Update of data analysis of unconditional offers

Annexes

To be read in conjunction with OfS 2019.46

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Contents

These annexes should be read alongside the report 'Update to data analysis of unconditional offers' (OfS 2019.46), available at www.officeforstudents.org.uk/publications/data-analysis-of-unconditional-offers-update/.

Annex A: Number and proportion of UCAS applicants entering higher education

1. Table A1 shows the number and proportion of students placed through different routes who were tracked using personal identifiers in the higher education student records. There are more opportunities to find applicants placed in earlier years in later years of the data. All tracking methods are dependent on the quality of the personal data used for matching, and therefore some of those not identified in higher education could be unmatched for data quality reasons. Those shown as not placed in UCAS, but found in higher education in the same year, could have been placed at higher education providers not recruited through the UCAS undergraduate scheme, such as conservatoires.

Table A1: Number and proportion of English 18-year-old UCAS applicants entering OfS-registered higher education providers

		2013		2014		2015		2016		2017	
		Students	%	Students	%	Students	%	Students	%	Students	%
Conditional offer route (with firm or insurance reply in June)	At same provider in same year	134,445	96.7	133,315	97.2	132,585	96.8	128,365	96.7	121,365	96.7
	At same provider in later year	395	0.3	350	0.3	360	0.3	215	0.2	N/A	N/A
	At different provider in same year	610	0.4	365	0.3	485	0.4	485	0.4	455	0.4
	At different provider in later year	785	0.6	670	0.5	700	0.5	570	0.4	N/A	N/A
	Entered in earlier year	0	0	0	0	5	0	5	0	0	0
	Not identified in higher education	2,815	2	2,470	1.8	2,905	2.1	3,125	2.4	3,620	2.9
Unconditional offer route (with firm or insurance reply in June)	At same provider in same year	1,020	91.5	4,790	96.8	12,165	97.1	16,610	96.4	24,025	96.9
	At same provider in later year	5	0.5	5	0.1	15	0.1	30	0.2	N/A	N/A
	At different provider in same year	10	1.1	20	0.4	20	0.2	45	0.2	45	0.2
	At different provider in later year	15	1.5	25	0.5	65	0.5	70	0.4	N/A	N/A
	Entered in earlier year	0	0	0	0	0	0	0	0	5	0
	Not identified in higher education	60	5.4	105	2.1	265	2.1	475	2.8	725	2.9
Other UCAS route (e.g. clearing) - includes offers not firm or insurance in June	At same provider in same year	21,695	94.6	23,705	95.5	25,305	95.5	26,245	95.5	27,855	95.8
	At same provider in later year	105	0.5	95	0.4	90	0.3	85	0.3	N/A	N/A
	At different provider in same year	175	0.8	130	0.5	170	0.6	155	0.6	155	0.5
	At different provider in later year	300	1.3	245	1	245	0.9	245	0.9	N/A	N/A
	Entered in earlier year	0	0	0	0	5	0	0	0	5	0
	Not identified in higher education	670	2.9	630	2.5	675	2.5	755	2.8	1,055	3.6
In UCAS, not placed	Entered higher education in same year	1,655	100	1,710	100	1,875	100	1,890	100	2,160	100

Annex B: Continuation rates

1. Table B1 shows the number of entrants in 2015-16 and 2016-17 combined, and the proportion who did not continue into their second year of study (continuation rate) for different entry qualification profiles predicted at the time of application.

2. The number of entrants and continuation rates are shown for entrants who came through three different UCAS routes: conditional offers, unconditional offers, and other UCAS routes for applicants to the main scheme. The conditional or unconditional offers may have attracted a firm or insurance reply from the applicant.

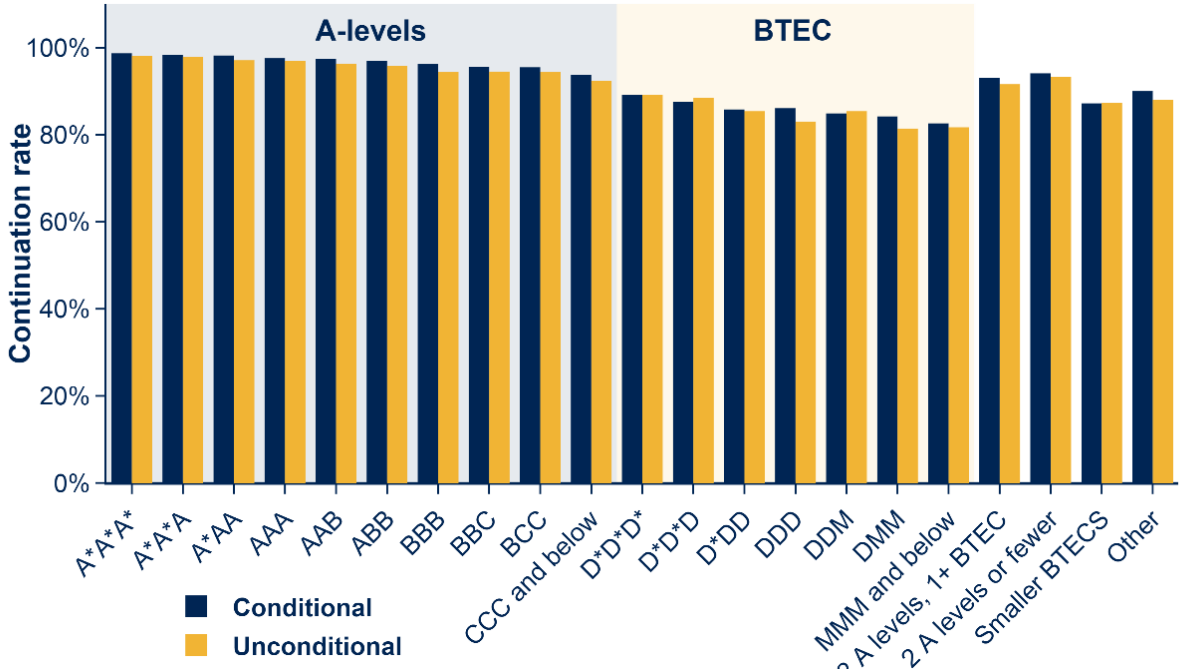
3. All entrant numbers are rounded to the nearest five. Totals are calculated from unrounded numbers; therefore some totals may differ from the sum of the rounded numbers reported. Continuation rates are calculated from unrounded numbers.

Table B1: Number of entrants and their continuation rates by entry route, and predicted entry qualification type and level, for 18-year-old students starting courses at the same provider in the same year that they were placed through UCAS (2015-16 and 2016-17 entrants combined)

Predicted entry qualification type and grade profile	Number of entrants				Continuation rate (at least 100 entrants)			
	Conditional offer	Unconditional offer	Other UCAS route (June deadline applicant)	All	Conditional offer	Unconditional offer	Other UCAS route (early applicant)	All
A level: A*A*A*	15,630	415	510	**16,560**	98.7%	98.1%	97.5%	**98.6%**
A level: A*A*A	13,045	895	1,140	**15,085**	98.3%	97.9%	96.7%	**98.2%**
A level: A*AA	17,855	2,200	2,415	**22,470**	98.2%	97.1%	97.3%	**98.0%**
A level: AAA	24,235	3,505	4,240	**31,980**	97.6%	97.0%	96.3%	**97.4%**
A level: AAB	25,200	2,280	5,375	**32,855**	97.4%	96.3%	96.2%	**97.1%**
A level: ABB	24,325	3,015	5,955	**33,290**	97.0%	95.8%	95.6%	**96.6%**
A level: BBB	20,505	2,780	4,930	**28,210**	96.2%	94.4%	95.1%	**95.8%**
A level: BBC	16,305	1,640	3,720	**21,665**	95.6%	94.5%	94.1%	**95.2%**
A level: BCC	11,870	660	2,710	**15,240**	95.5%	94.4%	93.7%	**95.2%**
A level: CCC and below	10,955	550	3,130	**14,635**	93.7%	92.4%	92.5%	**93.4%**

Predicted entry qualification type and grade profile	Number of entrants				Continuation rate (at least 100 entrants)			
	Conditional offer	Unconditional offer	Other UCAS route (June deadline applicant)	All	Conditional offer	Unconditional offer	Other UCAS route (early applicant)	All
BTEC: D*D*D*	5,560	1,035	575	**7,170**	89.1%	89.1%	86.1%	**88.8%**
BTEC: D*D*D	2,340	435	270	**3,045**	87.5%	88.5%	85.7%	**87.5%**
BTEC: D*DD	2,500	495	335	**3,325**	85.8%	85.4%	82.3%	**85.4%**
BTEC: DDD	4,920	1,015	670	**6,605**	86.1%	83.0%	84.7%	**85.5%**
BTEC: DDM	4,470	975	625	**6,070**	84.9%	85.4%	82.0%	**84.7%**
BTEC: DMM	3,640	285	580	**4,505**	84.2%	81.4%	81.0%	**83.6%**
BTEC: MMM and below	3,480	165	775	**4,420**	82.6%	81.7%	79.2%	**81.9%**
2 A levels, 1+ BTEC	10,730	1,615	1,540	**13,885**	93.1%	91.6%	90.7%	**92.7%**
2 A levels or fewer	10,100	850	2,295	**13,250**	94.1%	93.3%	91.0%	**93.5%**
BTECs of size 2 grades or fewer	15,435	1,825	2,440	**19,695**	87.2%	87.3%	86.6%	**87.1%**
OTHER	16,830	2,000	2,905	**21,735**	90.0%	88.0%	85.7%	**89.2%**
All	**259,925**	**28,625**	**47,135**	**335,685**	**94.5%**	**92.9%**	**92.9%**	**94.2%**

Figure B1: Continuation rates for different qualification types and levels by type of offer



Annex C: Definitions

Variable definitions

1. The variables used are all calculated from variables available in the UCAS application data, on the Education and Skills Funding Agency's (ESFA's) individualised learner record (ILR) or the Higher Education Statistics Authority's (HESA's) student record or alternative provider (AP) student record. The Index of Multiple Deprivation (IMD) 2015 quintiles are produced by the Ministry of Housing, Communities and Local Government[1] and are added to the UCAS, ILR, HESA student and AP student records.

Disability

2. Disability information is only used from the ILR and HESA student and AP student records. Disability is self-reported by students at the point of starting their course. Full details can be found in the OfS core algorithms[2] document under the variable BSMONDISABLETYPE.

Ethnicity

3. Ethnicity information is taken from the ILR and HESA student and AP student records. The data is collected differently across the three agencies and so a new grouping that covers the different levels of collection has been created. Table A1 below gives the details of the variables used and the codes included in each of the 18 ethnicity groups. We considered splitting the white ethnic group but found that there were too few (around 100 entrants) in this data to separate in the model.

Table C1: Ethnicity definitions

Ethnic group	ILR code[3]	HESA code[4]
Asian or Asian British – Bangladeshi	41	33
Asian or Asian British – Chinese	42	34
Asian or Asian British – Indian	39	31
Asian or Asian British – Pakistani	40	32
Asian or Asian British – Other	43	39
Black or Black British – African	44	22
Black or Black British – Caribbean	45	21
Black or Black British – Other	46	29
Mixed – white and Asian	37	43
Mixed – white and black African	36	42
Mixed – white and black Caribbean	35	41

[1] See https://www.gov.uk/government/statistics/english-indices-of-deprivation-2015

[2] Available at www.officeforstudents.org.uk/data-and-analysis/access-and-participation-data-dashboard/guide-to-the-access-and-participation-data-resources/

[3] See https://www.gov.uk/government/publications/ilr-specification-validation-rules-and-appendices-2017-to-2018

[4] See https://www.hesa.ac.uk/collection/c16051/a/ethnic and https://www.hesa.ac.uk/collection/c15051/a/ethnic

Ethnic group	ILR code[3]	HESA code[4]
Mixed – Other	38	49
White	31,32,33,34	10,11,12, 13, 14,15,19
Other ethnic group	47, 98	50, 80
Unknown or refused	99	98, 90

IMD (2015)

4. The Index of Multiple Deprivation (IMD) 2015 is a measure of levels of deprivation for small areas within England. It is calculated at lower-layer super output area (LSOA) level and uses a number of different measures to determine levels of deprivation. It is produced by the Ministry of Housing, Communities and Local Government[5]. In our analysis, we group areas into IMD quintiles, where the most deprived areas are in quintile 1 and the least deprived are in quintile 5.

Local or distance learner

5. Local or distance learner is defined by comparing home travel to work area with study travel to work area, which are calculated from home postcode and study postcode respectively. Full details can be found in the OfS core algorithms[6] document under the variable B3MONLOCAL.

POLAR4

6. The participation of local areas (POLAR) [7] classification groups areas across the UK based on the proportion of young people who participate in higher education. It looks at how likely young people are to participate in higher education across the UK and shows how this varies by area. POLAR classifies local areas into five groups - or quintiles - based on the proportion of 18-year-olds who enter higher education aged 18 or 19 years old. Quintile one shows the lowest rate of participation. Quintile five shows the highest rate of participation. In England it is calculated at middle-layer super output area (MSOA).

Sex

7. Sex is reported as either male or female. Very few records (under 10 in this data) show a response of 'other' or are recorded as unknown. To avoid having a group that is too small to use, responses other than male or female are not used in the modelling. There were fewer than 10 students in this category.

[5] See https://www.gov.uk/government/statistics/english-indices-of-deprivation-2015

[6] Available at www.officeforstudents.org.uk/data-and-analysis/access-and-participation-data-dashboard/guide-to-the-access-and-participation-data-resources/

[7] For more details of the POLAR measure, see https://www.officeforstudents.org.uk/data-and-analysis/young-participation-by-area/

Subject

8. Subject information is only used from the ILR and HESA student and AP student records. Subject is defined by the mapping[8] of the B3MONJACS code (see OfS core algorithms[9] document) to the Common Aggregation Hierarchy level 1 code.

Level of study

9. This is sourced from the ILR and HESA student and AP student records. Full details can be found in the OfS core algorithms document under the variable BSMONLEVEL.

Predicted entry qualification profiles

10. These are sourced from UCAS application data. OfS received two variables, one with predicted A-level grades and one with predicted BTEC grades. The qualifications profiles are a combination of information of these. In Table A2 only grade profiles with 200 or more entrants in the data used for the modelling are shown. Note that three predicted A-level grades equivalent to DDD or below are grouped in the 2 A-levels or fewer category, there were around 800 entrants.

Table C2: Predicted entry profiles for larger (200 entrants or more) predicted grade profiles

Predicted entry qualifications	Top three predicted A-level grades	Predicted BTEC grades
A-level: A*A*A* (ref)	A*A*A*	
A-level: A*A*A	A*A*A	
A-level: A*AA	A*AA, A*A*B	
A-level: AAA	AAA, A*AB	
A-level: AAB	AAB, A*BB, A*AC	
A-level: ABB	ABB, AAC, A*BC	
A-level: BBB	BBB, ABC	
A-level: BBC	BBC, ACC, ABD	
A-level: BCC	BCC, BBD, ACD	
A-level: CCC and below	CCC, BCD, CCD, CDD, BDD, CCE, BCE	
BTEC: D*D*D*		D*D*D*
BTEC: D*D*D		D*D*D
BTEC: D*DD		D*DD
BTEC: DDD		DDD
BTEC: DDM		DDM
BTEC: DMM		DMM

[8] See https://www.hesa.ac.uk/innovation/hecos

[9] Available at www.officeforstudents.org.uk/data-and-analysis/access-and-participation-data-dashboard/guide-to-the-access-and-participation-data-resources/

Predicted entry qualifications	Top three predicted A-level grades	Predicted BTEC grades
BTEC: MMM and below		MMM, MMP,MPP, PPP
2 A-levels, 1+ BTEC	AA	D*
	AB	D*, D
	AC	D*, D
	BB	D*, D
	BC	D*, D, M
	CC	D*, D, M
	CD	D*, D, M
2 A-levels or fewer	A*A*, A*A, AA, AB, AC, BB, BC, BD, CC, CD, DD, CDE, DDD	
BTECs of size 2 grades or fewer		D*D*, DD, MM, D*D* (90 credit Diploma), D*D (90 credit Diploma), DD (90 credit Diploma), DM (90 credit Diploma), MM (90 credit Diploma), D*, D, M
Other		

Annex D: Details of the statistical modelling of continuation (all entrants)

11. This annex describes the statistical model used to assess differences in continuation rates between English 18-year-olds entering OfS-registered higher education providers through unconditional and conditional offers. There were 288,185 students who entered higher education in 2015-16 or 2016-17 at the provider with which they were placed through UCAS, with either a conditional or unconditional offer. This analysis models the probability that they were in higher education in the year after they entered (the continuation rates).

12. Multilevel modelling was employed to investigate whether or not the observed differences in continuation rates between applicants placed through an unconditional offer and applicants placed through a conditional offer can be explained by the different characteristics of the applicants.

13. The model reported here includes the following factors:

    - provider where the applicant was placed through UCAS (random intercept)
    - type of offer (conditional, unconditional)
    - year they entered higher education
    - subject studied
    - level of study
    - entry qualifications predicted at the time of application
    - disability type
    - sex
    - ethnicity
    - local or distance learner (defined as study travel to work area same as home travel to work area)
    - Participation of Local Areas (POLAR4) quintile
    - Index of Multiple Deprivation (IMD).

14. These factors were modelled as fixed effects with a random intercept that varies by provider, such that entrants are nested within providers. All other factors were modelled as fixed effects and therefore have the same estimated effect on continuation rates across providers.

15. The model is presented in Equation D1.

Equation D1: Model format for continuation rate

$$\boldsymbol{Continuation\ rate} \sim \boldsymbol{Binomial}\left(\boldsymbol{const}_j, \boldsymbol{\pi}_j\right)$$

$$\begin{aligned}\boldsymbol{logit}\left(\boldsymbol{\pi}_j\right) = {} & \boldsymbol{\beta}_{0j} + \boldsymbol{\beta}_1\boldsymbol{Offertype} + \boldsymbol{\beta}_2\boldsymbol{Year} + \boldsymbol{\beta}_3\boldsymbol{Subject} + \boldsymbol{\beta}_4\boldsymbol{Level} + \boldsymbol{\beta}_5\boldsymbol{Entryquals} \\ & + \boldsymbol{\beta}_6\boldsymbol{Disability} + \boldsymbol{\beta}_7\boldsymbol{Ethnicity} + \boldsymbol{\beta}_8\boldsymbol{Sex} + \boldsymbol{\beta}_9\boldsymbol{LocalLearner} + \boldsymbol{\beta}_{10}\boldsymbol{POLAR} \\ & + \boldsymbol{\beta}_{11}\boldsymbol{IMD}\end{aligned}$$

$$\boldsymbol{\beta}_{0j} = \boldsymbol{\beta}_0 + \boldsymbol{u}_j$$

Note: The βs represent the fixed effects coefficients for all providers, and u_j is the random intercept for provider j.

16. The details of the variables included as fixed effects in the model are shown in Table C1, the type III tests of the fixed effects are shown in Table C2, and the model estimated fixed effect coefficients are shown in Table C3.

Table D1: Variables included as fixed effects in the non-continuation modelling

Type of variable	Fixed effect	Description
Categorical	Offer type	Type of offer for choice where student was placed through UCAS: Conditional (ref) Unconditional
	Year	UCAS application year (and year of entry): 2016 (ref) 2015
	Subject	Subject studied: Medicine and dentistry (ref) Agriculture, food and related studies Architecture, building and planning Biological and sport sciences Business and management Combined and general studies Communications and media Computing Creative arts and design Education and teaching Engineering and technology Geographical and environmental studies Historical, philosophical and religious studies Humanities and liberal arts (non-specific) Language and area studies Law Mathematical sciences Physical sciences

Type of variable	Fixed effect	Description
		Psychology Social sciences Subjects allied to medicine Veterinary sciences
	Level of study	Level of study: First degree (ref) Degrees containing a postgraduate component Other undergraduate
	Predicted entry qualifications	Entry qualifications predicted at time of application: A-level: A*A*A* (ref) A-level: A*A*A A-level: A*AA A-level: AAA A-level: AAB A-level: ABB A-level: BBB A-level: BBC A-level: BCC A-level: CCC and below BTEC: D*D*D* BTEC: D*D*D BTEC: D*DD BTEC: DDD BTEC: DDM BTEC: DMM BTEC: MMM and below 2 A-levels, 1+ BTEC 2 A-levels or fewer BTECs of size 2 grades or fewer Other
	Disability	Disability status of student No disability specified (ref) Cognitive or learning difficulties Mental health condition Multiple impairments Sensory, medical or physical impairments Social or communication impairments
	Sex	Sex of student: Female (ref) Male
	Ethnicity	Ethnicity of student: White (ref) Asian or Asian British - Bangladeshi

Type of variable	Fixed effect	Description
		Asian or Asian British - Chinese Asian or Asian British - Indian Asian or Asian British - Pakistani Asian or Asian British - other Black or black British - black African Black or black British - black Caribbean Black or black British - other Ethnicity unknown or refused Mixed - other Mixed - white and Asian Mixed - white and black African Mixed - white and black Caribbean Other ethnic group
	Local or distance learner	Local or distance learner as defined by home and study travel to work area: Not local or distance learner (ref) Local or distance learner
	POLAR4	Young participation quintile in which entrant lived: Quintile 1 (least represented) Quintile 2 Quintile 3 Quintile 4 Quintile 5 (most represented) (ref)
	IMD	Index of Multiple Deprivation quintile in which entrant lived: Quintile 1 (most deprived) Quintile 2 Quintile 3 Quintile 4 Quintile 5 (least deprived) (ref)

Note: Those categories marked with '(ref)' are the reference categories for each categorical or dummy variable and are not formally included in the model structure.

Table D2: Type III tests of fixed effects

Fixed effect	F value	p-value
Offer type	12.8	0.001
Year	0.2	0.684
Subject	8.5	<.0001
Level of study	47.3	<.0001
Predicted entry qualifications	174.1	<.0001
Disability	18.9	<.0001
Sex	95.2	<.0001

Fixed effect	F value	p-value
Ethnicity	31.0	<.0001
Local or distance learner	66.0	<.0001
POLAR4	3.9	0.004
IMD	34.4	<.0001

Table D3: Coefficient estimates of the fixed effects included in the model for non-continuation

Effect		Estimate	Standard error	p-value
Intercept		4.272	0.144	<.0001
Offer type	Conditional (ref)			
	Unconditional	-0.107	0.030	0.001
Year	2016 (ref)			
	2015	-0.007	0.017	0.684
Subject	Medicine and dentistry (ref)			
	Agriculture, food and related studies	-0.161	0.149	0.278
	Architecture, building and planning	-0.138	0.143	0.335
	Biological and sport sciences	-0.235	0.125	0.061
	Business and management	-0.208	0.125	0.097
	Combined and general studies	-0.534	0.245	0.030
	Communications and media	-0.104	0.130	0.425
	Computing	-0.235	0.126	0.063
	Creative arts and design	-0.056	0.126	0.658
	Education and teaching	0.117	0.131	0.371
	Engineering and technology	-0.397	0.125	0.002
	Geographical and environmental studies	0.087	0.142	0.540
	Historical, philosophical and religious studies	-0.160	0.131	0.221
	Humanities and liberal arts (non-specific)	-0.780	0.457	0.088
	Language and area studies	-0.229	0.128	0.075
	Law	-0.294	0.129	0.023
	Mathematical sciences	-0.463	0.133	0.001
	Physical sciences	-0.058	0.129	0.652
	Psychology	-0.155	0.129	0.230
	Social sciences	-0.257	0.126	0.041
	Subjects allied to medicine	-0.236	0.126	0.062
	Veterinary sciences	0.221	0.226	0.329
	First degree (ref)			

Effect		Estimate	Standard error	p-value
Level of study	Degrees containing a postgraduate component	0.129	0.049	0.009
	Other undergraduate	-0.398	0.043	<.0001
Predicted entry qualifications	A-level: A*A*A* (ref)			
	A-level: A*A*A	-0.138	0.098	0.160
	A-level: A*AA	-0.197	0.093	0.034
	A-level: AAA	-0.379	0.089	<.0001
	A-level: AAB	-0.426	0.090	<.0001
	A-level: ABB	-0.501	0.089	<.0001
	A-level: BBB	-0.686	0.090	<.0001
	A-level: BBC	-0.773	0.091	<.0001
	A-level: BCC	-0.755	0.095	<.0001
	A-level: CCC and below	-1.082	0.093	<.0001
	BTEC: D*D*D*	-1.621	0.093	<.0001
	BTEC: D*D*D	-1.764	0.102	<.0001
	BTEC: D*DD	-1.941	0.099	<.0001
	BTEC: DDD	-1.924	0.092	<.0001
	BTEC: DDM	-1.952	0.093	<.0001
	BTEC: DMM	-1.995	0.096	<.0001
	BTEC: MMM and below	-2.039	0.096	<.0001
	2 A-levels, 1+ BTEC	-1.209	0.091	<.0001
	2 A-levels or fewer	-1.056	0.092	<.0001
	BTECs of size 2 grades or fewer	-1.811	0.088	<.0001
	Other	-1.622	0.086	<.0001
Disability	No disability (ref)			
	Cognitive or learning difficulties	0.207	0.041	<.0001
	Mental health condition	-0.368	0.053	<.0001
	Multiple impairments	-0.248	0.059	<.0001
	Sensory, medical or physical impairments	0.010	0.061	0.867
	Social or communication impairments	0.071	0.091	0.434
Sex	Female (ref)			
	Male	-0.183	0.019	<.0001
Ethnicity	White (ref)			
	Asian or Asian British - Bangladeshi	0.481	0.065	<.0001
	Asian or Asian British - Chinese	0.607	0.125	<.0001
	Asian or Asian British - Indian	0.609	0.054	<.0001

Effect		Estimate	Standard error	p-value
	Asian or Asian British - Pakistani	0.576	0.049	<.0001
	Asian or Asian British - other	0.545	0.070	<.0001
	Black or black British - black African	0.604	0.049	<.0001
	Black or black British - black Caribbean	0.204	0.063	0.001
	Black or black British - other	0.697	0.170	<.0001
	Ethnicity unknown or refused	0.048	0.112	0.672
	Mixed - other	0.005	0.075	0.947
	Mixed - white and Asian	0.011	0.071	0.871
	Mixed - white and black African	0.285	0.118	0.016
	Mixed - white and black Caribbean	0.061	0.067	0.363
	Other ethnic group	0.377	0.074	<.0001
Local or distance learner	Not a local or distance learner (ref)			
	Local or distance learner	-0.177	0.022	<.0001
POLAR4	Quintile 5 (ref)			
	Quintile 4	-0.055	0.026	0.034
	Quintile 3	-0.088	0.027	0.001
	Quintile 2	-0.095	0.029	0.001
	Quintile 1	-0.110	0.033	0.001
IMD	Quintile 5 (ref)			
	Quintile 4	-0.068	0.027	0.011
	Quintile 3	-0.142	0.028	<.0001
	Quintile 2	-0.243	0.030	<.0001
	Quintile 1	-0.353	0.032	<.0001