

Henderson, Morag; Shure, Nikki; Adamecz-Völgyi, Anna

**Working Paper**

## 'First in Family' University Graduates in England

IZA Discussion Papers, No. 12588

**Provided in Cooperation with:**

IZA – Institute of Labor Economics

*Suggested Citation:* Henderson, Morag; Shure, Nikki; Adamecz-Völgyi, Anna (2019) : 'First in Family' University Graduates in England, IZA Discussion Papers, No. 12588, Institute of Labor Economics (IZA), Bonn

This Version is available at:

<https://hdl.handle.net/10419/207413>

**Standard-Nutzungsbedingungen:**

Die Dokumente auf EconStor dürfen zu eigenen wissenschaftlichen Zwecken und zum Privatgebrauch gespeichert und kopiert werden.

Sie dürfen die Dokumente nicht für öffentliche oder kommerzielle Zwecke vervielfältigen, öffentlich ausstellen, öffentlich zugänglich machen, vertreiben oder anderweitig nutzen.

Sofern die Verfasser die Dokumente unter Open-Content-Lizenzen (insbesondere CC-Lizenzen) zur Verfügung gestellt haben sollten, gelten abweichend von diesen Nutzungsbedingungen die in der dort genannten Lizenz gewährten Nutzungsrechte.

**Terms of use:**

*Documents in EconStor may be saved and copied for your personal and scholarly purposes.*

*You are not to copy documents for public or commercial purposes, to exhibit the documents publicly, to make them publicly available on the internet, or to distribute or otherwise use the documents in public.*

*If the documents have been made available under an Open Content Licence (especially Creative Commons Licences), you may exercise further usage rights as specified in the indicated licence.*

DISCUSSION PAPER SERIES

IZA DP No. 12588

**'First in Family' University Graduates  
in England**

Morag Henderson  
Nikki Shure  
Anna Adamecz-Völgyi

SEPTEMBER 2019

## DISCUSSION PAPER SERIES

IZA DP No. 12588

# 'First in Family' University Graduates in England

**Morag Henderson**

*UCL Institute of Education*

**Nikki Shure**

*UCL Institute of Education and IZA*

**Anna Adamecz-Völgyi**

*UCL Institute of Education and Budapest Institute for Policy Analysis*

SEPTEMBER 2019

Any opinions expressed in this paper are those of the author(s) and not those of IZA. Research published in this series may include views on policy, but IZA takes no institutional policy positions. The IZA research network is committed to the IZA Guiding Principles of Research Integrity.

The IZA Institute of Labor Economics is an independent economic research institute that conducts research in labor economics and offers evidence-based policy advice on labor market issues. Supported by the Deutsche Post Foundation, IZA runs the world's largest network of economists, whose research aims to provide answers to the global labor market challenges of our time. Our key objective is to build bridges between academic research, policymakers and society.

IZA Discussion Papers often represent preliminary work and are circulated to encourage discussion. Citation of such a paper should account for its provisional character. A revised version may be available directly from the author.

ISSN: 2365-9793

**IZA – Institute of Labor Economics**

Schaumburg-Lippe-Straße 5–9  
53113 Bonn, Germany

Phone: +49-228-3894-0  
Email: [publications@iza.org](mailto:publications@iza.org)

[www.iza.org](http://www.iza.org)

## ABSTRACT

---

# 'First in Family' University Graduates in England\*

Universities around the world are attempting to increase the diversity of their student population. This includes individuals who are 'first in family' (FiF), those who achieve a university degree, but whose (step) parents did not. We provide the first large scale, quantitative evidence on FiF graduates in England using a nationally representative survey linked to administrative education data. We find that FiF young people make up 18 percent of a recent cohort, comprising nearly two-thirds of all university graduates. Comparing individuals with no parental higher education we show that ethnic minorities and those with higher levels of prior attainment are more likely to experience intergenerational educational mobility and become a FiF. Once at university, those who are FiF are more likely to study Law, Economics and Management and less likely to study other Social Sciences, Arts and Humanities than students whose parents are university graduates. We also find evidence that FiF students are less likely to graduate from elite universities and have a higher probability of dropping out, even after prior educational attainment, individual characteristics and socio-economic status are taken into account.

**JEL Classification:** I21, I23, I24

**Keywords:** higher education, widening participation, university access, dropout, intergenerational educational mobility

**Corresponding author:**

Nikki Shure  
UCL Institute of Education  
Department of Social Science  
20 Bedford Way  
London, WC1H 0AL  
United Kingdom  
E-mail: [nikki.shure@ucl.ac.uk](mailto:nikki.shure@ucl.ac.uk)

---

\* The Nuffield Foundation is an endowed charitable trust that aims to improve social wellbeing in the widest sense. It funds research and innovation in education and social policy and also works to build capacity in education, science and social science research. The Nuffield Foundation has funded this project (grant number EDO/43570), but the views expressed are those of the authors and not necessarily those of the Foundation. More information is available at [www.nuffieldfoundation.org](http://www.nuffieldfoundation.org). This work was supported by the Centre for Global Higher Education (CGHE). CGHE is a research partnership of international universities supported by the Economic and Social Research Council, the Office for Students and Research England (grant reference ES/M010082/1).

## 1. Introduction

Educational attainment gaps by socio-economic background have narrowed in Britain since the 1980s, driven in part by the expansion of higher education (Sutton Trust, 2017). This rapid expansion has meant an increase in participation from only five percent attending university in the 1960s to thirty percent in the 1990s (Finegold, 2006). More recently the figure stands at forty-two percent of those aged 25-29 achieving a tertiary degree (HESA, 2018). Despite this overall expansion in higher education provision, there is evidence of horizontal stratification, where students from poorer backgrounds are less likely to access top universities and study for high status subjects (Britton et al., 2016; Sutton Trust, 2017). Thus, an educational advantage for those from higher social class backgrounds is maintained, which raises important questions about social justice and fairness of a higher education system that enables such differentiation.

This paper looks specifically at the role intergenerational educational mobility plays in access to university, subject studied, institution attended and risk of dropout, and contributes both to the academic debate and the policy discussion. We examine ‘first in family’ (FiF) individuals, those students who attend university and achieve a university degree (BA/BSc or higher) but whose (step) mother and (step) father did not, which is the concrete operationalisation of intergenerational education mobility in the policy context.

The Widening Participation (WP) agenda in the UK focuses on increasing access and participation from disadvantaged and vulnerable groups, such as those from low income families, those who are eligible for Free School Meals (FSM), those from a low class background, first in family students, young carers and those who have been in care, those with disabilities or special education needs, and those from minority ethnic backgrounds, all of whom traditionally had limited participation in HE. Previous research on WP has looked at how FSM status or growing up in a poor neighbourhood, (e.g. Chowdry et al., 2013; Boliver, 2013) and examined how students with disadvantage fare when they get to university (Hoare and Johnston, 2010), but has yet to focus on first in family to achieve a degree using quantitative analysis.

While FiF students have captured popular interest, for example, the BBC profiled students who were the first in their family to attend university at the beginning of the academic year 2017/18 as a specific form of disadvantage (Coughlan, 2017), there is currently no quantitative research in the UK examining who these students are and what choices they make. This paper answers the following research questions:

1. What proportion of young people in England are FiF?

2. What are the individual and socio-demographic characteristics of those who are FiF?
3. What is the share of FiF among graduates by subject and HE institution?
4. How does the university institution type, subject studied and university non-completion differ by FiF status compared to those who match their parental education with a degree?

The aim of this paper is to provide the first comprehensive, descriptive statistics on the FiF group to achieve a degree as compared to their peers. To our knowledge, this research is the first to explore the FiF population in England using large scale, nationally representative data and will hopefully inform the WP agenda of universities.

## **2. Related Literature**

The only study looking at first in family students in the UK that we are aware of examines the biographical histories of 129 ‘first generation’ undergraduates to learn more about their experience at university (Stuart, 2006). Stuart finds that friendships were a major factor in determining their success. Research in the US and Australia has shown that FiF students are less likely than their peers with university educated parents to apply to college, and ultimately enrol (Engle, 2007; Toutkoushian et al., 2015; O’Shea et al., 2017). Moreover, in the US there is evidence that first generation students are less-well prepared for HE studies, take less-selective courses and are more likely to drop out (Forrest Cataldi et al., 2018). The evidence also suggests that FiF students tend to have lower high school GPAs and SAT scores (Riehl, 1994), tend to go to college later (Fallon, 1997) and choose less selective institutions (MacDermott et al., 1987).

There is, however, a large literature on socioeconomic gaps in access to higher education in the UK (e.g. Blanden and Machin, 2004). We know that parental education has a substantial impact on the educational levels of their children (e.g. Tramonte and Willms, 2009; Wilks and Wilson, 2012) and that pupils from lower SES backgrounds are less likely to aspire to attend university and have concrete plans backing up these aspirations (Jerrim and Shure, 2016). Pupils from disadvantaged backgrounds are also less likely to apply to high-status universities than those from a private school background or with parents from higher professional or managerial occupations (Boliver, 2013). Even if they do decide to apply to a Russell Group university, those from lower socio-economic backgrounds are less likely to be accepted (Boliver, 2013; Jerrim, 2013). Interestingly the findings hold even when taking into

account A Level results, which suggests that part of the reason we see lower participation in study at high-status universities is not completely driven by prior attainment, but instead may be based on the decisions that students make and the increased rates of rejection by university. This is partly confirmed by Anders (2012) who finds that the differences in rate of entry to university by socio-economic status is driven by applications to university rather than the decisions that universities make about acceptance/rejection. Young people are not selecting university as a viable horizon and are therefore discounting themselves from the process. In addition, we see that even *if* these young people from lower socio-economic backgrounds make it to university, they are less likely to end up in high status occupations (Macmillan, et al., 2015).

There is some evidence that pupils from lower socioeconomic backgrounds in the UK lack information about the returns to education (McGuigan et al., 2016). This mechanism may be especially salient for FiF students since they lack role models who have completed HE and have this information and may lead them to select lower ranked institutions and to study less prestigious subjects or subjects with a lower economic return (Sutton Trust, 2017). These findings are consistent with the ‘Effectively Maintained Inequality’ (EMI) hypothesis (Lucas, 2001). EMI posits that those from higher socio-economic backgrounds are able to qualitatively differentiate their educational experiences through subject studied and institution attended and can therefore maintain their position on the labour market. Given that HE plays a fundamental role in improving later labour market and life outcomes and social mobility the FiF indicator is an important issue to explore from a socioeconomic inequality and mobility perspective (Gregg, Macmillan, and Vittori, 2016).

### **3. Policy context**

Widening participation has been a focus of the UK educational policy agenda since Tony Blair announced the target to get 50 percent of young people into higher education at the Labour Party conference in 1999 and remains high on the political agenda today. The government further affirmed this intention in the 2003 White Paper, ‘The Future of Higher Education’, in which it stated the aim to see ‘all HEIs (higher education institutions) excelling in teaching and reaching out to low participation groups’ (DfE, 2003: 22). This intention was put into action in 2004, with the creation of the Office for Fair Access with the remit to widen participation, improve access and to manage bursaries (David, 2012). Thereafter in 2005, the Higher Education Funding Council for England (HEFCE) and the Economic and Social Research Council (ESRC) commissioned research projects to examine the reach of WP in HE and the

best ways to achieve fair access for all (Gorard et al., 2006, 2007; Wakeling and Kyriacou, 2010).

There is an assumption that universities should be doing more to widen participation and encourage a diverse student body especially in the context of the changing costs of higher education. Recent changes to the higher education fee structures in the UK have raised concerns about whether the rising costs of going to university have reduced the number of young people applying to and attending university, especially those from poorer backgrounds. In 2006-07, top-up university fees were introduced in England and Northern Ireland, and despite universities being allowed to choose their fee amount, almost all institutions chose to charge the full £3,000 per annum fee (Wyness, 2010). All of the young people in our data were eligible to start university in 2008-09, which means that they were affected by this policy change. In addition to this policy change, the Next Steps cohort also faced some administrative changes in loan and grant entitlement, which ultimately did not result in an overall change to access to finances, rather changes in the application process (see Wyness (2010) for additional information). It is worth noting that most students do not have to pay their fees in advance of study and they can take out a government endorsed student loan for the full value of the fees and a contribution to the costs of living. These are ‘income-contingent’ student loans which mean that graduates only start to repay the loans when they are earning over a certain income threshold, which reduces some of the risk involved in higher education study. Nevertheless, this policy context is important to bear in mind when thinking about Widening Participation.

Identifying whether a student has characteristics in line with the Widening Participation agenda is achieved through the application form for Universities and Colleges Admissions Service (UCAS). UCAS’s main role is to organise the applications for British universities. This centralised application system has a section on the form called ‘Additional Information’, which includes mandatory questions about ethnic origin, national identity and occupational background. None of these monitoring responses are sent to universities until after the end of the application cycle or once a place has been secured. In addition to these mandatory questions there are further optional questions used for equality monitoring, where applicants can highlight their individual circumstances which may be relevant to their application. These questions include information on parental education, whether they have ever been in care, or taken part in WP activities (such as summer schools) in order to help admissions tutors identify support needs or WP characteristics to inform admissions information (UCAS, 2018). To the best of our knowledge, 15 of the 24 Russell Group universities use FiF as a characteristic in order to widen participation (see the Appendix), although it is likely that a higher proportion



will make use of the aforementioned contextual admissions procedures. Nevertheless these are both reliant on the applicant reporting their status on the application form.

This ‘contextualised admissions’ information will be shared with universities alongside the full application to provide admissions tutors with a more complete picture of the circumstances that prospective students have faced. Contextualised admissions may lead universities and colleges to accept students with particular socio-demographic characteristics with relatively lower scores, i.e. to make contextual offers, in order to widen access. The contextualised admissions agenda has aimed to improve fair access since the publication of the Schwartz Report in 2004 and attempts to use a wider range of indicators to identify who ‘merits’ a place, rather than just looking at attainment alone. The stakes for universities are high. Over time, the WP agenda has become a metric on which to judge universities’ success beyond traditional league tables (Sundorph, Vasilev, and Coiffait, 2017). For a more detailed exploration of contextualised admissions see Boliver et al. (2017).

#### **4. Data and methods**

We use Next Steps, which follows a cohort of young people born in 1989/1990, and comprises eight waves of data until age 25 (UCL, 2018). Next Steps began in 2004 when the sample members were aged between 13/14: these young people answered questions about their own life and their parents were surveyed for the first four years. This cohort study is linked to the National Pupil Database (NPD) which is a census of pupils attending schools in England, allowing us to access their national school exam results.

Respondents of the Next Steps study were selected to be representative of young people in England using a stratified random sample of state and independent schools, with disproportionate sampling for deprived schools. In deprived schools, students of minority ethnic backgrounds were over-sampled (CLS, 2018). The first wave started with a 21,000-observation issued sample of 13/14-year old students with an average response rate of 74%, resulting in a 15,770-observation initial sample. At age 16/17 a 600-participant ethnic boost sample were added to the study. Sample weights are published to ensure the initial representativeness of the sample as well as non-response weights to attrition.

Schools are the primary sampling units of Next Steps, then pupils within schools. The two-stage sampling design presents a possible clustering effect due to between-school differences; therefore, all models that we use in this paper are adjusted for school clusters. In the first four waves both the cohort member and their parents were interviewed, and the

information content of all variables on family background and parental education that we use in this paper was reported directly by the parents.

The information on the cohort members' degree attainment comes from the age 25 data that covers 7,707 young people, 36.7% of the initially drawn sample and 49% of the actual sample of the first wave. All results that we present in this paper are estimated using the final weights constructed by the data provider to take care of the initial oversampling of disadvantaged schools and ethnic minority students, school non-compliance, the Wave-4 ethnic boost, and attrition across all waves. In order to avoid dropping cases with missing or unknown information on WP measures or background variables, we take the first available response mentioned over the first four waves. We take care of any remaining item non-response using missing flags.

Our main variable of interest is whether the young person is the first in the family to achieve a degree. That is, neither the cohort member's biological mother or father (or resident step parents) had achieved a university degree (BA/BSc or higher) by the time the cohort member was aged 16/17 (i.e. before having an opportunity to apply to a university) but the cohort member themselves achieved a degree by the age of 25. The information on parental graduation is based on parental reports of education level achieved and cohort members also reported their own educational attainment. Our focus is on the consequences of growing up in a family where neither parent has graduated; we concentrate on intergenerational educational mobility as we are unable to look at whether an older sibling attended university due to data constraints. This also corresponds with the WP indicator, which only asks whether or not an individual's parents achieved a degree.

FiF young people might differ from their peers over several observed and unobserved domains. We make use of the first four waves of Next Steps, using a combination of parent and young person report, to capture their prior educational attainment and socio-economic characteristics. These include:

- *Parental education* measured as the highest educational attainment reported by parents in the first four waves;
- *Parental social class* measured by taking the highest class category of parents mentioned from age 13-16 (measured using the National Statistics Socio Economic Classification (NS-SEC) which uses occupational types to capture dimensions of social class (Rose and Pevalin, 2003)). We make use of the three-category NS-SEC, which consists of: Higher Managerial, administrative and professional occupations;

Intermediate occupations; Routine and manual occupations (ONS, 2010) from parental report;

- *Equivalised permanent family income*, an average of the household income over the first four waves and divide by the square root of household size to provide a measure of equivalised permanent income as reported by the parents). This has been shown to have a larger effect on young people's educational outcomes than transitory income (Jenkins and Schluter, 2002);
- *Housing tenure* measured by taking the highest tenure reported when the cohort member was aged 13 and 14 as reported by the parents (owns a property or rents);
- *Ethnicity* as reported by the young person;
- *Gender* as reported by the young person;
- *Special educational needs (SEN)* from age 13 to 16 as reported by the young person;
- *Free school meal (FSM)* eligibility registered by administrative data (NPD);
- *Key Stage 3 scores*, results taken from school tests taken at age 13 from administrative data (NPD));
- *Capped linear GCSE (Key Stage 4) score*, results taken from school tests taken at age 16 from administrative data (NPD). The GCSE scores are capped to the best eight subjects studied and the grades translated into a linear score where the worst grade, G, is allocated 16 points and thereafter each grade improvement is worth six additional points taken from administrative data (NPD));
- *School type* (state funded vs. independent) attended at age 13 using administrative data (NPD);
- *Number of A levels*, specific exams taken usually at age 18 by those who want to apply to university;
- *The percentile rank of the young person's A level point score* taken from the administrative data source *if* they did A levels. To compute this we first standardise the A level result by subject, that is, each student is given an average score by taking the total point score by subject and dividing it by the number of modular exams taken for that subject code. Thereafter, we follow the approach taken by Chowdry, Crawford and Goodman (2011), allocating each student a unique rank within that subject; these ranks run from zero to one hundred, creating a variable which captures relative position. To allocate an overall rank position for students, we sum the rank position for the four best subjects studied at A level and calculate the mean rank. The total rank

standardised A level can be interpreted as a percentile rank position across the whole cohort, running from 0-100.

We investigate the predictors of becoming FiF using probit models to predict the probability of graduation on three subsamples of the Next Steps data. We start with the total subsample of young people whose parents are not graduates (6,174 observations). Then, we restrict the analytical sample to those who stayed in school after completing compulsory education at age 16, i.e. attained any Level 3 studies (3,758 observations). Lastly, we look at those who explicitly prepared to university application by taking A-level exams (2,875 observations). A-levels are not necessarily prerequisites to university participation, but the majority of students applies to university after completing A-level examinations.

While we cannot identify the causal effects of being FiF on HE outcomes, by controlling for prior educational attainment and a rich set of socio-economic background characteristics we are able to test whether any systematic association still remains over and above these observable differences. We examine whether subject, institution, and university non-completion varies by FiF status using multinomial logit and simple probit models. With respect to degree subject choice, following the approach taken by Sullivan et al. (2018) and Walker and Zhu (2011), we group degree subjects into four main categories: Science, Technology, Engineering and Mathematics (STEM); Law, Economics and Management (LEM); Social Sciences, Arts, Humanities and Languages (OSSAH) and Combined or Other degrees (OTHER) which may include a degree in French and Management, for example.

While earning higher or lower wages is certainly not the only relevant measure of labour market success, wages provide a simple and measurable outcome to consider. In particular, we examine whether FiF students are more likely to choose ‘high-earning’ or ‘low-earning’ subjects. Grouping degree subjects to the above mentioned four categories enables us to examine the ranking of labour market returns by subject group in three datasets, namely Next Steps, the Labour Force Survey (LFS) and the Longitudinal Educational Outcomes (LEO) data. Table 1 shows the average wage measures in the three databases by course categories; and shows that graduates of STEM and LEM courses earn more in all of them. Moreover, we estimate Mincer-type wage models (Bjorklund and Kjellstrom, 2002) on Next Steps data that collects information on young persons’ wages and find that the wage-return ranking remains, albeit with a narrowing of the gaps, even after taking into account gender; age; age-squared; duration of employment; duration-squared; potential experience and potential experience-squared, and find that the ranking remains stable. On the basis of these results we create a

binary category which defines high-earning subjects as STEM and LEM subjects and the OSSAH and OTHER as low-earning subjects.

[TABLE 1 HERE]

We also identify whether FiFs are more likely to study at certain institutions. To capture this, we identify whether they have ever reported attending Oxbridge, a Russell group or Other university between the age of 18-25. ‘Oxbridge’ is a portmanteau for Oxford and Cambridge, the most historic and elite universities in England; Russell Group institutions are research intensive institutions and are considered prestigious; and the Other group includes relatively newly established (post-1992) institutions and other non-Russell Group institutions.

We are also interested in whether there is any evidence of non-completion of degree by the cohort member. This is computed by identifying whether the respondent ever mentioned attending university at age 18, 19 or 25 but did not report achieving a degree (at any universities) by age 25. In our data, university participation means that they may have only attended university for a week or a day, potentially without formal enrolment, while the national dropout figures only capture those who have formally enrolled and did not complete that particular course of study.

## **5. Results**

What proportion of young people in England are FiF?

We begin by quantifying the proportion of young people in England who are FiF. Table 2 shows the proportion of young people who achieve a degree versus not, with reference to parental education levels. The results show that 27 percent of the sample achieve a university degree by age 25. This figure is somewhat comparable to the graduation rate captured by the 2015 Annual Population Survey (APS) where the weighted share of those with a degree in this cohort is 39.6% (ONS, 2019). The sample and definitions however differ between these studies. The APS sample is representative of 80,000 households across the UK and therefore may not be representative of 25 year olds, whilst Next Steps is representative of 25 year olds who have been living in England in 2004. The APS graduation rate takes all types of higher education qualifications into account, including college and university degrees (BA/BSc/MA/MSc or above) and below-degree level HE diplomas and certificates (i.e., HNC/D), while in Next Steps the definition only includes college and university degrees and not any below university degree

level diplomas or certificates. Thus, the share of graduates indeed has to be higher in APS than in Next Steps. We believe the definition we use in Next Steps is the one in line with the spirit of the WP agenda.

The breakdown of the weighted sample shows that 18 percent are the first in family to achieve a degree while 9 percent are not the first in family to achieve a degree (Table 2). Thus, about two-thirds ( $18.6/26.8=0.67$ ) of recent graduates are FiF. Again, note that we use the same definition to capture whether parents are graduates or not as in the case of the cohort members. The Higher Education Statistical Agency (HESA), that collects data on students in higher education in the UK, considers parents with below-degree level HE qualifications as graduates and thus finds a higher share of graduate parents and lower share of non-graduate parents and FiF graduates than what we find in Next Steps. HESA estimates the proportion of FiF at 45% for a similar cohort with commencement date in the academic year 2008/2009. Applying the HESA-definition of FiF to the Next Steps data results in a similar share of FiF among university graduates (49%).

While 27% of the Next Steps sample graduate by age 25, almost three-quarters of young people, 73% do not (Table 2). Breaking down by parental graduation, approximately 65 percent of the sample do not achieve a degree and have parents who also did not and around eight percent have downward educational mobility (Table 2); that is, they did not achieve a degree by the age of 25 but they have at least one parent who has a degree. This downwardly educationally mobile group may be of interest for future analysis. Looking at the raw probabilities of graduation by parental graduation, children of graduate parents are 52% ( $8.5/(8.5+7.9)$ ) likely, while children of non-graduate parents are only 22% ( $18.3/(18.3+65.3)$ ) likely to earn a university degree by age 25 (Table 2).

[TABLE 2 HERE]

## **5.2 What are the individual and socio-demographic characteristics of those who are FiF compared to their peers?**

In order to identify the characteristics of the FiF students we first examine their descriptive statistics. Table 3 shows the demographic characteristics by proportion (and mean) of the four groups: (1) FiF to achieve a degree; (2) the matches parents' education who have a degree; (3)

the matches parents' education with no degree; and (4) those who have downward educational mobility, where at least one parent has a degree but the young person does not.

[TABLE 3 HERE]

A priori, we would expect groups (1) and (3) to be similar because both groups have parents without a degree; however, they differ on a number of dimensions in the raw descriptive statistics. The prior attainment for FiF group (1) is higher than for those who match their parents with no degree (3) but lower than those who match their parents' education with a degree (2). This is captured by all measures of prior educational attainment that we use (Key Stage 3 results; GCSE results (Key Stage 4); standardised A level results and number of A levels studied). This indicates that the FiF's pathway to university is established during secondary schooling. The descriptive statistics also reveal that a smaller proportion of the FiF group (1) are from higher managerial or professional backgrounds; have lower household incomes; a smaller proportion own their own home; fewer of them attended an independent school and more of them are eligible for FSM than those who match their parents' education with a degree (2). However, the FiF have higher levels of socio-economic status than their peers who match their parents' education with no degree (3). Descriptively the FiF group comprises more ethnic minorities than those who match their parents education (2 & 3), and a greater proportion of women can be found in the FiF group than those who match their parents' education (2 & 3).

To identify whether these descriptive statistics are indicative of deeper statistically significant patterns in conditional models, we focus on those who have parents without a degree and compare FiF (1) with those who do not achieve a degree (3) in order to explore which factors are predictive of degree attainment. This will help us to understand the differences between FiF and those who are potential FiFs. We first run the analysis on the whole sample of those with no parental education (groups 1 & 3).

Table 4, Model 1 shows the average marginal effects (AME) computed from a probit model predicting degree achievement on the full subsample of young people whose parents do not have a degree (1 & 3). The results in Model 1 show that those who achieve a degree, i.e. become FiF, have statistically significant higher levels of prior attainment than those who do not. Moreover, we see that compared to those who are White, those who are Indian, Pakistani/Bangladeshi, Black Caribbean, Black African and Other are significantly more likely to achieve a degree and be FiF. Young people who study at an independent school are 19 percentage points more likely to be FiF and those whose parents rent their home compared to

those who own it or have a mortgage are four percentage points less likely to achieve a degree. We also see some variation by parental education below degree level, for example those who have parents who do not have any qualifications are eight percentage points less likely achieve a degree than those with parents who have some higher education (but with no degree). However, we do not see any significant difference by gender, SEN status or FSM eligibility. We next restrict the sample to just those who study for Level 3 qualifications (Table 4, Model 2), i.e. who decided to stay in school after the end of compulsory schooling at age 16 and thus at least theoretically had the possibility to attend a university and graduate. Many of the aforementioned relationships still hold, including prior attainment, parental education, housing tenure and ethnicity predicting degree attainment. Further exclusion of the sample so we only have those who study for A levels (Table 4, Model 3), i.e. who directly get prepared for university application, weakens some of these relationships, leaving only ethnicity and prior attainment as statistically significant. However, in these last two models, whether one attends Level 3 studies or prepares for A levels might be related to their socioeconomic and individual background already and thus the sample restriction itself captures some their effects. Overall we find that the FiF group are uniquely different than those who match their parents with no degree and is suggestive of cultural differences and attainment mattering more for degree completion, once taking into account post-16 educational progression.

[TABLE 4 HERE]

### **5.3 What is the share of FiF among graduates by subject and HE institution?**

We want to understand where FiF students end up in terms of subject and institution to be able to quantify the degree to which horizontal stratification occurs. Figure 1 captures the share of first in family graduates across subjects. In order to show the expected labour market returns of subjects, we plot subjects in order of increasing averages wages computed from Next Steps. The share of FiF varies between the 47-87 percent of graduates across subjects. Interestingly, the proportion of FiF is almost equal across some high-return, high-prestige and demanding subjects, like Medicine (47%) and Engineering (57%), and in some low-return and probably comparably less-demanding subjects like Languages and Linguistics (51-55%) or Social studies (61%).

[FIGURE 1 HERE]



The subjects which attract a high share of FiF are just as heterogeneous. In Education, the share of FiF is 87 percent. The second highest share of FiFs is found in Business and administrative studies (79%), followed by Mass communication (78%), Subjects allied to medicine (76%) and Law (75%). Overall, the raw data suggest that FiF may be more likely to choose subjects that offer relatively good labour market perspectives but are not overly competitive, rather than subjects that are associated either with very low wage returns or with very high entrance requirements.

Figure 2 presents the share of FiF across HE institution categories. While their proportion is above 70 percent in non-elite universities, in the Russell Group it drops to 50, and at Oxbridge it is only 32 percent. At least descriptively, FiFs have a lower probability of ending up at high status institutions.

[FIGURE 2 HERE]

#### **5.4 How does the university institution type, subject studied and dropout rate differ by FiF status compared to those who match their parental education with a degree?**

Widening Participation campaigns often highlight increasing diversity in admissions, but increasing diversity in degree completion is ultimately the more important policy goal. We delve deeper into the descriptive statistics previously presented to see if FiF (1) and those who match their parent's education with a degree (2) differ in subject selection; institution type; and dropout rate.

[TABLE 5 HERE]

Table 5 shows the AME computed from a multinomial logit model which categorises degree subjects into the four groups presented in Table 1: STEM; LEM; OSSAH; and OTHER. The results are relatively stable across models where the control variables are included additively. Model 4 shows that FiF students are five percentage points more likely to study LEM subjects compared to those who match their parents' education with a degree and are five percentage points less likely to take OSSAH subjects. These results are net of prior attainment, individual characteristics and socio-economic status. We may interpret this finding as those who match their parents' education with a degree are more likely to take subjects which have more classical routes and that are less vocational, e.g. History, whilst those who are FiF are more likely to take subjects which have a direct route to the labour market e.g. Law.

[TABLE 6 HERE]

In Table 6 we run similar analyses on subject selected where 1 is equal to a ‘high-earning degree’ and 0 is equal to a ‘low earning degree’ using a probit model, computing average marginal effects. The computed AMEs in Model 1-3 are small and do not meet the statistical significance threshold. In Model 4 we see a positive and small coefficient for FiF, where being FiF is associated with a four percentage point increase in taking high earning subjects, although this is only significant at the ten percent level ( $p < 0.10$ ).

[TABLE 7 HERE]

With respect to institutional choice we run a multinomial logistic regression on attending either Oxbridge, Russell Group, or ‘Other’ universities, which includes the ‘grey brick’ universities and post 92 institutions (Table 7). We find that once taking into account prior attainment, individual characteristics and socio-economic status FiFs are three percentage points less likely to attend the elite Russell Group universities and six percentage points more likely to attend Other universities compared to the more advantaged group. This provides some evidence that the group who match their parents’ education with a degree maintains its advantaged position through institutional selection.

[TABLE 8 HERE]

Next, we examine the relationship between FiF status and non-completion in a probit regression model, with computed AMEs. Of the 7,707 who responded to the study at age 25, 26.8 percent achieved a degree and 40.0 percent reported attending university at some point. Therefore, we record 28 percent of having not completed a university (excluding 161 young persons who are still studying at university at age 25). The proportion of dropout is higher in Next Steps than the national average, due to differences in the way they are calculated, and so care must be taken in interpreting the findings associated with non-completion using this data.

We include everyone in the estimation sample who ever attended university and define dropping out as neither being currently at a university nor achieving a degree at any university by age 25. The final model (Table 8, Model 4) shows that those with parents with no degree are four percentage points more likely to drop out than their peers who would match their

parents' education with a degree net of prior attainment, individual characteristics and socio-economic status.

## **6. Discussion and conclusion**

The analysis presented in this paper is the first large scale quantitative study looking at first in family graduates (and potential graduates) in England. The fact that universities have been using FiF as a WP indicator without any exploration of its validity as an instrument has prompted this paper.

The evidence presented suggests that those who experience intergenerational educational mobility and become FiF have higher prior educational attainment than those who match the educational level of their parents with not going to university, and this result is true even among those who pursue A level study. Moreover, net of prior attainment we see a differential effect of being FiF by ethnicity; those from Black and minority ethnic groups are more likely to outperform their parents in achieving a university degree than those who classify themselves as White.

With respect to subject choice at degree level, we find that FiF are five percentage points more likely to take LEM subjects and five percentage points less likely to take OSSAH subjects than graduates who match the educational level of their parents. We also examined whether FiF take potentially 'high-earning degrees' and find a weakly significant difference, with the FiF group being four percentage points more likely to select high earning subjects. In summary, there are some horizontal differences in subject selection by educational mobility.

In addition to this, we see that FiF students are less likely to attend Russell Group universities than their peers with university-educated parents and more likely to attend 'Other' universities, after controlling for early educational attainment. This may be caused by asymmetrical understanding of the quality differences between institutions. Universities and schools should ensure that all students have access to high quality information on the costs and benefits of higher education.

We find evidence of a statistically significant difference between FiF status and the likelihood of dropping out of university, once we take into account prior attainment, individual characteristics and socio-economic status: students who would be FiF if they graduated are four percentage points more likely to drop out than students whose parents are graduated. As noted, the measure of non-completion used is a noisy one and so we must exercise caution, however it may be prudent to suggest universities offer support and introduce interventions (e.g. a mentoring scheme) to this FiF students.

So far we have given little attention to the mechanisms that may play a role in the intergenerational transfer of educational attainment. Parental values and the family environment may influence the decisions that young people make about education. Socialisation aspects in the home, such as parental involvement is associated with an overall increase in academic outcomes for children (Jeynes, 2007; Higgins and Katsipataki, 2015). A meta-analysis by Jeynes (2007) found that parental expectations, parental style, communication and monitoring homework accounted for an increase in half of a standard deviation. It is plausible that parenting practices are a mechanism which may explain higher education participation between groups; indeed, work by Bukodi and Goldthorpe (2013) found that there is a strengthening of the relationship between the 1958 and 1970 British birth cohorts of the effects of parents' education on their children's academic performance and that there are independent effects of parents' occupation and education on young people's educational outcomes. They argue that this may be as a result of schools placing more value on the involvement of parents in their children's schooling (e.g. overseeing and reviewing homework) and the procedures involved in applying to and accessing higher education have become more complex. Both of these scenarios benefit children of more educated parents. Interestingly, liquidity constraints have not been shown to have a more important effect than family background on educational choices during compulsory schooling (Chevalier and Lanot, 2002). However, it is plausible to expect that liquidity constraints may play a more important role in progression to higher education as a result of the rising and the opportunity cost of continued study in early adulthood.

Universities already make use of information on prospective students' socio-economic background, the types of school they attended and contextual results in order to inform their admission process. It will remain a persistent challenge for universities to identify those students who have some form of social disadvantage but high potential to succeed. While there is some evidence on 'what works' in terms of Widening Participation (e.g. Hefce, 2010; and Hoare and Mann, 2011), there needs to be a greater understanding of the policy interventions to increase participation among these underrepresented groups. Given that attainment drives some of higher education participation and progression, but not all of it, there needs to be an increase in interventions early on during the educational process to raise awareness of the costs, benefits and opportunities of higher education for young people.

## References

Anders, J. (2012) The link between household income, university application and university attendance, *Fiscal Studies*, 33(2), 185-210.

Bjorklund, A. and Kjellstrom, C., 2002. Estimating the return to investments in education: how useful is the standard Mincer equation?, *Economics of Education Review*, Elsevier, vol. 21(3), pages 195-210, June.

Blanden, J. & Machin, S. (2004) Educational inequality and the expansion of UK higher education, *Scottish Journal of Political Economy*, 51(2), 230-249.

Boliver, V. (2013) How fair is access to more prestigious UK universities? *The British Journal of Sociology*, 64(2): 344-64.

Boliver, V., Crawford, C., Powell, M., Craige, W. (2017) *Admissions in Context*. Available online at: <https://www.suttontrust.com/research-paper/admissions-in-context-access-gap/> (accessed 9 October 2018).

Britton, J., Dearden, L., Shephard, N., & Vignoles, A. (2016) *How English domiciled graduate earnings vary with gender, institution attended, subject and socio-economic background* (London: Institute for Fiscal Studies).

Bukodi, E., and Goldthorpe, J.H. (2013). Decomposing 'Social Origins': The Effects of Parents' Class, Status, and Education on the Educational Attainment of Their Children. *European Sociological Review*, 29(5), 1024-1039.

Centre for Longitudinal Studies. (2018). *Next Steps Age 25 Survey: User Guide* (p. 38). Retrieved from Centre for Longitudinal Studies website: [https://cls.ucl.ac.uk/wp-content/uploads/2017/11/5545age\\_25\\_survey\\_user\\_guide-1.pdf](https://cls.ucl.ac.uk/wp-content/uploads/2017/11/5545age_25_survey_user_guide-1.pdf)

Chevalier, A., Lanot, G., (2002). The Relative Effect of Family Characteristics and Financial Situation on Educational Achievement. *Education Economics*, 10(2), 165-181.

Chowdry, H., Crawford, C., Goodman, A., (2011). The role of attitudes and behaviours in explaining socio-economic differences in attainment at age 16. *Longitudinal and Life Course Studies*. 2(1), 59 – 76.

Chowdry, H., Crawford, C., Dearden, L., Goodman, A., Vignoles, A., (2013). Widening participation in higher education: analysis using linked administrative data. *Statistics in Society: Series A*. 176(2). 431-457.

Coughlan, S. (2017) Family's first student in Cambridge state school record. BBC. Available online at: <http://www.bbc.com/news/education-41401863> (accessed 27 September 2018).

David, M.E. (2012) Changing Policy Discourses on Equity and Diversity in UK Higher Education: What is the Evidence? In Hinton-Smith (ed) *Widening Participation in Higher Education: Casting the Net Wide* (Palgrave Macmillan: London).

Department for Education. (2018) Graduate outcomes (LEO): Employment and earnings outcomes of higher education graduates by subject studied and graduate characteristics. SFR

15/2018, 15 March 2018. Available online at: [https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment\\_data/file/690859/SFR15\\_2018\\_Main\\_text.pdf](https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/690859/SFR15_2018_Main_text.pdf) (accessed 15 October 2018).

Department for Education and Skills (2003) *The Future of Higher Education*. Available online at: [www.educationengland.org.uk/documents/pdfs/2003-white-paper-higher-ed.pdf](http://www.educationengland.org.uk/documents/pdfs/2003-white-paper-higher-ed.pdf) (accessed 21 July 2017).

Engle, J. (2007) Postsecondary access and success for first-generation college students, *American Academic*, 3(1), 25-48.

Fallon, M. V. (1997) The school counselor's role in first generation students' college plans, *The School Counselor*, 44, 384–393.

Finegold, D. (2006), The roles of higher education in a knowledge economy, Rutgers University, mimeo

Forrest Cataldi, E., Bennett, C.T., Chen, X., Simone, S.A. (2018) First Generation Students: college access, persistence, and postbachelor's outcomes, *Stats in Brief, U.S. Department of Education*. Available online at: <https://nces.ed.gov/pubs2018/2018421.pdf> (accessed 7 October 2018).

Gorard, S., Smith, E., May, H., Thomas, L., Adnett, N., & Slack, K. (2006) Review of widening participation research: addressing the barriers to participation in higher education. Bristol: HEFCE. Available online at: <http://dera.ioe.ac.uk/6204/1/barriers.pdf> (accessed 20 July 2017).

Gorard, S., Adnett, N., May, H., Slack, K., Smith, E., & Thomas, L. (2007) *Overcoming the barriers to higher education* (Stoke-on-Trent: Trentham Books).

Gregg, P., Macmillan, L., & Vittori, C. (2016) Moving Towards Estimating Sons' Lifetime Intergenerational Economic Mobility, *Oxford Bulletin of Economics and Statistics*.

Hefce (2010) Aim Higher summer schools: participation and progression to higher education, Higher Education Funding Council for England Issues Paper 2010/32. Available online at: <http://webarchive.nationalarchives.gov.uk/20180319114450/http://www.hefce.ac.uk/data/year/2010/Aimhigher,summer,schools,Participants,and,progression,to,higher,education/> (accessed 20 July 2017).

HESA (2018). Higher Education Student Statistics: UK, 2016/17 - Qualifications achieved. Available online at: <https://www.hesa.ac.uk/news/11-01-2018/sfr247-higher-education-student-statistics/qualifications> (accessed on 16 October 2018).

Higgins, S., Katsipataki, M. (2015) Evidence from meta-analysis about parental involvement in education which supports their children's learning, *Journal of Children's Services*, 10(3), 280-290.

Hoare, A., and Johnston, R., (2010) Widening Participation through Admissions Policy – a British case study of school and university performance. *Studies in Higher Education*, 1-21.

Hoare, T. and Mann, R. (2011) The impact of the Sutton Trust's summer schools on subsequent higher education participation, Report to the Sutton Trust. Available online at: <https://www.suttontrust.com/wp-content/uploads/2012/01/full-summer-school-report-final-draft-1.pdf> (accessed 18 September 2017).

Jenkins, S. and Schuller, C. (2002). The Effect of Family Income During Childhood on Later-Life Attainment: Evidence from Germany. IZA Discussion Papers (No. 604) <http://ftp.iza.org/dp604.pdf>

Jerrim, J. (2013) Family Background and access to 'high status' universities, Sutton Trust Report. Sutton Trust, London. Available online at: <https://www.suttontrust.com/wp-content/uploads/2014/08/john-jerrim-report-final-4.pdf> (accessed 21 September 2017).

Jerrim, J. & Shure, N. (2016) The Performance of 15-year-olds on PISA 2015: National Reports for England, Wales, and Northern Ireland, *Department for Education, London*. Available online at: <https://www.education-ni.gov.uk/sites/default/files/publications/education/ACHIEVEMENT%20OF%2015%20YEARS%20IN%20NORTHERN%20IRELAND%20PISA%202015%20NATIONAL%20REPORT.PDF> (accessed 21 September 2017).

Jeynes, W. H. (2007). The relationship between parental involvement and urban secondary school student academic achievement: A meta-analysis. *Urban Education*, *42*(1), 82-110.

Lucas, S. R. (2001). Effectively Maintained Inequality: Education Transitions, Track Mobility, and Social Background Effects. *American Journal of Sociology*, *106*, 1,642-1,690.

Macmillan, L., Tyler, C., & Vignoles, A. (2015) Who gets the top jobs? The role of family background and networks in recent graduates' access to high-status professions, *Journal of Social Policy*, *44*(3), 487-515.

MacDermott, K. G., Conn, P. A., & Owen, J. W. (1987) The influence of parental education level on college choice, *Journal of College Admissions*, *115*, 3-10.

McGuigan, M., McNally, S. and Wyness, G. (2016) Student awareness of costs and benefits of educational decisions: Effects of an information campaign, *Journal of Human Capital*, *10*(4), 482-519.

Northern Ireland Statistics and Research Agency, Central Survey Unit, Office for National Statistics, Social Survey Division. (2016) *Labour Force Survey Annual Eurostat Dataset, 2014*. [data collection]. UK Data Service. SN: 7941, <http://doi.org/10.5255/UKDA-SN-7941-1>

O'Shea, S. May, J., Sone, C., & Delahunty, J. (2017) *University Experience and Family Life: Motivations, Transitions and Participation (Palgrave: London)*.

Office for National Statistics (2010). Standard Occupational Classification 2010; Volume 3 The National Statistics Socio-economic Classification: (Rebased on the SOC2010) User Manual. Available online at: <http://www.ons.gov.uk/ons/guide-method/classifications/current->

[standard-classifications/soc2010/soc2010-volume-3-ns-sec--rebased-on-soc2010--user-manual/index.html#5](#)) (accessed 18 December 2018).

Office for National Statistics, Social Survey Division. (2019). Annual Population Survey, January - December, 2015. [data collection]. 8th Edition. UK Data Service. SN: 7928, <http://doi.org/10.5255/UKDA-SN-7928-8>

Riehl, R. J. (1994) The academic preparation, aspirations, and first-year performance of first-generation students, *College and University*, 70, 14–19.

Rose, D., and Pevalin, D.J., (2003). A Researcher's Guide to the National Statistics Socio-economic Classification. First Edition. SAGE Publications Ltd.

Stuart, M. (2006) 'My friends made all the difference': Getting into and succeeding at university for first-generation entrants, *Journal of Access Policy and Practice*, 3(2), 162-184.

Sullivan, A. , Parsons, S. , Green, F. , Wiggins, R. D. and Ploubidis, G. (2018), Elite universities, fields of study and top salaries: Which degree will make you rich?. *Br Educ Res J*, 44: 663-680. doi:[10.1002/berj.3453](https://doi.org/10.1002/berj.3453)

Sundorph, E., Vasilev, D., & Coiffait, L. (2017) Joining the elite: How top universities can enhance social mobility. Reform Report. Available online at: <http://www.reform.uk/wp-content/uploads/2017/09/Joining-The-Elite-how-top-universities-can-enhance-social-mobility.pdf> (accessed 11 April 2018).

Sutton Trust (2017). The State of Social Mobility in the UK. Available online at: [https://www.suttontrust.com/wp-content/uploads/2017/07/BCGSocial-Mobility-report-full-version\\_WEB\\_FINAL.pdf](https://www.suttontrust.com/wp-content/uploads/2017/07/BCGSocial-Mobility-report-full-version_WEB_FINAL.pdf) (accessed on 16 October 2018).

Toutkoushian, R. K., Stollberg, R. S., & Slaton, K. A. (2015) Talking 'Bout My Generation. Working Paper available online at: [https://www.insidehighered.com/sites/default/server\\_files/files/Talking%20Bout%20My%20Generation%20Fall%202015%20ASHE.pdf](https://www.insidehighered.com/sites/default/server_files/files/Talking%20Bout%20My%20Generation%20Fall%202015%20ASHE.pdf) (accessed 21 September 2017).

Tramonte, L. and Willms, J.D. (2009) Cultural capital and its effects on education outcomes, *Economics of Education Review*, 29, 200-213.

Universities and Colleges Admissions Services (UCAS), (2018) Filling in your UCAS Undergraduate application. Available online at: <https://www.ucas.com/ucas/undergraduate/apply-and-track/filling-your-ucas-undergraduate-application> (accessed 14 March 2018).

University College London, UCL Institute of Education, Centre for Longitudinal Studies (2018). *Next Steps: Sweeps 1-8, 2004-2016: Secure Access*. [data collection]. 4<sup>th</sup> edition. UK Data Service. SN 7104, <http://doi.org/10.5255/UKDA-SA-7104-4>

Walker, I. & Zhu, Y. (2011) Differences by degree: Evidence of the net financial rates of return to undergraduate study for England and Wales, *Economics of Education Review*, 30(6), 1177–1186.



Wakeling, P., & Kyriacou, C. (2010) Widening participation from undergraduate to postgraduate research degrees: A research synthesis, Commissioned by the National Co-ordinating Centre for Public Engagement (NCCPE), and the Economic and Social Research Council (ESRC). Available online at: <https://www2.le.ac.uk/departments/doctoralcollege/about/external/publications/widening-participation.pdf> (accessed 21 September 2017).

Wilks, J. and Wilson, K. (2012) Going on to uni? Access and participation in university for students from backgrounds of disadvantage, *Journal of Higher Education policy and Management*, 34(1), 79-90.

Wyness, G. (2010) Policy changes in UK higher education funding, 1963-2009. Department of Quantitative Social Science Working Paper 10-05, UCL Institute of Education. Available online at: [https://www.researchgate.net/publication/46463033\\_Policy\\_changes\\_in\\_UK\\_higher\\_education\\_funding\\_1963-2009](https://www.researchgate.net/publication/46463033_Policy_changes_in_UK_higher_education_funding_1963-2009) (accessed 21 September 2017).

## Figures and Tables

**Table 1. Average wages by subject categories**

	Next Steps*, 2015-2016	LFS**, 1994-2009	LEO***, 2015
	Average gross hourly wage (GBP)	Average log weekly wages <sup>#</sup>	Median annual earnings 10 years after graduation (GBP)
STEM	13.0	2.87	34,696
LEM	14.2	2.92	34,145
OSSAH	11.4	2.72	27,060
OTHER	12.3	2.78	25,600
No. of observations	1,879	82,002	151,880

<sup>#</sup>Converted to January 2010 prices using the Retail Price Index (RPI) publishes by the Office for National Statistics.

Sources: \*UCL (2018). \*\* Walker, I. & Zhu, Y. (2011). \*\*\*DfE (2018).

**Table 2. Cross Tabulation: Degree Attainment by Parental Degree Attainment**

	Freq, (unweighted)	Percent of total, (unweighted)	Percent of total, (weighted)	HE graduation rate <sup>#</sup> , percent (weighted)
	Next Steps	Next Steps	Next Steps	Annual Population Study
<b>Graduates at age 25</b>	2,671	34.9	26.8	36.9
<i>(1) First in family</i>	1,853	24.2	18.3	
<i>(2) Match parents with degree</i>	818	10.7	8.5	
<b>Non graduates at age 25</b>	4,993	65.2	73.2	
<i>(3) Match parents with no degree</i>	4,321	56.4	65.3	
<i>(4) Downwardly mobile group</i>	672	8.8	7.9	
<b>Total</b>	7,664	100.0	100.0	

Information on parental education is not available for 43 persons.

<sup>#</sup>HE graduation rate in APS: the share of those having a Level-4 degree (below-degree level HE certificates and university degrees together) among those aged 25 in England in 2015.

Sources: UCL(2018) and ONS (2019).

**Table 3. Descriptive statistics of the sample: means and proportions of variables of interest**

	(1) First in family to achieve a degree	(2) Matched parents' education (degree)	(3) Matched parents' education (no degree)	(4) Downward educational mobility	Total
	Mean/%	Mean/%	Mean/%	Mean/%	Mean/%
<b><u>Prior Attainment</u></b>					
Key stage 3 (mean)	37.24	39.75	32.79	36.99	34.97
GCSE (capped linear score, mean)	360.40	385.43	292.42	344.40	323.29
Number of A levels (mean)	2.44	3.28	0.96	2.17	1.66
Rank standardised A level score	0.34	0.48	0.13	0.30	0.23
<b><u>Progression to Post-16 study</u></b>					
Vocational	9.66	4.77	24.39	16.52	18.05
A level	74.37	85.94	38.76	67.56	54.93
Unknown	15.97	9.29	36.84	15.92	27.02
<b><u>Parental Education</u></b>					
Degree of equivalent	0.00	100.00	0.00	100.00	19.44
Higher education below degree	27.68	0.00	17.29	0.00	16.44
A level or equivalent	22.72	0.00	21.04	0.00	17.35
GCSE A-C or equivalent	26.28	0.00	31.22	0.00	23.96
Level 1 and below	4.70	0.00	7.08	0.00	5.13
Other	2.48	0.00	2.64	0.00	2.09
No qualification	16.14	0.00	20.74	0.00	15.59
<b><u>Socio-economic status</u></b>					
Higher managerial	40.26	84.47	29.85	77.68	42.39
Intermediate	25.69	6.11	22.75	11.01	20.66
Routine and manual occupations	23.53	3.42	36.08	5.95	26.92
Long-term unemployed /other	10.52	5.99	11.32	5.36	10.03
Equivalentised HH income 13-16 (£10k, mean)	1.46	2.61	1.21	2.31	1.52
Owns/Mortgage	76.15	91.93	63.78	85.12	71.65
Rent/Other	23.85	8.07	36.22	0.00	28.35
State school	94.28	85.45	97.15	89.14	94.36
Independent school	3.56	12.59	1.43	9.23	3.85
Missing	2.16	1.96	1.41	1.64	1.79
Not eligible for Free School Meals (FSM)	73.45	77.26	69.41	78.13	71.99
FSM	10.47	1.96	14.81	5.65	11.59
Missing	16.08	20.78	15.78	16.22	16.43
<b><u>Individual characteristics</u></b>					
White	59.90	72.74	72.23	75.74	69.61
Mixed	3.62	6.36	4.26	5.21	4.41
Indian	11.06	5.38	4.70	3.72	6.22
Pakistani/Bangladeshi	12.90	4.65	11.83	4.17	10.65
Black Caribbean	3.02	1.59	2.59	2.98	2.62
Black African	4.32	5.26	1.90	4.91	3.11
Other	5.18	4.03	2.50	3.27	3.38
Male	40.69	47.31	44.34	46.43	43.96
Female	59.31	52.69	55.66	53.57	56.04
No special education needs (SEN)	95.74	94.25	89.12	89.88	91.34
SEN	2.10	3.79	9.30	8.48	6.90
Missing	2.16	1.96	1.96	1.64	1.76
No. of observations	1,853	818	4,321	621	7,664

Unweighted results. Source: UCL (2018).

**Table 4. Probit regression predicting degree attainment among those with parents with no degree, Computed Average Marginal Effects (AME)**

	Model 1		Model 2		Model 3	
	AME	se	AME	se	AME	se
<b>Parental education</b>						
<b>Ref: Higher education below degree</b>						
A level or equivalent	-0.05**	(0.02)	-0.04	(0.02)	-0.05	(0.03)
GCSE A-C or equivalent	-0.06**	(0.02)	-0.04+	(0.02)	-0.04	(0.03)
Level 1 and below	-0.04	(0.03)	-0.02	(0.04)	-0.03	(0.05)
Other	-0.03	(0.04)	0.01	(0.06)	-0.04	(0.07)
No qualification	-0.08***	(0.02)	-0.08*	(0.03)	-0.06	(0.04)
<b>Ref: Male</b>						
Female	0.00	(0.01)	-0.00	(0.02)	-0.02	(0.02)
<b>Ref: White</b>						
Mixed	0.03	(0.03)	0.02	(0.04)	0.06	(0.05)
Indian	0.25***	(0.03)	0.21***	(0.03)	0.16***	(0.03)
Pakistani/Bangladeshi	0.18***	(0.03)	0.15***	(0.03)	0.11**	(0.04)
Black Caribbean	0.18***	(0.04)	0.14**	(0.05)	0.07	(0.06)
Black African	0.38***	(0.04)	0.32***	(0.04)	0.28***	(0.05)
Other	0.20***	(0.04)	0.16***	(0.04)	0.17***	(0.04)
<b>Ref: No special educational needs</b>						
Special Educational Needs	-0.06+	(0.03)	-0.01	(0.05)	0.01	(0.06)
<b>Ref: Not Eligible for Free School Meals (FSM)</b>						
Eligible for FSM	0.02	(0.02)	-0.00	(0.03)	0.02	(0.04)
<b>Ref: State funded secondary school</b>						
Independent School	0.19**	(0.06)	0.05	(0.06)	-0.09	(0.07)
<b>Parental social class</b>						
<b>Ref: Higher Professional Managerial</b>						
Intermediate occupations	0.02	(0.02)	0.02	(0.02)	0.04	(0.03)
Routine and manual occupations	-0.02	(0.02)	-0.03	(0.03)	-0.03	(0.03)
Long term unemployed /other	-0.00	(0.03)	0.02	(0.04)	0.02	(0.04)
<b>Ref: Owns Mortgage</b>						
Rent/other	-0.04*	(0.01)	-0.04+	(0.02)	-0.04	(0.03)
Equivalised household income (multiple of £10,000)	0.01+	(0.01)	0.01	(0.01)	0.01	(0.01)
GCSE capped linear point score	0.00***	(0.00)	0.00***	(0.00)	0.00***	(0.00)
Key stage 3 score	0.01***	(0.00)	0.01***	(0.00)	0.01**	(0.00)
A level Standardised rank					0.00	(0.01)
Number of A levels studied					0.01	(0.01)
Observations	6,174		3,758		2,875	
Subsample of young people with parents who have no HE degree		✓		✓		✓
Subsample of students taking any level 3 qualification				✓		
Subsample of students taking A levels						✓

Cluster robust standard errors in parentheses  
 \*\*\* p<0.001, \*\* p<0.01, \* p<0.05, +p<0.10  
 Source: UCL (2018).

**Table 5. Multinomial Logit Regression Predicting Degree Attainment with Computed Average Marginal Effects**

	Science Technology Engineering & Maths		Law, Economics & Management		Other social sciences, arts & humanities		Other		
<b>Model 1</b>									
	AME	se	AME	se	AME	se	AME	se	
<b>Ref: Match Parents with Degree</b>									
FiF	-0.05*	(0.02)	0.06***	(0.01)	-0.04*	(0.02)	0.03**	(0.01)	
<b>Model 2</b>									
	AME	se	AME	se	AME	se	AME	se	
<b>Ref: Match Parents with Degree</b>									
FiF	-0.05*	(0.02)	0.04**	(0.02)	-0.02	(0.02)	0.03*	(0.01)	
Individual Characteristics						✓			
<b>Model 3</b>									
	AME	se	AME	se	AME	se	AME	se	
<b>Ref: Match Parents with Degree</b>									
FiF	-0.04+	(0.02)	0.05**	(0.02)	-0.03	(0.02)	0.02+	(0.01)	
Individual Characteristics						✓			
Socio-economic characteristics						✓			
<b>Model 4</b>									
	AME	se	AME	se	AME	se	AME	se	
<b>Ref: Match Parents with Degree</b>									
FiF	0.00	(0.02)	0.05*	(0.02)	-0.05*	(0.02)	-0.00	(0.01)	
Individual Characteristics						✓			
Socio-economic characteristics						✓			
Prior attainment						✓			
N									2,671

Individual characteristics include: Gender, ethnicity, SEN

Socioeconomic characteristics include: Class, income, housing tenure, FSM eligibility and school type

Prior attainment includes: Key stage 3, GCSE, Number of A levels studied and standardised A level grades.

Cluster robust standard errors in parentheses

\*\*\* p<0.001, \*\* p<0.01, \* p<0.05, + p<0.10

Source: UCL (2018).

**Table 6. Probit Model Predicting High Earning Subject Studied, Computed Average Marginal Effects (AME)**

All	Model 1		Model 2		Model 3		Model 4	
	AME	se	AME	se	AME	se	AME	se
<b>Ref: Match Parents with Degree</b>								
FiF	0.01	(0.02)	-0.01	(0.02)	0.00	(0.02)	0.04+	(0.02)
Constant								
N	2,671		2,671		2,671		2,671	
Individual Characteristics			✓		✓		✓	
Socio-economic characteristics					✓		✓	
Prior attainment							✓	

Individual characteristics include: Gender, ethnicity, SEN

Socioeconomic characteristics include: Class, income, housing tenure, FSM eligibility and school type

Prior attainment includes: Key stage 3, GCSE, Number of A levels studied and standardised A level grades.

Cluster robust standard errors in parentheses

\*\*\* p<0.001, \*\* p<0.01, \* p<0.05, + p<0.10

Source: University College London, UCL Institute of Education, Centre for Longitudinal Studies (2018). *Next Steps: Sweeps 1-8, 2004-2016: Secure Access.*

**Table 7. Multinomial Logit Regression Predicting Institution attended, Computed Average Marginal Effects (AME)**

	Russell Group		Oxbridge		Other University		Missing	
	AME	se	AME	se	AME	se	AME	se
<b>Ref: Match Parents with Degree</b>								
FiF	-0.03**	(0.01)	-0.00	(0.00)	0.06**	(0.03)	-0.03	(0.03)
N	2,671							
Prior attainment	✓							
Individual Characteristics	✓							
Socio-economic characteristics	✓							

Individual characteristics include: Gender, ethnicity, SEN

Socioeconomic characteristics include: Class, income, housing tenure, FSM eligibility and school type

Prior attainment includes: Key stage 3, GCSE, Number of A levels studied and standardised A level grades.

Cluster robust standard errors in parentheses

\*\*\* p<0.001, \*\* p<0.01, \* p<0.05, + p<0.10

Source: UCL (2018).



**Table 8. Probit Model Predicting Dropout, Computed Average Marginal Effects (AME)**

	Model 1		Model 2		Model 3		Model 4	
	AME	se	AME	se	AME	se	AME	se
<b>Ref: Match Parents with Degree</b>								
FiF	0.04**	(0.02)	0.04*	(0.02)	0.04*	(0.02)	0.04*	(0.02)
Observations	3,619		3,619		3,619		3,619	
Prior attainment			✓		✓		✓	
Individual characteristics					✓		✓	
Socio-economic status							✓	

Individual characteristics include: Gender, ethnicity, SEN

Socioeconomic characteristics include: Class, income, housing tenure, FSM eligibility and school type

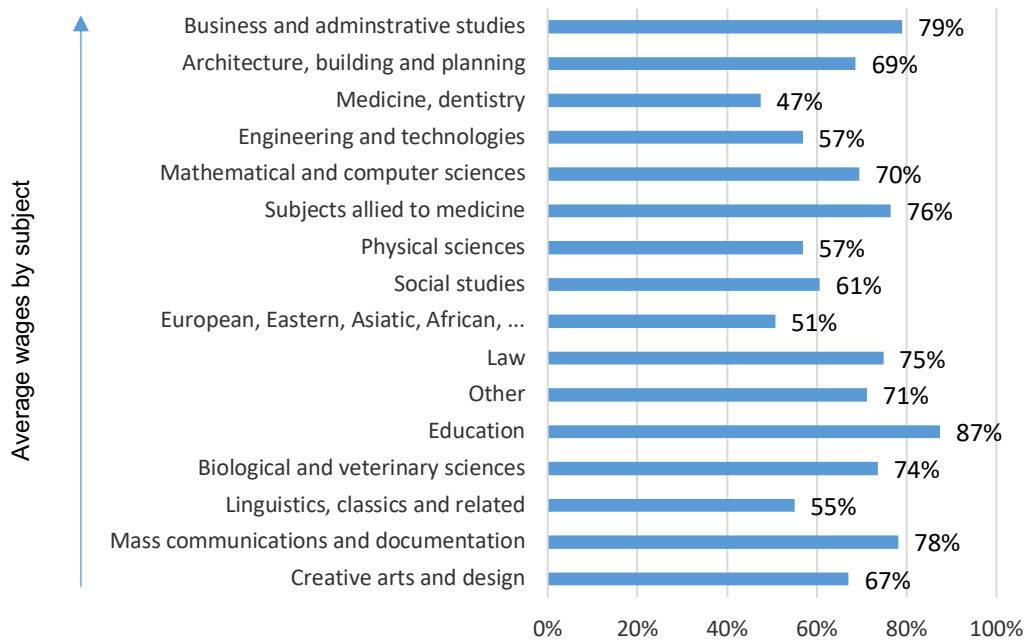
Prior attainment includes: Key stage 3, GCSE, Number of A levels studied and standardised A level grades.

Cluster robust standard errors in parentheses

\*\*\* p<0.001, \*\* p<0.01, \* p<0.05, + p<0.10

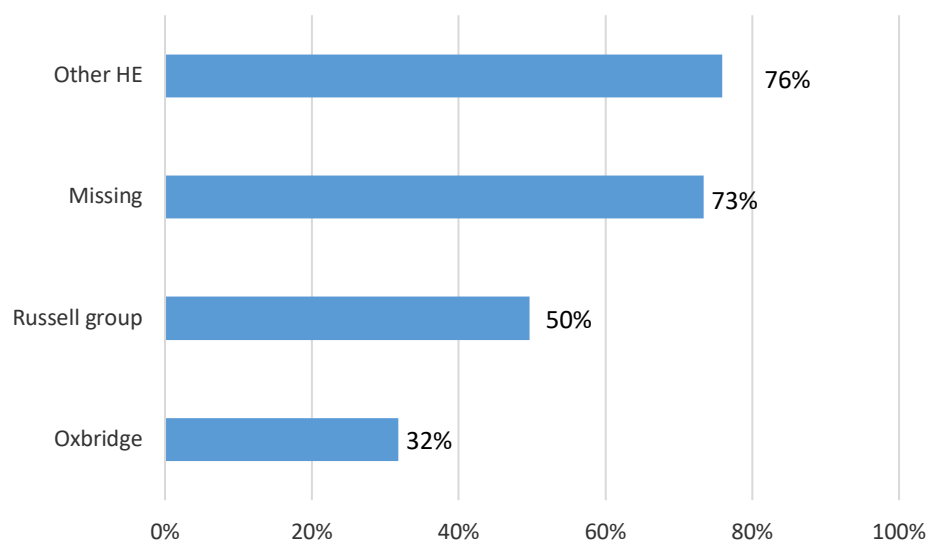
Source: UCL (2018).

**Figure 1: The share of FiF among graduates by subject (ordered by increasing wage returns)**



Weighted averages; Wave 8 survey weights are used. No. of observations: 2,459.  
Source: UCL (2018).

**Figure 2: The share of FiF among graduates by the type of HE institution**



Weighted averages; Wave 8 survey weights are used. No. of observations: 2,459.  
Source: UCL (2018).

## **Appendix: FiF Indicator Use at Russell Group Institutions**

The lack of research on FiF as a Widening Participation (WP) indicator means that there is no indication as to how systematically universities use it. In order to support the relevance of this paper, we focus on the 24 Russell Group institutions and determine how many of them use FiF as a WP indicator. The results presented in Table A1 below indicate that 15 of the 24 Russell Group universities use FiF as an explicit WP indicator in their admissions or other outreach programmes.

Institutions define FiF in a variety of ways, including pupils “with no parental history of HE” (University of Birmingham), pupils with little “family experience of university” (University of Cambridge), pupils who are the “first generation to consider higher education” (University of Edinburgh), or pupils with “no parental university degree” (UCL). There is clearly heterogeneity in how universities define FiF. While these differences may seem small, there is a substantial difference between the indicator applied by the University of Edinburgh (considering HE) and UCL (having a degree). For the purposes of this paper, we focus on parental degree because we are able to observe this in our data, but we are aware that FiF is being used in multiple ways across institutions. Importantly, however, FiF ignores whether or not siblings may have attended university and focuses on whether or not the young person is of the first generation to attend university.

For some institutions, it was difficult to determine whether or not they explicitly use FiF as a WP indicator. The University of Exeter, for example, does not list FiF as one of its own WP indicators, but participates in the Realising Opportunities national programme, which does use FiF as a criterion for participation. Other Russell Group institutions do not mention FiF in any of their WP materials. These include: University of Glasgow, University of Liverpool, University of Manchester, University of Oxford, and University of Sheffield. This indicates that not all institutions believe FiF is capturing a unique form of disadvantage and is worth using as a separate indicator.

Even for those institutions that use FiF as a WP indicator, the weight assigned to it may vary from institution to institution. As indicated in the third column of Table A1, some institutions may use FiF in their admissions (e.g. Cardiff) while others use it to target their outreach programmes (e.g. Cambridge). This heterogeneity of FiF indicator use is a result of institutional autonomy and should be kept in mind when assessing FiF as a WP criterion.

**Table A1. Russell Group institutions and FiF as a WP indicator**

Russell Group Institution	Uses FiF as Widening participation indicator	Example
1. University of Birmingham	Yes	“Our activity is targeted at students who are under-represented in Higher Education (HE) including students from lower socio-economic groups, from postcode areas with low progression to HE and <i>with no parental history of HE</i> [emphasis added]” (University of Birmingham, 2017)
2. University of Bristol	Yes	“The focus of outreach activity in 2017-18 will be long-term and targeted. We have taken an evidence based approach to the targeting of activity and have specific intervention progress measures (detailed in paras 13.7-13.11) to reflect this. For those interventions designed and delivered by the University we require participants on our programmes to fulfil the following criteria: attend a low performing school or college; live in a low participation neighbourhood; <i>be in the first generation of their family to progress to higher education</i> [emphasis added]; and live in the local area” (University of Bristol, 2017)
3. University of Cambridge	Yes	<p>“The Cambridge University Students’ Union (CUSU) Shadowing Scheme provides UK students with the chance to experience life as a Cambridge student first-hand. The Scheme, which has been running since 2000, targets those who are academically able but <i>who have little school or family experience of university</i> [emphasis added]”</p> <p>“Priority for [Easter and Summer Schools] is given to academically able students who have <i>no parental history of progression to higher education</i> [emphasis added]”</p> <p>(University of Cambridge, 2015)</p>
4. Cardiff University	Yes	“Widening access addresses the recruitment, retention and progression of students from a wide variety of groups traditionally under-represented in higher education. These include people from ethnic minority groups, from disadvantaged communities, people with disabilities and <i>those from families with no previous experience of higher education</i> [emphasis added]” (Cardiff University, 2017)
5. Durham University	Unclear	Unable to find Widening Participation/Access section on university website
6. University of Edinburgh	Yes	<p>“The University is engaged with prospective students, their families and advisers in a wide range of Widening Participation awareness and aspiration-raising projects and activities aimed at students who are:</p> <ul style="list-style-type: none"> <li>• <i>first generation to consider higher education</i> [emphasis added]</li> <li>• from low socio economic groups</li> <li>• attending schools where relatively few students go on to higher education</li> <li>• living in low participation neighbourhoods</li> <li>• mature students from the above groups</li> <li>• looked after / accommodated children or care leavers”</li> </ul> <p>(University of Edinburgh, 2017)</p>
7. University of Exeter	Unclear	<p>But they do participate in ‘Realising Opportunities’, which has the following entry criteria:</p> <p><b>“You must meet at least two of the following*</b></p> <ul style="list-style-type: none"> <li>• Live in a neighbourhood which has a low progression rate to higher education or an area which has a high level of</li> </ul>

		<p>financial, social or economic deprivation. This is defined by home postcode</p> <ul style="list-style-type: none"> <li>• <i>Come from a home where neither parent attended university in the UK or abroad. (If one or more parent is currently studying their first degree, or graduated from their first degree within the last five years, an application will still be considered)</i> [emphasis added]</li> <li>• Be in receipt of or entitled to discretionary payments/16-19 bursary/Pupil Premium at school/college</li> <li>• Be in receipt of or entitled to free school meals.</li> </ul> <p><b>Or alternatively meet the following:</b></p> <ul style="list-style-type: none"> <li>• be living in, or have lived in, local authority care or be a young carer**</li> </ul> <p>(Realising Opportunities, 2017)</p>
8. University of Glasgow	No	<p>The following tables document the <b>Scottish undergraduate entry requirements</b> for applicants who are within the following categories:</p> <ol style="list-style-type: none"> <li>1. Applicants who are or have lived in <b>Care</b>;</li> <li>2. Applicants who, at the time of application, are <b>living in a priority postcode</b> which is regarded by the Scottish Government as being within the 40% most deprived regions of the country, as categorised by the Scottish Index of Multiple Deprivation (SIMD). This is sometimes referred to as "MD" or "MD40";</li> <li>3. Applicants who attend a Widening Participation (WP) <b>Target School</b>;</li> <li>4. Applicants who are participating in a recognised pre-entry programme, such as <b>Top-Up</b> or <b>Summer School</b>.</li> </ol> <p>(University of Glasgow, 2017).</p>
9. Imperial College London	Unclear	<p>Unclear from website and not mentioned in Access Agreement (Imperial College London, 2017).</p>
10. King's College London	Yes	<p>“Groups of people who may be targeted in the drive to widen participation include:</p> <ul style="list-style-type: none"> <li>• Young people from low-income backgrounds</li> <li>• Young people from low-participation neighbourhoods (where very few people go on to higher education)</li> <li>• <i>Young people whose parents did not go to university</i> [emphasis added]</li> <li>• Young people in or leaving care</li> <li>• Young people living with a disability</li> <li>• Young people from an ethnic minority</li> <li>• Those returning to learning as mature students”</li> </ul> <p>(King’s College London, 2017).</p>
11. University of Leeds	Yes	<p>“Applicants with siblings who have completed or are currently undertaking a higher education course are eligible to apply (as long as their parents did not complete a higher education course)”</p> <p>(University of Leeds, 2017).</p>
12. University of Liverpool	No	<p>Not listed as one of their “vulnerable groups of students” targeted for outreach (University of Liverpool, 2017).</p>
13. London School of Economics and Political Science	Yes	<p>“We target the following pupils: Students from low performing state schools/schools with high proportion of students who qualify for free school meals.</p> <ul style="list-style-type: none"> <li>○ Students who are in receipt of/qualify for free school meals.</li> <li>○ Students who live in low participation neighbourhoods (POLAR 3 dataset)</li> <li>○ Students from under-represented ethnic groups, especially black African-Caribbean pupils.</li> </ul>

		<ul style="list-style-type: none"> <li>○ <i>Students with parents with no experience of higher education [emphasis added].</i></li> <li>○ Students in Local Authority Care.</li> <li>○ Students with a disability”</li> </ul> <p>(LSE, 2016)</p>
14. University of Manchester	No	Not an explicit group on their ‘Target Groups’ for Widening Participation (University of Manchester, 2017).
15. Newcastle University	Yes	<p>“If <b>neither</b> of your <b>parents/carers</b> have any of the following higher education qualifications you <b>might be eligible</b> for the PARTNERS Programme based on <b>parental HE experience and occupation</b>:</p> <ul style="list-style-type: none"> <li>• Higher Degree (eg MA, MSc, PhD, PGCE)</li> <li>• First Degree (eg BA, BSc)”</li> </ul> <p>(Newcastle University, 2017)</p>
16. University of Nottingham	Yes	<p>“Meet at least one of the following criteria:</p> <ul style="list-style-type: none"> <li>• be living in a household with an income under £42,000*</li> <li>• <i>be first generation to attend university [emphasis added]</i></li> <li>• be attending a school/college with an average point score per student of under 800</li> <li>• have a disability affecting your studies</li> <li>• be currently or have previously been in local authority care/looked after”</li> </ul> <p>(University of Nottingham, 2017)</p>
17. University of Oxford	No	Not an Access Agreement target category University of Oxford (2017).
18. Queen Mary University of London	Yes	<p><b>“Widening Participation Criteria</b> To take part in our activities students must meet one or more of the below criteria:</p> <ul style="list-style-type: none"> <li>• <i>parents did not attend Higher Education [emphasis added]</i></li> <li>• previously or currently eligible for free school meals</li> <li>• parents are from non-professional occupations</li> <li>• have a disability</li> <li>• is a young carer</li> <li>• is estranged from their family / living independently</li> <li>• <a href="#">have lived, or are currently living, in local authority care”</a></li> </ul> <p>(Queen Mary, 2017)</p>
19. Queen’s University Belfast	Unclear	<p>Unclear from website</p> <p>They also do not have an Access Agreement with OFFA.</p>
20. University of Sheffield	No	Not listed as a WP indicator on their website (University of Sheffield, 2017).
21. University of Southampton	Yes	<p><b>“Eligibility</b> Access to Southampton (A2S) is open nationally to students living permanently in the UK. Students must apply to A2S when they are in Year 12 or the first year of A-Level (or equivalent) study. To be eligible for the A2S scheme, you should have the potential to study at the University of Southampton and meet two or more of the following criteria:</p> <ul style="list-style-type: none"> <li>• <i>In the first generation of immediate family to apply to Higher Education, excluding brothers or sisters [emphasis added]</i></li> <li>• In receipt of a 16-19 Bursary or similar grant OR received Free School Meals at any point during your secondary school education</li> <li>• Attended a secondary school which achieved less than the national average 'Attainment 8' score in 2016*</li> <li>• Studies affected or disrupted by circumstances in your personal, social or domestic life</li> <li>• Are a Young or Young Adult Carer</li> </ul>

		<ul style="list-style-type: none"> <li>• Living or grew up in Local Authority care</li> <li>• Current home post code shows that you live in an area with low levels of progression to Higher Education. (Postcodes within the lowest 2 POLAR3 quintiles)”</li> </ul> <p>(University of Southampton, 2017).</p>
22. University College London	Yes	<p>“No parental university degree” is an essential criterion for widening participation activities</p> <p>(UCL, 2017)</p>
23. University of Warwick	Yes	<p>“We run a wide range of <a href="#">programmes and events</a> to encourage the most talented potential applicants and to ensure our student body is representative of our local and wider national communities. These activities are targeted at state school educated students, <i>students who would be the first in their family to attend university</i> [emphasis added], students from low socio-economic backgrounds and students who come from neighbourhoods where there is low progression to university. Ensuring the university is accessible to students from all backgrounds is one of the eight values set out in Warwick’s university strategy” (University of Warwick, 2017).</p>
24. University of York	Yes	<p>“We carefully target schools and colleges, using multiple indicators of disadvantage depending on the programme and partner agreements. These indicators include Polar 3, quintiles one and two; Indices of Multiple Deprivation (IMD); Income Deprivation Affecting Children Index (IDACI), Free School Meals, school performing below the national average at GCSE or at Key Stage 5. We also work with schools to carefully select those students who would benefit most from our programmes and use individual eligibility criteria including: LPN; <i>first in family to attend HE</i> [emphasis added]; children in care; free school meals; be in receipt of discretionary payments” (University of York, 2017).</p>

## Appendix References

Imperial College London (2017). *Student Recruitment and Outreach*. Available online at: <https://www.imperial.ac.uk/be-inspired/student-recruitment-and-outreach/>. (accessed 12 July 2017).

King’s College London (2017). *Widening Participation: Frequently Asked Questions*. Available online at: <https://www.kcl.ac.uk/study/widening-participation/faqs.aspx> (accessed 12 July 2017).

LSE (2016). *LSE 2016 Access Agreement*. Available online at: <http://www.lse.ac.uk/study/undergraduate/informationForTeachersAndSchools/wideningParticipation/pdfs/LSE-1617-Access-Agreement.pdf> (accessed 12 July 2017).

Newcastle University (2017). *Parent/Carer HE Qualification*. Available online at: <http://www.ncl.ac.uk/schools/partners/eligibility/parent/>

Queen Mary University of London (2017). *Widening participation*. Available online at: <http://www.qmul.ac.uk/undergraduate/teachers/wp/index.html> (accessed 12 July 2017).

Realising Opportunities (2017). *Prospective students*. Available online at: <http://www.realisingopportunities.ac.uk/prospective> (accessed 12 July 2017).

University College London (2017). *UCL 2017-18 Access Agreement*. Available online at: <https://www.offa.org.uk/agreements/University%20College%20London%20201718.pdf> (accessed 12 July 2017).



University of Birmingham (2017). *Widening Participation and Access to Birmingham (A2B)*. Available online at: <http://www.birmingham.ac.uk/strategic-framework/Education/a2b.aspx> (accessed 12 July 2017).

University of Bristol (2017). *University of Bristol Access Agreement 2017-18*. Available online at: <http://www.bristol.ac.uk/media-library/sites/sraa/documents/Access-agreement-2017-2018-entry.pdf> (accessed 12 July 2017).

University of Cambridge (2015). *Raising Aspirations: Our commitment to outreach*. Available online at: [http://www.undergraduate.study.cam.ac.uk/files/publications/raising\\_aspirations.pdf](http://www.undergraduate.study.cam.ac.uk/files/publications/raising_aspirations.pdf) (accessed 12 July 2017).

University of Cardiff (2017). *Widening Access*. Available online at: <http://www.cardiff.ac.uk/about/our-profile/who-we-are/university-for-all/widening-access> (accessed 12 July 2017).

University of Edinburgh (2017). *Who we support*. Available online at: <http://www.ed.ac.uk/student-recruitment/widening-participation/who-we-support> (accessed 12 July 2017).

University of Glasgow (2017). *Widening participation*. Available online at: <http://www.gla.ac.uk/explore/wideningparticipation/admissionssummary/ourgradeadjustments/> (accessed 12 July 2017).

University of Leeds (2017). *Access to Leeds frequently asked questions*. Available online at: [http://www.leeds.ac.uk/info/128005/applying/33/alternative\\_admissions/5](http://www.leeds.ac.uk/info/128005/applying/33/alternative_admissions/5) (accessed 12 July 2017).

University of Liverpool (2017). *University of Liverpool Access Agreement 2017-18*. Available online at: <https://www.offa.org.uk/agreements/University%20of%20Liverpool%20201718.pdf> (accessed 12 July 2017).

University of Manchester (2017). *Working with targeted groups*. Available online at: <http://www.manchester.ac.uk/connect/teachers/students/secondary/widening-participation/targeted-groups/> (accessed 12 July 2017).

University of Nottingham (2017). *Ambition: post-16*. Available online at: <http://www.nottingham.ac.uk/schoolsliason/services/ambition-post-16.aspx> (accessed 12 July 2017).

University of Oxford (2017). *Access Agreement target categories*. Available online at: <https://www.ox.ac.uk/about/facts-and-figures/admissions-statistics/undergraduate/additional-info/access-agreement-target-categories?wssl=1> (accessed 12 July 2017).

University of Sheffield (2017). *Widening participation: WP data*. Available online at: <https://www.sheffield.ac.uk/als/wp/data> (accessed 12 July 2017).

University of Southampton (2017). *Access to Southampton (A2S)*. Available online at: <http://www.southampton.ac.uk/schools-colleges/access-to-southampton.page> (accessed 12 July 2017).

University of Warwick (2017). *Widening Participation About Us*. Available online at: <http://www2.warwick.ac.uk/study/outreach/aboutus/> (accessed 12 July 2017).

University of York (2017). *University of York Access Agreement 2017-18*. Available online at: <https://www.offa.org.uk/agreements/The%20University%20of%20York%201718.pdf> (accessed 12 July 2017).