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Leaving university early: exploring relationships between institution type and student withdrawal and implications for social mobility

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Leaving university early: Exploring relationships between institution type and student withdrawal and implications for social mobility

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Abstract Fair access to university continues to dominate public and intellectual discourse in the United Kingdom. There is mixed evidence for the effect of recent UK policy to widen participation. Significant variation in representation across types of higher education institution (HEI), with the most selective institutions demonstrating the least diversity in their student profile, point to the persistence of social class inequalities affecting and exacerbated by access to higher education.

There is less attention in research literature and public debate in relation to students withdrawing or leaving their studies before graduation and very little about the post-access performance of traditional and non-traditional students in more and less selective institutions.

Drawing on research which made use of a unique national dataset of students from 86 UK HEIs between 2006 and 2012 including students who left their studies early, this paper presents and explores the implications in terms of social mobility of two key findings: that 'non-traditional' students are, across the board, more likely to leave university early; but also that they appear proportionally more likely to leave from more selective institutions.

Key terms: higher education, retention, attrition, persistence, drop-out, social mobility, widening participation.

Introduction

This paper reports briefly on findings from a large scale study drawing on more than 36,000 early leavers from 86 UK Higher Education Institutions in the period 2006–2012. The research used data collected by the *back on course* project[i], which was a three-year national project funded by the Higher Education Funding Council for England (HEFCE), and delivered by the Open University (OU) with support from the Universities and Colleges Admissions Service (UCAS). The project ran from 2009 to 2012 and was

established in response to increasing concern about the number of students leaving higher education before they gained their qualification.

The *backoncourse* project incorporated a commitment research into leaving early, and the overall purpose of the research was to develop responses to two primary questions:

1. Which students leave higher education early?

2. What characteristics or experiences contribute to early-leaving?

This paper focusses on the findings of the research which relate most directly to widening participation and social mobility. The research also explored reasons for leaving early and provided some insight into re-application rates which is considered elsewhere (Rose-Adams, 2012).

Leaving Early – The Literature

Widening participation and fair access to university continues to dominate public and intellectual discourse in the UK and globally. There is mixed evidence for the effect of recent UK policy to widen participation: compare, for example, recent reports by the Higher Education Funding Council for England (HEFCE, 2010) with that of the Sutton Trust (2012). Significant variation in diversity of the student body across different types of higher education institution (HEI), with the most selective institutions demonstrating the least diversity in student profile (Boliver, 2011), point to the persistence of social class inequalities affecting and exacerbated by access to higher education (Field, 2003).

There is a considerable body of literature that focusses on student retention in higher education, and there are numerous examples of large-scale, national programmes supporting retention, including the US programme of surveys '*What Works in Student Retention*' supported by the organisation American College Testing[5], or more recently in the UK the '*What Works? Student Retention and Success'* programme (supported by the Higher Education Funding Council for England[1], the Paul Hamlyn Foundation[2], the Higher Education Academy[3] and Action on Access[4]).

There is continuing evidence demonstrating the need for there to be a good fit between the student and the institution (Cabrera, Amaury and Castenada, 1993) and Vincent Tinto's (1975) Student Integration Model has had an enduring influence on how retention activities and initiatives are conceived. A common recurring theme is the importance of students' motivation and academic ability and institutions' academic and social characteristics.

Arguably, this has led to an integrationist viewpoint predominating retention activity which views the issue of early-leaving as requiring the student to assimilate to the institution and the ways of studying within that

institution, rather than any institutional transformation. The integrationist viewpoint has been subject to criticism (Ogza and Sukhanden, 1998) and calls for higher education to adapt to 'a new function and purpose in a changed society' (Young, Glogowska and Lockyer, 2007, p.277). Such calls are generally accompanied by arguments to move away from a 'deficit' model which pathologises the student, and shift the focus to the roles and responsibilities of higher education institutions in supporting student retention.

However, there are a number of personal or demographic factors which are considered to play a role in the likelihood of a student leaving higher education early, as well as institutional factors. Personal or demographic factors include:

- Older students (Yorke and Longden, 2008)

- Male students (Davies and Elias, 2003)

- Part-time students (National Audit Office, 2007)

- Students from low socio-economic groups (Roberts, 2011).

There is also evidence that such 'non-traditional' students may bring with them particular expectations of university life, which are 'not congruent with what the unchanging university education delivers' (Roberts, 2011, p.192). Reay, Crozier and Clayton (2011) offer a finely drawn analysis of working-class students in higher education which demonstrates the potential for working class students' to perceive problems of 'fitting-in' in both academic and social terms.

Although there is considerable research looking at student characteristics and circumstances in relation to success in higher education, there is comparatively little research or public debate about differences in performance of traditional and non-traditional students in more and less selective institutions. This paper attempts to offer some evidence to address this gap.

The national picture

The UK Higher Education Statistics Agency (HESA) produces a range of annual performance indicators for higher education which includes figures for non-continuation of students at HEIs[ii]. The HESA figures for the UK demonstrate a non-completion rate after one year of starting of 8.6% for 2009/10 entrants to full-time first degrees. Non-continuation rates are higher for older students, young low participation neighbourhood entrants and part-time students, as shown in Table 1.

Table 1: Non-continuation from UK HEIs, 2009/10

	Young			Mature			All		
	Total	Number no longer in HE	% no longer in HE	Total	Number no longer in HE	% no longer in HE	Total	Number no longer in HE	% no longer in HE
Full-time first degree entrants* (2009/10)	289,345	20,930	7.2	81,475	10,825	13.3	370,830	31,755	8.6
Full-time other entrants* (2009/10)	23,680	4,400	18.6	33,205	4,845	14.6	56,905	9,255	16.3
Full-time first degree entrants from LPN based on POLAR2 method* (excludes Scotland) 2009/10	26,910	2,675	9.9	NA	NA	NA	NA	NA	NA
Part-time first degree entrants**(2008/09)	NA	NA	NA	NA	NA	NA	37,010	12,385	33.5

*No longer in higher education one year later
**No longer in higher education two years later

Source: HESA http://www.hesa.ac.uk

Methods

A unique national dataset of accepted applicants[iii] at UK higher education institutions (HEIs) between 2006 and 2012[iv] provided by UCAS, including standard and derived variables for student characteristics and institutional type, was the primary source for the research.

The researchers attempted a comprehensive investigation of the available variables, interactions and associations with leaving early. The range of approaches adopted and use of the datasets was inevitably pragmatic, and the data on early-leavers was mainly used:

- to make comparisons between the overall profile of all UK HE students, and students from institutions included in the dataset to establish the representativeness of the dataset;

- to explore associations between variables including the relative and statistical strength of associations; and

- for hypothesis testing.

This approach aimed to provide an exhaustive exploration of the data, including a detailed consideration of intersectionalities between student and institutional characteristics:

- An Index was calculated to show the extent to which students with particular demographic and other characteristics were over or under-represented amongst early leavers. The Index was useful in providing a standard format for comparing the different groups. It was designed to highlight inequalities in the propensity for different groups to be early leavers by illustrating the extent of difference in the proportion of early leavers with certain characteristics against what might be expected given the overall population from which early leavers are drawn.

- Statistical modelling by logistic regression was also used to explore the relative importance of factors associated with early leaving, using the institutional, demographic and other variables derived from the dataset of early leavers and all other students at institutions included in the dataset.

The key standard UCAS variables used in the analysis for both of these sources are summarised in Table 2 below.

Table 2: Standard and derived UCAS variables included in the analysis

| Type	Description
Institutional Tariff Group	Calculated taking the average Tariff score of the applicants accepted to the institution in 2011, and banded as follows: Lower Tariff Group: 0 – 280 points Middle Tariff Group: 280<-390 points Higher Tariff Group: more than 390 points
Demographic variables	The analysis included student level variables taken from the application through UCAS made by the students, and based on UCAS definitions of: - age on application, - gender, and - ethnicity. Not all demographic variables (eg. ethnicity) are compulsory fields in the UCAS application process.
UCAS tariff point score	Examination results for select key qualifications used in applying for entry to HE are supplied to UCAS from qualification awarding bodies (the Awarding Body Linkage (ABL) process). The sittings received through ABL vary by qualification and UCAS does not receive verified results for 'Access to HE' or many vocational qualifications. Tariff points achieved from some qualifications and through A levels[v] not taken within the timeframe eligible for verification through ABL will not be calculated within UCAS data (and recorded as '0' points)[vi].
Recent A level qualifications	Students were flagged to identify those who had recent GCE A levels, using the ABL process and which covers the 18 months prior to the summer of the cycle during which the students applied.
Previous educational establishment	Derived from the establishment an applicant had linked to in their UCAS application, with the type used being that which was defined within UCAS by the establishments themselves[vii]. Students who had applied as an individual and not through a previous educational establishment were grouped into 'Other'.
HE participation indicator	An indicator of HE participation was derived from the students' home postcode stated in their UCAS applications. Two separate measures were applied based on the POLAR measures of participation rates in HE for populations by postcode area: QYPR for those age 19 & under and QAHE for those aged 20 & over[viii].
Distance to study	A band value for distance was calculated using the home postcode stated on the application in students' UCAS applications and the postcode of the main campus of the institution accepted to. The distance used was a straight line between these points.
Application route	Students were flagged according to whether or not they made a main scheme choice (a choice made on time before June 30 of the cycle) and whether they applied to only one institution or made multiple choices[ix]. Those applicants who applied after June 30 in the cycle – ie. in Clearing or Adjustment - were flagged as making no choices.

Representativeness of the dataset

The research reported in this paper draws on a dataset of accepted applicants at, and early leavers from, 86 UK higher education institutions. This represented 1,399,845 of the total number of accepted applicants in the

period 2006–11, equating to 69.6% of the total of all accepted applicants during the period.

Most students in the dataset where from post-1992 institutions. The dataset provided greatest coverage for the 1994 Group of universities and Guild HE universities (92% of accepted applicants at the 1994 Group universities, and 78.9% of the Guild HE universities). Over half (53.4%) of accepted applicants at Russell Group institutions during the period were represented in the dataset. It should be noted that institutions included in the dataset were mainly universities and there were few Colleges of Higher Education (Figure 1).

Figure 1: All accepted applicants and dataset applicants 2006-11 by mission group*
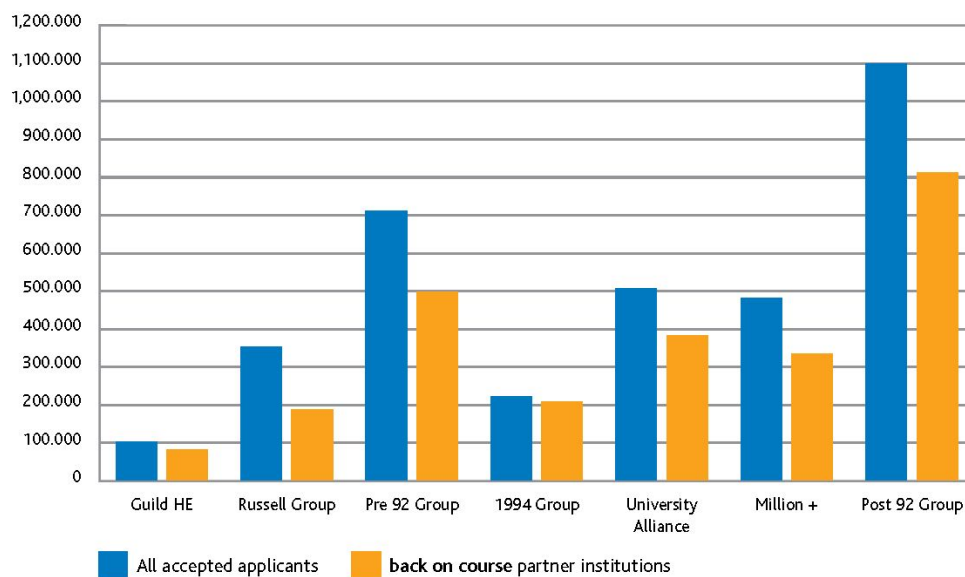
*Institutions can belong to >1 mission group and in these cases students are double-counted

There are a number of differences between students from institutions included in the dataset by demographic and other characteristics compared to other institutions:

- The profile of students from institutions included in the dataset is slightly younger: 72.3% were aged 19 and under, compared to 69.6% at other institutions. Some 60.6% of students at in the dataset had recent 'A' level qualifications compared to 56.2% at other institutions.

- Students from institutions included in the dataset were more likely than students at other institutions to have made multiple application choices: 86.4% compared to 79.7% at other institutions.

- Students from institutions included in the dataset were more likely to travel further to university: 54.7% travelled 30 miles and above compared to 49.6% at other institutions.

- The state sector (excluding grammar schools) accounted for 30.2% of the previous education setting for students from institutions included in the dataset compared to 27.0% at other institutions. Students at other institutions were more likely than those included in the dataset to be from the Independent school sector (10.3% at other institutions compared to 7.9% from institutions included in the dataset).

- There were slightly higher proportions of students from the areas of highest participation in the dataset (71.5% from high participation areas compared to 69.6% at other institutions).

# Key findings about leaving early and institutional type

What student characteristics appear to be associated with leaving early?

A range of key demographic and other variables, highlighted in previous research as relevant to leaving early, were considered, and a number of key differences were observed in the dataset. Figure 2 summarises the propensity to leave early across these variables, presented as an Index to demonstrate the extent to which groups were over or under-represented amongst early-leavers compared to all students in the dataset.

Figure 2 indicates that overall, students with following characteristics were more likely to leave early:

- Male students;

- Students aged 20 to 24 on application and those 40 and over;

- Students from the lower POLAR2 quintiles;

- Student coming from Further Education colleges;

- Student not recently gaining A levels before application;

- Students with low tariff points on entry;

- Students for whom their HEI is less than 30 miles away from home.

Figure 2: Early leavers indexed against all students in dataset
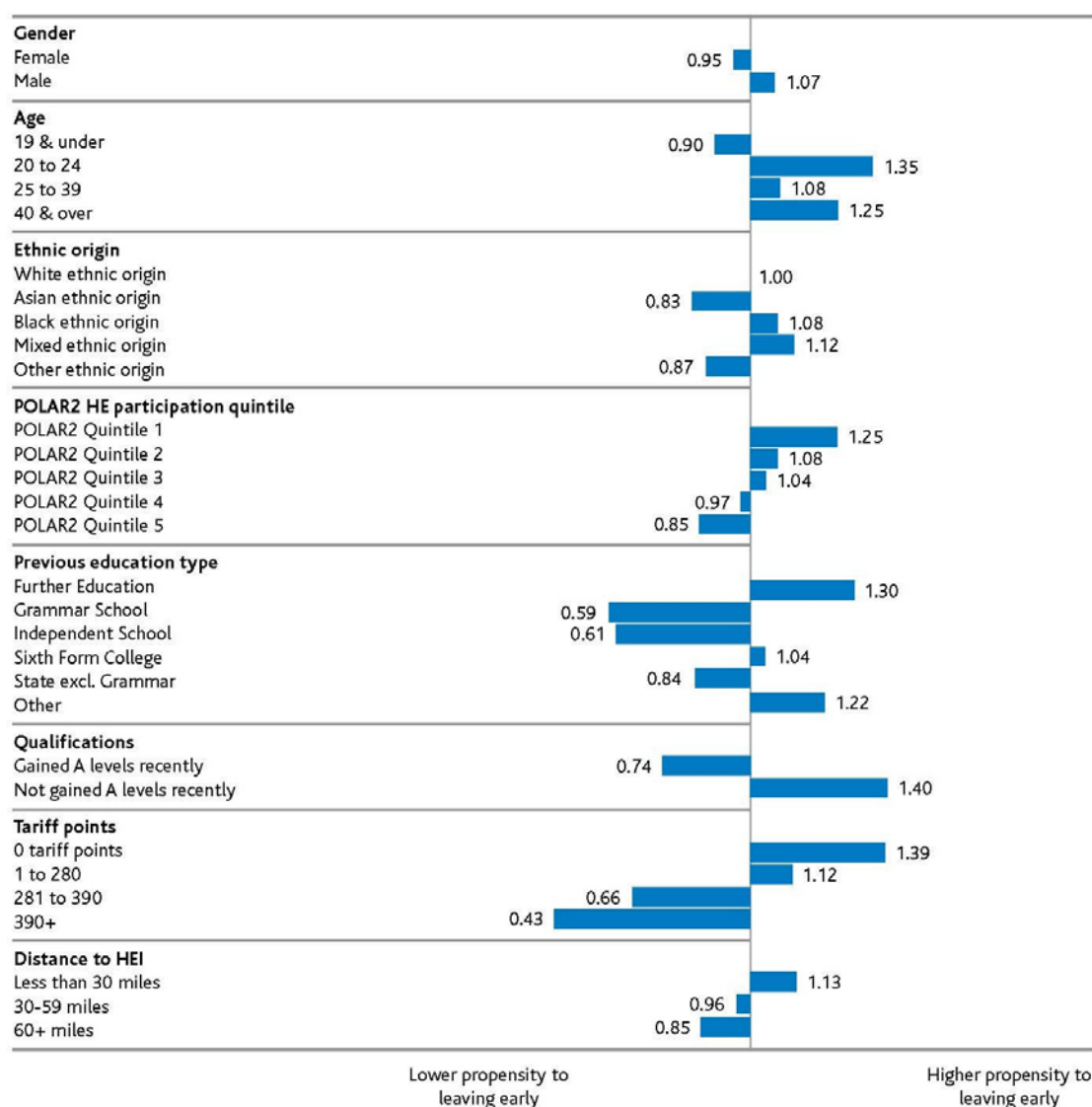
The above analysis looks at variables which attach to the students, but the research sought also to consider to what extent institutional factors may be associated with early leaving, both through an investigation of the interaction of key variables such as POLAR2 data with institution type, and a logistic regression analysis.

Interactions

Institutions included in the dataset were categorised as either a Lower, Middle, or Higher Tariff Group institutions, calculated by taking the average Tariff score of the applicants accepted to the institution in 2011, and banded as follows:

- Lower Tariff Group: 0–280 points

- Middle Tariff Group: 280–390 points

- Higher Tariff Group: more than 390 points

Overall, early leaving rates were highest in Lower Tariff Group institutions, and Figure 3 suggests up to one-third higher rates of early leaving at Lower Tariff Group institutions compared to all students, and up to half the rate of early leaving at Higher Tariff Group Institutions compared to all students.

Figure 3: Early leavers by institution group indexed against all students in dataset
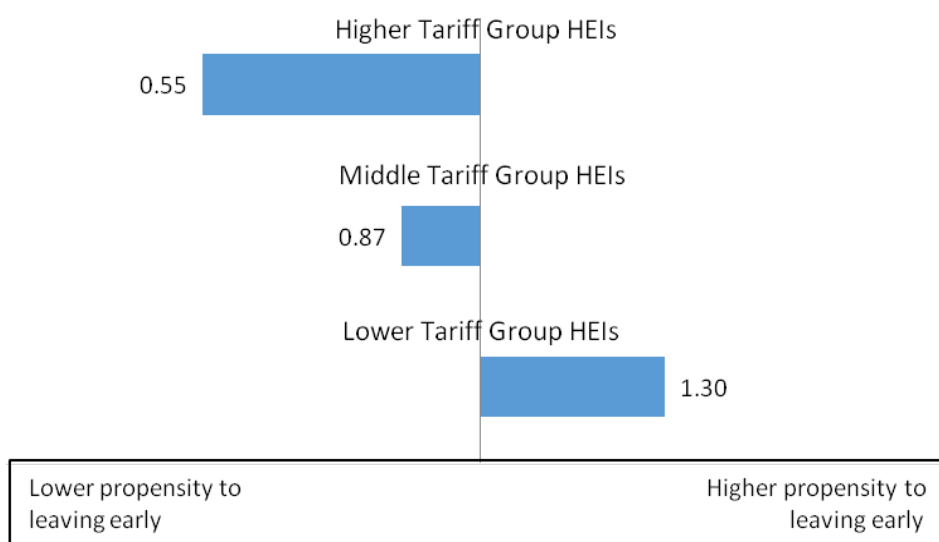
Proportionally fewer students at Higher Tariff Group institutions were from lower HE participation neighbourhoods (using POLAR2 data). Over four-fifths of students at Higher Tariff Group institutions (81.5%) were from higher participation neighbourhoods, compared to 74.0% and 64.9% respectively at Middle and Lower Tariff Group institutions.

Students from low participation neighbourhoods were more likely than those from high participation neighbourhoods to be early leavers across the data (Figure 4). However, students from low participation neighbourhoods at Higher Tariff Group institutions had the greatest propensity to leave early (just under a quarter–24.2%–of early leavers from Higher Tariff Group institutions were from low participation neighbourhoods, well above their representation amongst all Higher Tariff Group students–18.5%).

Figure 4: Distribution of students and early leavers by high or low HE participation and institution Tariff Group
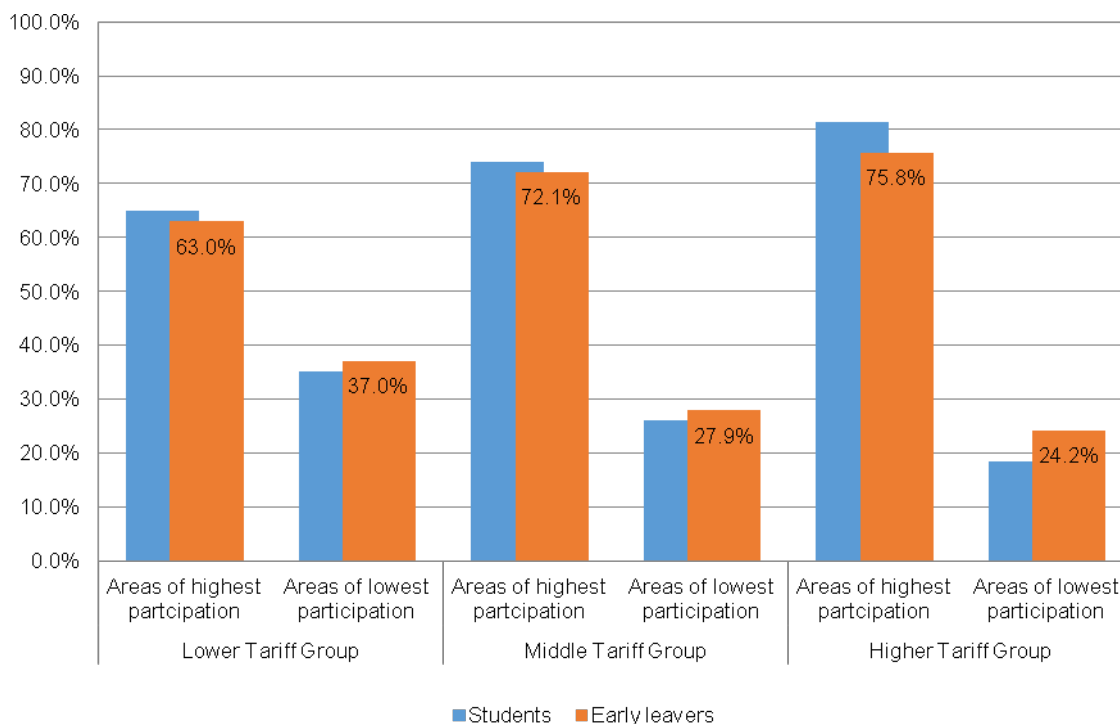
Logistic regression

Statistical modelling was used to explore the relative importance of factors associated with early leaving. The dependent variable was binary–early leaver or not early leaver–and a logistic regression was applied to model early leaving using the institutional, demographic and other variables derived from the dataset. Regression equations were calculated for applicants according to whether the institution was in a Lower, Middle or Higher Tariff Group, and are summarised in Table 3, with graphical representations provided in Figure 5.

The results of chi-square tests of association were used to determine the order in which these variables were entered into the regression model, and the result were as follows:

- The most important factor underlying early leaving is a low UCAS tariff point score on application. The modelling by institution type suggested that this variable has most impact in Higher Tariff Group institutions.

- The model suggests that previous education in the state sector (i.e. not from an independent school) is a more important factor in early leaving at the Higher Tariff Group institutions.

- The model confirms other evidence in this study (see 'Interactions' section above) about the association between students from low participation neighbourhoods and early leaving from Higher Tariff Group institutions.

- Application to an institution directly or through Clearing / UCAS Extra comes out in the model as the second most important factor in early leaving in Middle Tariff Group institutions, although it appears that this factor is relatively less important in Lower Tariff Group institutions, and not significant in Higher Tariff Group institutions.

Table 3: Results of logistic regression based on institutional Tariff Groups

|	Lower Tariff Group	Middle Tariff Group	Higher Tariff Group
UCAS tariff point score is less than 280 points (excludes 0)	0.422**	0.515**	0.703**
State sector education	-0.005(ns)	-0.139*	0.279*
Age band (young)	-0.120**	-0.210**	-0.190>
Applied through clearing/extra or direct	0.155**	0.261**	0.118(ns)
Distance to study is less than 30 miles	-0.20(ns)	-0.217**	0.166**
Areas of lowest participation	0.051*	0.102**	0.211**
Gender is male	0.033(ns)	0.081*	0.045(ns)
R square (Nagelkerke)	0.005	0.010	0.010
Hosmer & Lemeshow Test (goodness of fit)	29.843, df=8, sig=0.000	10.990	6.255, df=8, sig=0.510
Valid cases not early leaver	336998	307107	240382
Valid case early leaver	10047	5999	2982

**Significance is 0.000, *Significance is less than 0.010, ns=not significant at 5% level

Figure 5: Graphical representation of the results of logistic regression model for Lower, Middle and Higher Tariff Group institutions in dataset
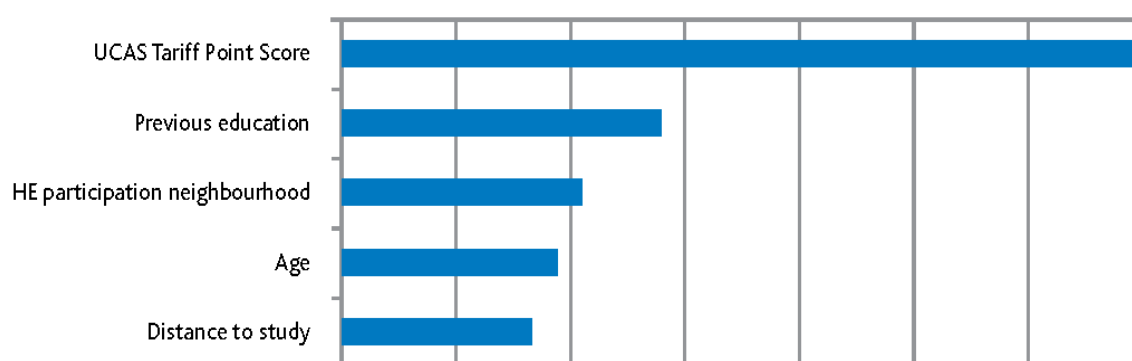
Lower Tariff Group institutions
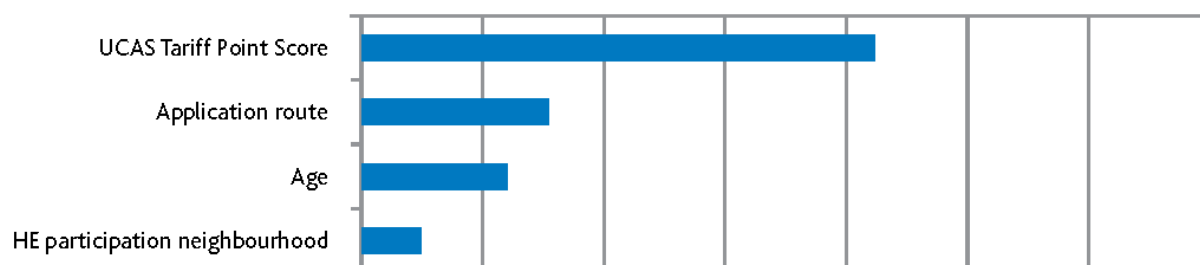
Middle Tariff Group institutions
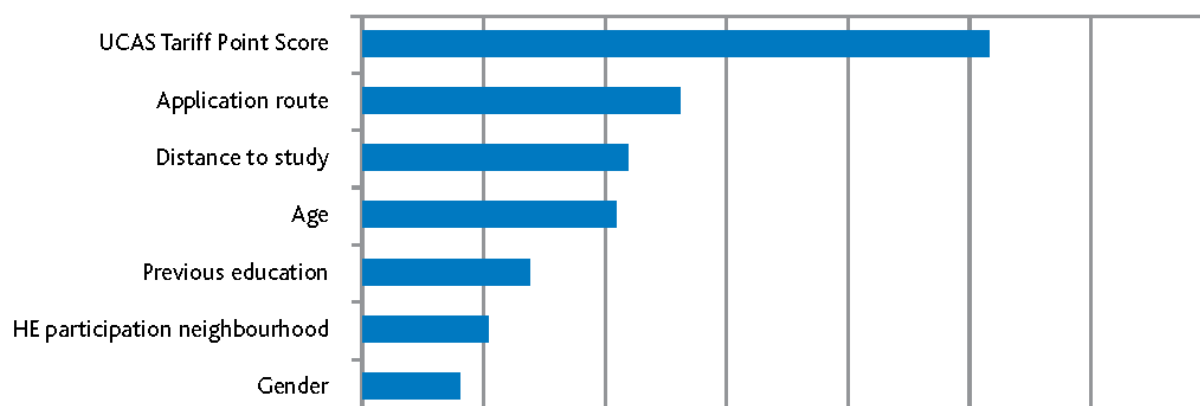
Higher Tariff Group institutions

Discussion

Studies of early leavers over the past decade, both qualitative and quantitative, have reported highly consistent rates of early leaving from higher education. The reasons for departure given by students are also relatively consistent. As such there has, despite efforts to widen participation and address the social and academic factors affecting integration into university life, been very little change in both the incidence of early leaving and how early leaving is reported in the literature.

This study on the whole appears to confirm previous research about patterns of early leaving: students who are male, older, from low HE participation neighbourhoods, progressing to HE from FE colleges, have lower tariff scores, or who live very close to their university, all are more likely to leave early. Confirmation of previous findings is important as it validates and updates those previous studies.

This paper aimed to provide are more detailed look at the interactions between some of these characteristics and circumstances, and also begin to consider whether any institutional characteristics were relevant.

The study has found associations between the average tariff score of accepted student at universities and certain key characteristics often associated with early leaving. Early leaving at High Tariff Group institutions—those having on average students with 390 or more tariff points on entry—is lower overall, but those institutions had relatively higher early leaver rates than Low Tariff Group institutions for 'non-traditional' students, including older students, males, those from lower participation backgrounds, those not from independent or state grammar schools, and those without recently acquired 'A' levels.

What does this mean for social mobility? The data used in this study provides two key messages. Firstly, early leaving is more prevalent amongst students who are usually associated with 'non-traditional' higher education backgrounds, whichever institution attended. However, secondly, such students appear to be more likely to leave at Higher Tariff Group institutions. Since students at Higher Tariff Group institutions will have in general had to have achieved the higher entry tariffs, strong academic performance on entry does not appear to be sufficient to translate into university success.

Recent research from a single institution study has suggested that individuals from less privileged backgrounds perform comparably to their more privileged peers at a more selective institution (Hoare and Johnston, 2011). However the findings of this study which includes 86 HEIs suggests that more selective institutions (in this study, those students having higher average tariff scores on entry) see relatively higher early leaver rates for student from less privileged backgrounds. Therefore, research which

focusses on fair access to the professions (e.g. upReach, 2012), which identifies unequal access to the professions as the main barrier to social mobility, may need to be revised somewhat, for there appears to be an additional layer of inequality in terms of student retention, before even unequal access to professions is encountered.

This study re-emphasises that all institutions must not lessen their efforts to support all students to achieve successful study outcomes, and especially those from non-traditional HE backgrounds: those whom we most directly associate with widening participation policy. The findings of this study should prove a useful reminder to the UK government that a focus on fair access to university is not sufficient to address meaningfully the challenges to social mobility: it is the journey through the institution which also presents inequalities for individuals from less advantaged and non-traditional HE backgrounds.

Acknowledgements

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[i] For further information see www.backoncourse.ac.uk

[ii] Available at http://www.hesa.ac.uk/index.php?option=com_content&task=view&id=2064&Itemid=141

[iii] Accepted applicants are defined as those holding places at an institution following their application. For the purposes of this report this group is also referred to as 'students'.

[iv] The records were matched on either of two set of criteria (1. Forename, surname, date of birth, institution accepted to/left early from; or 2. Forename, surname, home postcode, institution accepted to/left early from). Only the last instance of a matched early leaver was used (ie. if an individual was accepted to an institution and left early and was then accepted to another institution and again left early, the student flag was against the second institution).

[v] A Levels (full title General Certificate of Education Advanced Level) are academic qualifications offered in England, Wales and Northern Ireland to students completing secondary and pre-university education.

[vi] Details of the qualifications within the Tariff can be found at http://www.ucas.com/students/ucas_tariff/

[vii] There was a re-classification exercise on establishments between 2006 and 2011 and where possible, the type was taken from the 2011 type, although if this was unavailable then the type was taken from the cycle the student applied in.

[viii] More information can be found at http://www.hefce.ac.uk/whatwedo/wp/ourresearch/polar/

[ix] Up to 2008 cycle an applicant could make up to 6 choices. From the 2009 cycle onwards and applicant could make up to 5 choices.