ABCS: Associations Between Characteristics of Students

Full-time continuation measure

Contents

Introduction to ABCS

1. Associations between characteristics of students (ABCS) provides a set of measures which aims to improve our understanding of the outcomes different groups of people are likely to experience across the student lifecycle. We define groups of people by looking at a set of characteristics so that we can determine the effect of not just one characteristic on an outcome, but the effect of multiple characteristics. ABCS full-time (FT) continuation is one of these measures.

2. This report builds on the core ABCS methodology document, which outlines the methodology that underpins all ABCS measures.[1]

3. An interactive dashboard is also provided to allow the user to explore the results for the ABCS FT continuation measure.[2]

What does ABCS FT continuation measure?

4. ABCS FT continuation measures the proportion of full-time undergraduate higher education entrants who have a successful outcome one year and 15 days after their commencement date. The definition matches that used for the continuation indicator as detailed in the description of student outcome and experience measures definitions document.[3] Student data is obtained from the Higher Education Statistics Agency (HESA) and the Education and Skills Funding Agency's (ESFA) Individual Learner Record (ILR). Free school meal (FSM) eligibility data is taken from the Department for Education's National Pupil Database (NPD).

Population

5. The ABCS FT continuation measure is based on entrants to full-time undergraduate study; the precise definition can be found in the continuation section of the description of student outcome and experience measures definitions document. We further restrict to UK-domiciled students at English providers. We have used five cohorts of entrants, from academic years 2015-16 to 2019-20. This allows us to measure students' outcomes one year later, with the last cohort continuing in the second year of their course in 2020-21 (the latest student data currently available). We have combined five cohorts to ensure that there are sufficient students in each of the characteristic groups to allow us to carry out analysis regarding their continuation behaviour. This also allows us to maximise the number of students that we can derive ABCS FT continuation quintiles for.

6. Postgraduate students and apprenticeship students are not included in the modelling data. For postgraduate students, this aligns with other OfS analysis and regulatory approaches, recognising that a number of the student characteristics that represent those experiencing disadvantage or who are underrepresented in higher education are not available, or otherwise not meaningful, in respect of postgraduate students. Our approach also results from the very

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[1] See www.officeforstudents.org.uk/data-and-analysis/associations-between-characteristics-of-students/.

[2] See www.officeforstudents.org.uk/data-and-analysis/associations-between-characteristics-of-students/.

[3] See www.officeforstudents.org.uk/data-and-analysis/student-outcome-and-experience-measures/documentation/ (Description of student outcome and experience measures used in OfS regulation: definitions and methods used).

different behaviours and outcomes we observe for postgraduate students compared with undergraduate students. For apprenticeship students, our approach recognises that the potential for conducting the appropriate statistical modelling is more limited, on account of the more limited spread and characteristics of apprenticeship students across the sector. When considered at the level of detail necessary within the ABCS models, there are insufficient student numbers for those models to be robust (in technical terms, the models do not converge when constructed for apprenticeship students only).

Successful outcomes

7. Continuation outcomes are measured by identifying a cohort of entrants to higher education qualifications at the provider and following them through the early stages of their course to track how many continue in active study, or qualify, in subsequent years. Successful continuation outcomes are identified in the description of student outcome and experience measures definitions document.[4]

Selection of characteristics

8. In selecting the factors for use in the FT continuation model, as well as having good availability of data, we were looking for characteristics that should not influence a person's likelihood of continuing their course, but where the statistical evidence showed that they did.

9. The twelve characteristics used in the FT continuation model are as follows: age group, care experience, disability, ethnicity, free school meal (FSM) eligibility, income deprivation affecting children index (IDACI), index of multiple deprivation (IMD), local or distance learner status, parental higher education, sex, socio-economic classification (NS-SEC) and TUNDRA. For details of these characteristics, see the characteristics section in the ABCS methodology document.[5]

10. Analysis showed that continuation rates for students in age groups between 26 and 50- years old were similar enough to warrant combining them into a single attribute group. This has the advantage of increasing the model's stability, without losing valuable differentiation between attribute groups.

11. As described in the section on selecting the characteristics in the ABCS methodology document, we found that the number of students with an unknown or missing age was too low to leave in their own group, so they were combined with the 20-year-old age group, as this attribute group had the closest continuation rate.

12. The model includes data on 1,972,125 students, 1,775,150 of whom had a successful continuation outcome. Table 1 shows the attribute groups within each of the characteristics used for the model, and the number and proportion of students who are in each of these groups.

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[4] See www.officeforstudents.org.uk/data-and-analysis/student-outcome-and-experience-measures/documentation/ (Description of student outcome and experience measures used in OfS regulation: definitions and methods used).

[5] See www.officeforstudents.org.uk/data-and-analysis/associations-between-characteristics-of-students/.

Table 1: Characteristics in the ABCS FT continuation model

Characteristic	Category	Total number of individuals in the five cohorts	Per cent
Age group	*18 and under	910,490	46.2%
	19	406,955	20.6%
	20	136,020	6.9%
	21-25	219,640	11.1%
	26-50	274,710	13.9%
	51+	24,310	1.2%
Care experience	Care experienced	14,125	0.7%
	*Not care experienced	1,458,250	73.9%
	Unknown or N/A	499,750	25.3%
Disability	Cognitive or learning difficulties	111,475	5.7%
	Mental health condition	70,295	3.6%
	Multiple or other impairments	44,950	2.3%
	*No disability reported	1,685,000	85.4%
	Sensory, medical or physical impairments	44,065	2.2%
	Social or communication impairment	16,345	0.8%
Ethnicity	Asian or Asian British - Bangladeshi	47,005	2.4%
	Asian or Asian British - Chinese	14,415	0.7%
	Asian or Asian British - Indian	72,405	3.7%
	Asian or Asian British - Pakistani	83,625	4.2%
	Asian or Asian British - other	50,150	2.5%
	Black or black British - African	146,940	7.5%
	Black or black British - Caribbean	40,925	2.1%
	Black or black British - other	11,675	0.6%
	Gypsy or Traveller	510	0.0%
	Mixed - other	27,165	1.4%
	Mixed - white and Asian	27,880	1.4%
	Mixed - white and black African	13,095	0.7%
	Mixed - white and black Caribbean	26,040	1.3%
	Other ethnic group	39,595	2.0%
	Refused or unknown	23,680	1.2%
	*White	1,347,010	68.3%

FSM eligibility	Eligible for FSM	223,315	11.3%
	*Not eligible for FSM	1,109,605	56.3%
	Unknown or N/A	639,205	32.4%
IDACI	Quintile 1 (most deprived)	389,225	19.7%
	Quintile 2	387,785	19.7%
	Quintile 3	362,390	18.4%
	Quintile 4	361,440	18.3%
	*Quintile 5 (least deprived)	403,645	20.5%
	Unknown or N/A	67,640	3.4%
IMD	Quintile 1 (most deprived)	385,745	19.6%
	Quintile 2	389,395	19.7%
	Quintile 3	358,920	18.2%
	Quintile 4	364,125	18.5%
	*Quintile 5 (least deprived)	406,300	20.6%
	Unknown or N/A	67,640	3.4%
Local or distance learner	Distance	6,295	0.3%%
	Local	595,910	30.2%
	*Neither	1,369,925	69.5%
NS-SEC	Higher managerial, administrative and professional occupations	671,420	34.0%
	Intermediate occupations	312,380	15.8%
	Never worked and long-term unemployed	7,105	0.4%
	Routine and manual occupations	373,275	18.9%
	*Unknown or N/A	607,940	30.8%
Parental higher education	*Higher education qualification held by parent(s)	750,075	38.0%
	Higher education qualification not held by parent(s)	739,075	37.5%
	Unknown or N/A	482,975	24.5%
Sex	*Female	1,115,815	56.6%
	Male	855,045	43.4%
	Other	1,265	0.1%
TUNDRA	Quintile 1 (least represented)	162,360	8.2%
	Quintile 2	216,120	11.0%
	Quintile 3	265,455	13.5%
	Quintile 4	326,375	16.5%
	*Quintile 5 (most represented)	422,365	21.4%
	Unknown or N/A	579,450	29.4%

Total number of individuals		1,972,125	100%

* Indicates a reference category in the statistical model

The statistical model

13. We have used a binary logistic regression model to predict the probability of continuing. We have included all twelve characteristics as main effects and used a statistical approach (stepwise) to determine which of the two-way interactions should be included. See the ABCS methodology document for details.[6] This has resulted in the inclusion of the following interactions shown in Table 2.

Table 2: Interactions in the ABCS FT continuation model

Interactions
FSM eligibility*NS-SEC
FSM eligibility*Care experience
FSM eligibility*Parental higher education
Age group*FSM eligibility
Age group*NS-SEC
Age group*Care experience
Age group*Parental higher education
Care experience*NS-SEC
Care experience*Parental higher education
Ethnicity*FSM eligibility
Ethnicity*NS-SEC
Ethnicity*Age group
Ethnicity*Care experience
Ethnicity*Parental higher education
Disability*FSM eligibility
Disability*NS-SEC
Disability*Age group
Disability*Care experience
Disability*Ethnicity
Disability*Parental higher education
Disability*Sex
Local or distance learner*FSM eligibility
Local or distance learner*NS-SEC
Local or distance learner*Age group

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[6] See www.officeforstudents.org.uk/data-and-analysis/associations-between-characteristics-of-students/.

Local or distance learner*Care experience
Local or distance learner*Ethnicity
Local or distance learner*Disability
Local or distance learner*Parental higher education
Local or distance learner*Sex
Parental higher education*NS-SEC
IDACI*NS-SEC
IDACI*Local or distance learner
IDACI*Sex
IMD*FSM eligibility
IMD*NS-SEC
IMD*Age group
IMD*Ethnicity
IMD*Disability
IMD*IDACI
TUNDRA*NS-SEC
TUNDRA*Age group
TUNDRA*Ethnicity
TUNDRA*Parental higher education
TUNDRA*Sex
Sex*Age group
Sex*Care experience
Sex*Ethnicity
Sex*Parental higher education

14. The model is:

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\begin{aligned}
logit(\pi_i) = \beta_0 &+ \tilde{\beta}_1 age_i + \tilde{\beta}_2 care\ experience_i + \tilde{\beta}_3 disability_i + \tilde{\beta}_4 ethnicity_i \\
&+ \tilde{\beta}_5 FSM\ eligibility_i + \tilde{\beta}_6 IDACI_i + \tilde{\beta}_7 IMD_i + \tilde{\beta}_8 local\ or\ distance_i \\
&+ \tilde{\beta}_9 parental\ higher\ education_i + \tilde{\beta}_{10} sex_i + \tilde{\beta}_{11} TUNDRA_i + \tilde{\beta}_{12} NS\_SEC_i \\
&+ interactions
\end{aligned}
$$

Where i is an individual, πi is a binary response variable which takes the value of 1 if the individual successfully continued their course and 0 otherwise, β represents vectors of different sizes and the interactions are as listed above.

Model results

15. The coefficient estimates for each of the factors and for all the two-way interactions included in the final model can be found in the Excel/CSV files.[7]

Derivation of ABCS FT continuation quintiles

16. Using the model's predicted continuation rates for each of the student groups, we then used these predicted rates to split the students included in the modelling into five quintiles. Those student groups with the lowest modelled rates will be in the lowest continuation quintile and those with the highest will be in the highest continuation quintile. Table 3 shows the number and proportion of students in each quintile, as well as the mean, minimum and maximum predicted continuation rates. The minimum predicted rates are also the breakpoints, which determine the quintile boundaries.

Table 3: Description of ABCS FT continuation quintiles

FT continuation quintile	Number of students	Proportion of students	Mean modelled FT continuation rate	Minimum modelled FT continuation rate	Maximum modelled FT continuation rate
Quintile 1	394,425	20.0%	68.2%	0.0%*	83.0%
Quintile 2	394,430	20.0%	88.3%	83.0%	91.8%
Quintile 3	394,410	20.0%	93.6%	91.8%	95.2%
Quintile 4	394,405	20.0%	96.2%	95.2%	97.0%
Quintile 5	394,455	20.0%	97.9%	97.0%	100.0%

* This low modelled continuation rate is based on a small group and may not reflect their observed continuation rate.

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[7] See www.officeforstudents.org.uk/data-and-analysis/associations-between-characteristics-of-students/.