.388**	0.174	0.294*	0.175
	BTEC/ONC	0.316**	0.143	0.167	0.140

	None	0.137	0.214	-0.002	0.237
	Other	0.320*	0.181	0.237	0.192
	Unknown	0.199	0.231	0.078	0.269
	Postgraduate	-0.881*	0.351	-0.778**	0.351
	First degree	-0.198	0.169	-0.080	0.193
	Other undergraduate course	0.296**	0.133	0.169	0.138
	Not known	-0.213	0.454	-0.491	0.500
Region	North East	0.373***	0.131	0.365***	0.116
	North West	0.082	0.099	0.033	0.095
	Yorkshire and Humber	0.060	0.109	0.008	0.109
	East Midlands	0.054	0.097	0.039	0.100
	West Midlands	0.101	0.110	0.083	0.113
	East of England	-0.010	0.095	0.019	0.097
	London	-0.007	0.097	-0.075	0.096
	South East	0.001	0.095	-0.009	0.095
Degree class	First			-0.314***	0.042
	Lower second			0.332***	0.039
	Third/pass			0.511***	0.090
	Unclassified			0.354**	0.148
NSS	Definitely disagree			0.256**	0.122
‘Satisfied overall’	Mostly disagree			0.057	0.100
	Mostly agree			-0.270***	0.074

	Definitely agree			-0.536***	0.077
	Not answered / Don't know			-0.202**	0.080
Employment	Currently unemployed			0.381***	0.116
	Have been unemployed			0.215***	0.049
	Months unemployed			0.005	0.004
	Professionally employed			-0.158***	0.053
	Use skills -– to a great extent			-0.439***	0.054
	Use skills -– not at all			0.483***	0.052
	Use skills–- not answered / don't know			-0.093	0.082
	Qualification – formal requirement			-0.564***	0.055
	Qualification – important			-0.323***	0.050
	Qualification – not important			0.135**	0.058
	Qualification – not answered			-0.188*	0.102
Subject	Medicine and dentistry	-1.199***	0.307	-0.778**	0.392
	Subjects allied to medicine	-0.520**	0.256	-0.109	0.287
	Biological sciences	-0.286	0.257	-0.206	0.289
	Veterinary sciences, agriculture and related subjects	-0.664**	0.301	-0.719**	0.343
	Physical sciences	-0.403	0.266	-0.335	0.289
	Mathematics and computer science	-0.740***	0.262	-0.615**	0.297
	Engineering	-0.650**	0.260	-0.420	0.290

	Technologies	-0.206	0.285	-0.228	0.318
	Architecture, building and planning	-0.842***	0.290	-0.696**	0.323
	Social studies	-0.400	0.256	-0.341	0.283
	Law	-0.390	0.266	-0.349	0.296
	Business and administrative studies	-0.483*	0.265	-0.431	0.297
	Mass communication and documentation	-0.067	0.263	-0.185	0.292
	Linguistics, classics and related subjects	-0.393	0.263	-0.353	0.292
	European languages	-0.582**	0.295	-0.499	0.321
	Non-European languages	-0.828**	0.362	-0.899**	0.396
	Historical and philosophical studies	-0.320	0.265	-0.371	0.297
	Creative arts and design	-0.178	0.259	-0.250	0.289
	Education	-0.624	0.265	-0.309	0.287
Institution		Included		Included	
Number of observations		35,903		35,903	
Weighted observations		35,959.11		35,959.11	
Likelihood ratio		2,335.90***		4,725.83***	

Note: ‘DSA’ = ‘Disabled Students Allowance’; ‘NSS’ = ‘National Student Survey’; ‘POLAR’ = ‘Participation of Local Areas’.

Standard errors clustered at an institution level. *** significant at the 1% ** = 5% and * = 10% level.

Annex C: References

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Annex D: Abbreviations

BME	Black and minority ethnic
DLHE	Destination of Leavers from Higher Education
DSA	Disabled Students Allowance
HE	Higher education
HEI	Higher education institution
HEIFES	Higher Education in Further Education: Students Survey
NSS	National Student Survey
POLAR	Participation of Local Areas