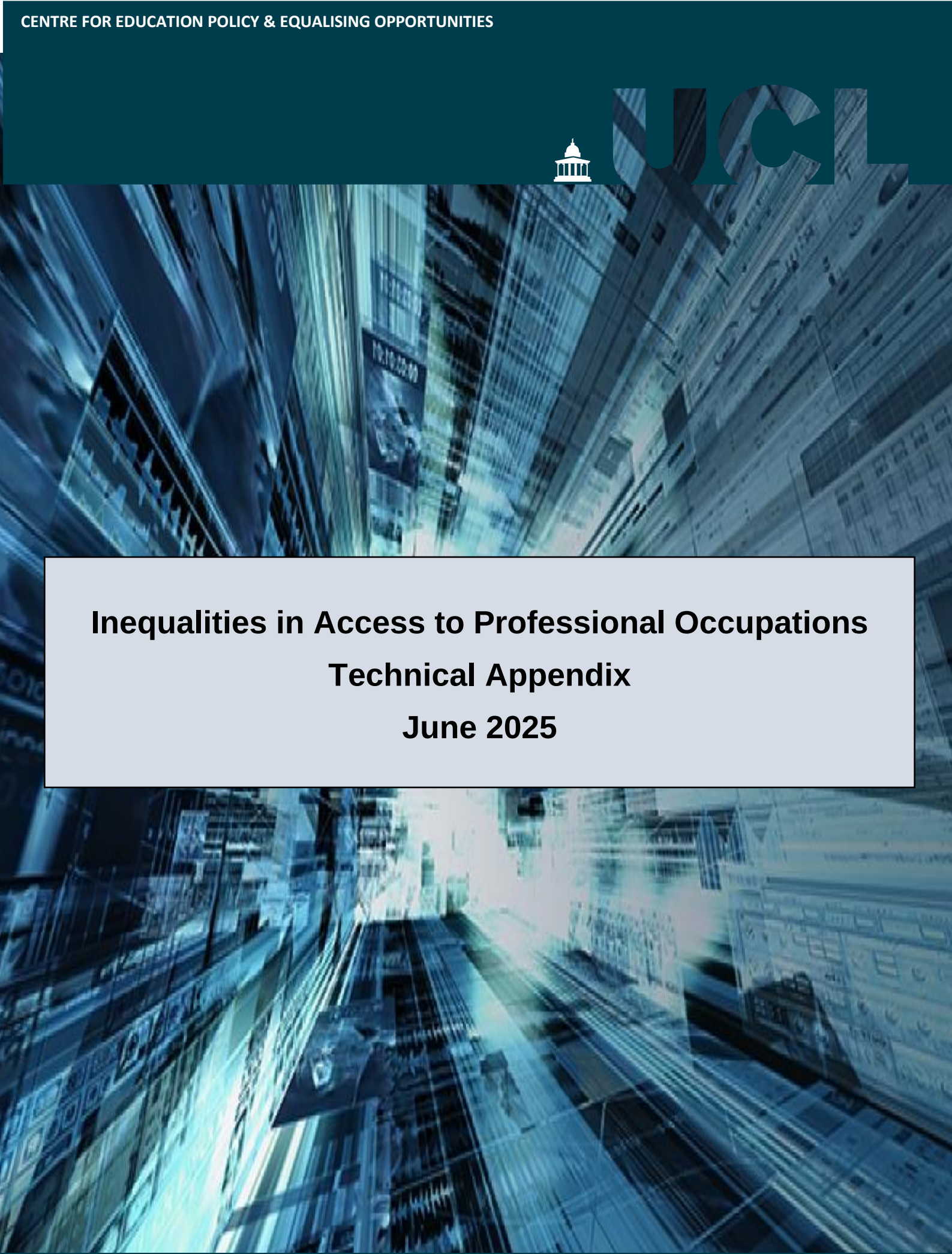
CENTRE FOR EDUCATION POLICY & EQUALISING OPPORTUNITIES



Inequalities in Access to Professional Occupations

Technical Appendix

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Contents

The Nuffield Foundation is an independent charitable trust with a mission to advance social well-being. It funds research that informs social policy, primarily in Education, Welfare and Justice. The Nuffield Foundation is the founder and co-funder of the Nuffield Council on Bioethics, the Ada Lovelace Institute and the Nuffield Family Justice Observatory. The Foundation has funded this project, but the views expressed are those of the authors and not necessarily the Foundation. Visit www.nuffieldfoundation.org

We are grateful to our external advisory board for all input into this project. We are also grateful to all participating employers who have made this project possible.

TA.1 Data received

This report provides the technical details to accompany the main report on inequalities in access to professional occupations. Since piloting this project in 2015 we have received recruitment data for over 2.5 million applicants (N=2,501,427) to entry-level roles including graduate, school leaver, apprenticeship and internship programmes across 17 employers participating in this research project. This is the largest dataset of its kind containing detailed anonymised individual-level data for all applicants on a range of diversity characteristics, demographics, educational attainment, networks and work experience, application and outcome details as outlined in Table 1. We also received entry criteria and recruitment process maps for each entry level programme. We encouraged employers to provide data even where response rates were low so improvements in these rates could be observed over time. Missing data proportions for key variables in the main sample for our 'point in time analysis' year are included in TA.8.

Table 1: Recruitment data requested by UCL

Key diversity characteristics
Parental occupation
School type
Parent degree
FSM eligibility
Gender
Ethnicity (minor group)
Ethnicity (major group)
Contextual recruitment flag (if any)
Demographics
Region of origin (based on school location at age 16 or 18)
Age / year of birth (or age band)
Nationality
Visa status
School attainment
GCSEs - Maths and English grades
A-level and equivalents - subjects
A-level and equivalents – grades

University
Undergraduate degree institution
Undergraduate degree - subjects
Undergraduate degree - grades
Postgraduate qualifications - subjects
Postgraduate qualifications - grades
Networks and work experience
Prior work experience at your organisation
Networks or information source
Application details
Programme
Business area
Office location
Intake year
Date of application
Applicant ID (anonymised)
Outcomes
Application stage reached or offer
Performance at each stage of the recruitment process (e.g. test scores)

TA.2 Data preparation

Our aim is to produce publicly available research reports based on data collated from all participating employers, while also providing bespoke reports and benchmarks to each participating employer. We have therefore prioritised the standardisation and consistency with which all data is requested, coded, analysed and reported, while also being flexible and sensitive to employers' challenges around data collection and extraction, response rates, data privacy and time commitments. We therefore received data from all participating employers which maximises anonymity and protects applicant confidentiality, while also being rich in detail for us to conduct our analysis.

We have cleaned the data and created the variables as outlined below in Table 2. In all cases responses such as 'I don't know', 'I prefer not to say' and 'undisclosed' are classed as an additional missing category for each variable.

Table 2: Variables created

Variables created	**Details**
Key diversity characteristics	
Parental occupation (NS-SEC: National Statistics Socio-Economic Classification)	Applicants are grouped into three broad social background categories in line with Social Mobility Commission guidance[1] based on a single question capturing the occupation of the main parental household earner. These groups are: Professional and managerial – modern and traditional professional occupations; senior or junior managers or administrators Intermediate backgrounds – clerical and intermediate occupations; small business owners Working class backgrounds – technical and craft occupations; routine, semi routine and service occupations; long term unemployed. For earlier years before the single question was adopted by employers, we derived NS-SEC from variables on parental occupation, parental supervisory status, and parental employment status, using ONS guidance on self-coded NS-SEC[2].

[1] https://socialmobility.independent-commission.uk/resources/socio-economic-diversity-and-inclusion-employers-toolkit/

[2]https://www.ons.gov.uk/methodology/classificationsandstandards/standardoccupationalclassificationsoc/soc2020/soc2020volume3thenationalstatisticssocioeconomicclassificationnssecrebasedonthesoc2020#deriving-the-ns-sec-self-coded-method

School type	Schools are classified as state, independent or international. Selective schools are not identified separately due to lack of consistency in collecting this data across employers. International school responses are also used to identify international applicants for exclusion from the sample where they do not provide any other UK region of origin data.
Parent degree	This captures whether the applicant has at least one parent with an undergraduate degree, or not.
Eligibility for Free School Meals	Applicants are classified as either eligible or non-eligible for FSM 'ever'. For the purposes of benchmarking we have assumed all employers who collect this data use the wording recommended by the Social Mobility Commission which captures whether applicants were eligible for FSM 'at any point during your school years' (rather than at a single point in time). Overseas responses are used to identify international applicants for exclusion from the sample where they do not provide any other UK region of origin data.
Gender	Applicants are grouped as male, female or other.
Ethnicity (major)	Applicants are grouped as White, Asian, Black, Mixed and Other as per ONS Census 2021 categories[3].
Ethnicity (minor)	Applicants are grouped into 18 minor ethnic grouping as per ONS Census 2021 categories[4]. For benchmarking, the categories White-Irish, White-Gypsy or Traveller, White-Roma and White-'Other' are either zero or suppressed due to small cell sizes.
Intersectional	An intersectional variable is created from parental occupation (3 groups as above), gender (male or female), and ethnicity (white or ethnic minority). Applicants are therefore assigned to one of 12 intersectional groups, such as 'ethnic minority female from a working-class background'.
Demographics	
UK region of origin (or nation of origin)	Applicants are assigned to one of nine English regions, Northern Ireland, Scotland or Wales. This is derived from school location at age 16 or 18 via a thorough matching process using data such as school names, postcodes, towns and/or counties. If English region data is entirely unavailable from an employer, we group applicants into UK nations where possible: England, Scotland, Wales, Northern Ireland.

[3] https://www.ethnicity-facts-figures.service.gov.uk/style-guide/ethnic-groups/
[4] https://www.ethnicity-facts-figures.service.gov.uk/style-guide/ethnic-groups/

	Applicants who are missing a UK region are identified as either 'UK-missing region' or 'non-UK' using data on the type of school attended, eligibility for free school meals (both of which capture being at school overseas) and visa status. Applicants identified as having a non-UK region of origin are excluded from the sample.
Nationality/Visa status	Nationality is captured as British (British or UK citizen, settled status, right to remain etc) and non-British. Visa status is classed as eligibility to work in the UK or not. We use data on nationality and visa status for two purposes: - to check whether any apparent disadvantage for ethnic minority groups may be due to visa restrictions rather than ethnicity per se. - to identify applicants who are missing region of origin as either UK or international applicants where possible. In some cases, employers transferred data only for applicants eligible to work in the UK, so no further nationality or visa status data was required.
Age band	Applicants are grouped into age bands chosen by employers to avoid individual applicant identification where groups are small.
School attainment	
GCSE grades – Maths and English	Grades on both old and new scales are used. They are grouped as 7/8/9 (A*/A); 4/5/6 (B/C); lower than 4 (C); or another grade.
UCAS tariff	UCAS tariff is calculated from the best 3 A-Levels of applicants with at least 3 A-levels using the conversion below[5]. It is not calculated for applicants with 2 or fewer A-levels. A* 56 A 48 B 40 C 32 D 24 E 16 Other or fail 0

[5] https://www.ucas.com/undergraduate/applying-university/entry-requirements/calculate-your-ucas-tariff-points

QCA points	QCA points are calculated from the best 3 A-Levels of applicants with at least 3 A-levels using the conversion below[6]. It is not calculated for applicants with 2 or fewer A-levels. A* 60 A 50 B 40 C 30 D 20 E 10 Other or fail 0
Level 3 qualification type	Where provided, Level 3 qualification types are grouped as A-levels; BTECs; Highers; IB; A-level and other qualification mixtures; or any other Level 3 qualifications (with no A-levels).
University	
Undergraduate University Group (Boliver Cluster[7])	Undergraduate universities are allocated into university groups (Boliver Clusters as described in TA.7). This is a more nuanced grouping than Russell or non-Russell Group. If more than one undergraduate institution is provided by applicants, the highest ranked university is used. Where only the most recent university institution is captured by employers, applicants with postgraduate degrees are missing undergraduate institution data. In this case, an applicant's university group reflects their most recent institution. If employers do not wish to disclose individual university names to UCL, we provide a look up table of university names and university groupings for the employer to do this allocation themselves. This allocates each university to a Boliver Group, Russell Group or not, and Scottish university or not. The latter is used to correctly allocate four-year Scottish 'MAs' as undergraduate degrees rather than postgraduate degrees.
Russell Group	The captures whether the applicant attended a Russell Group university for their undergraduate degree (or for their most recent qualification is this is the only data provided). If more than one undergraduate institution is provided by an applicant, they are flagged as a Russell Group student if any of their institutions are in the Russell Group.
Undergraduate or Postgraduate Degree	This identifies whether applicants report undergraduate or postgraduate degrees. It is largely coded from free text capturing all qualification title variants including not only BA,

[6] https://assets.publishing.service.gov.uk/media/660e9c8ca43d91001c3af140/Performance_points-_a_practical_guide_to_key_stage_4_and_16_to_18_performance_points.pdf

[7] See Boliver, V. (2015). Are there distinctive clusters of higher and lower status universities in the UK?. *Oxford review of education*, *41*(5), 608-627.

	BSc, MA, MS. and PhD, but also titles such as LLB, BMus, MChem, MEng, LLM etc. As four-year undergraduate degrees from most Scottish universities are called MAs, these have been coded as undergraduate degrees, whereas non-Scottish MAs are coded as postgraduate degrees.
Degree subject	Undergraduate degree subjects are grouped as: economics; accounting and finance; business and management; law, maths; other. This is coded largely from free text. For single honours, major or minor degrees, any instance of the five key subjects is coded into the relevant subject group to capture any prior knowledge of these subjects, e.g. BA History and Economics is coded as Economics. For joint honours where two key subjects are reported, the first listed subject is used, e.g. BSc Economics and Maths is coded as Economics. Where two undergraduate degrees are reported, the first one entered by the applicant is used, e.g. if BSc Maths is entered before BSc Law, then BSc Maths is used.
Application details	
Programme	Entry-level programmes are grouped for consistency across employers as graduate, school leaver & apprenticeships, internships, and other work experience programmes.
Line of service	Captures line of service, department or business area within an organisation and therefore varies by employer. Where possible we have grouped similar lines of service for each industry group.
Region of office (or nation)	We use choice of office location to assign applicants to one of nine English regions, Scotland, Wales or Northern Ireland. A small number of applicants to international offices have been removed from the sample. If no office location is provided, we assume all applicants are applying for UK roles and are classed as 'UK-missing region of office'.
Intake year	Applicants are grouped by the intake they apply to join, e.g. applicants applying to start in September 2023 are defined as the 2023 intake in our reports. Where intake year is unavailable, application year is used. If employers have multiple intakes a year, these are grouped in consultation with the employers to ensure our findings are aligned their own internal reporting periods as far as is possible.

	If employers recruit continuously throughout the year, suitable cut-off dates for data extraction have been agreed in advance, such as 1 September to 31st August to align with a traditional graduate recruitment cycle. Some employers with continuous recruitment record application date but intake date for successful applicants only. The application date has therefore been used as the grouping date variable for these employers.
Month of application	Date of application was provided variously as date, week or month of application by participating employers. For consistency, we have assigned all applicants a month of application from this data.
Networks	This captures how applicants heard about the employer or role or what influenced them to apply. Applicants are grouped into: Online – such as using social media, employer websites, recruitment websites. Personal or professional network – such as friends, family or work contacts. Work experience at the employer – if influenced to apply after completing a work placement or due to being a current/former employee in another role. Other information source – such as school/university (e.g. careers services, careers fair, staff), employer events, diversity initiatives, adverts and professional bodies.

Outcomes	
Outcome of application	We record the outcome of the application process as either: Offer made (even if the offer is later rejected by the candidate) Rejected by employer (e.g. for failing a stage, roles being already filled or not completing assessments on time) Withdrawal (the applicant leaves the process voluntarily) 'On-hold' by the employer (at any point in the process, while employers manage the recruitment pipeline)
Stage of recruitment process reached (summarised into key stages)	We identified where applicants passed, were rejected, withdrew or were put on hold during the recruitment process. This includes stages such as initial screening, online assessments, interviews and assessment centres. The rejection category captures reasons such as failure, the vacancy being filled, or assessments which are attempted but not completed in the required time (timed-out). Stages were coded for participating employers with reference to several sources of information: data capturing the stage at which the applicant left the process; any recruitment process maps provided to us and conversations with recruitment teams for smaller points of clarification where required. The stages vary both by employer, and over time for the same employer. For consistent reporting, we have grouped these into two key stages: 1) Screening and testing, which includes all application sifting, screening based on educational credentials and online testing. Online tests assess skills such as numerical reasoning, verbal reasoning, situational judgement, behaviours, preferences and strengths. 2) Face to Face which includes interviews (video and in person), and assessment centres (case studies, group exercises).

TA.3 Defining the sample

For the 'point in time' analysis we focus on a single year of data for each of the 17 participating employers typically the 2023 hiring round. We focus on a sample of a quarter of a million (253, 653) applicants to graduate, school leaver & apprentice and internship programmes for this 'point in time' analysis.

For the 'over time' analysis we use data typically from hiring rounds from 2022 to 2024. Although we have data from some employers from hiring rounds before 2022, the Covid-19 pandemic makes analysis of the 2020 and 2021 data more problematic. Two of the participating 17 employers had incomplete data across all three years and so a subset of 15 employers are used for this analysis.

Table 3: Numbers of applicants by programme received by UCL

Programme	Applicants – data received (all years)	Applicants – sample (point in time, 1 year)	Applicants – sample (over time, 3 years)
Graduate	1,367,802	117,043	350,281
School leaver & Apprentice	698,323	108,564	298,057
Interns	239,955	28,046	73,525
Other*	195,176	-	-
Missing	161	-	-
Total	2,501,427	253,653	721,863

**'Other' programmes include other work experience schemes ranging from insight days to year in industry placements.*

Across all participating employers, applicants meeting all six following criteria are included in the samples:

1. UK region of origin

In order to obtain accurate benchmarking data against the UK population, we restricted the sample to include only applicants who attended school in the UK. These applicants were identified via a thorough matching process using school location data captured during the recruitment process (relating to school qualifications taken at age 16 or 18) which variously included school names, postcodes, towns and/or counties. The aim was to allocate each applicant to one of nine English regions, Scotland, Wales or Northern Ireland and include these applicants in the sample. Applicants providing non-UK school locations are excluded from the sample.

Applicants who were still missing region of origin data at the end of this matching process were subsequently identified as either 'UK-missing region' or 'non-UK' using data on the type of school attended, eligibility for free school meals (both of which capture being at school overseas) and visa status. All other applicants are assigned 'region of origin missing' and are included in the sample as

this group is likely to include UK applicants (as well some international applicants). For participating employers with relatively complete school location data, this latter 'region of origin missing' category is very small.

2. Applying for a job in the UK

Applicants applying for UK roles are identified by their choice of office location. In a small number of cases, we received applicant data for international offices and these have been removed from the sample. If no office location is provided, we have assumed all applicants are applying for UK roles.

3. Applying for an entry level role

Entry level roles are identified by the programme or scheme applied for, such as graduate, school leaver, apprenticeship, internship or other entry level role. Applicants missing this data, or who applied for 'non entry level' roles are excluded from the sample and these non-entry level roles have been discussed in advance with recruitment teams where applicable. Where employers do not require a degree for entry to a particular level we follow recruitment team advice about which levels should be classified as graduate and school leaver, restrict our sample to those under 25 and include external candidates only.

4. Valid outcome measure

Applicants with a valid outcome measure are included in the sample. This is defined as either receiving an offer, being rejected, voluntarily withdrawing or being put on hold during the process by the employer. The vast majority of applicants have a valid outcome. A small number of applicants who are missing this data are excluded from the sample.

5. Full sample of applicants provided in intake year

We require data on all successful and unsuccessful applicants in an intake to be able to conduct our analysis. Where unsuccessful applicants for some previous intakes have been deleted by employers due to data retention policies, we have excluded all applicants from this specific intake from the sample.

6. Most recent recruitment data available

For the 'point in time' report we use only the most recent year of complete recruitment data provided by each employer during the first phase of our work. For accounting firms this is the 2023 intake for all programmes (but for one accounting firm we use the 2021 intake due to delays receiving 2022 and 2023 data). For law firms we use the 2025 graduate intake who are recruited two years ahead of time (in the same hiring cycle as other 2023 programmes) and 2023 intakes for all other programmes. For public sector employers we use the latest year's applicant data (2022 to 2023) if they use rolling

recruitment, and 2023 intake if they have an annual recruitment round . For employers in other industries we also use 2023 intake data.

For the ‘over time’ analysis we focus on one year either side of the ‘point in time’ data. For the one accounting firm which experienced data delays, we use the point in time data (2021), plus two subsequent years (2022 and 2023).

TA.4 National 'talent pool' benchmarks

Data sources and measures used

We have constructed national benchmarks revealing the characteristics of the potential talent pool for entry level roles in the UK. These benchmarks summarise the characteristics of two recent cohorts of young people who were at school in England at age 16 – a cohort of graduating students and a cohort of school leavers (who may subsequently have gone to university).

We use the graduate cohort to benchmark to graduate schemes and internship programmes; and we use the school leaver cohort to benchmark to school leaver and apprenticeship programmes as follows:

Table 4: Benchmark cohorts

Entry level programme	Benchmark cohort
Graduates and Interns	The cohort of graduating students (N=251, 830) is all those identified in HESA data as graduating from an undergraduate degree at a UK university in 2021, who have been identified as being at school in England at age 16.
School leavers and apprentices	The cohort of school leavers (N=311,350) is all those recorded in the National Pupil Database (NPD) data at age 18 (known as Key Stage 5 or KS5), who were at school in England at age 16, and who left school or college in 2019 with a qualification at least the size of an A-level.

Demographic data for school leavers is taken from their KS4 records, where it is most complete. Although both state and private school and further education (FE) college pupils are included in both the KS4 and KS5 data, private schools do not complete the 'School Census' which is submitted to the Department for Education (DfE) by state schools. The data available on private school pupils comes from the various qualification awarding bodies and does not include demographic data such as ethnicity, eligibility for free school meals and links to geographical area. Demographic data for FE college students comes from their linked KS4 school record.

We chose 2019 as the school leaver cohort to analyse, as it is the year immediately before the Covid pandemic necessitated the use of 'Teacher Assessed Grades', which resulted in the awarding of significantly higher grades than previous years, on average. The qualification regulator Ofqual committed to reducing grade profiles to their pre Covid levels by 2023, but these data are not yet

available to use in this analysis.[8] Using school leavers in 2019 has the added benefit of allowing us to see which individuals are subsequently found at a UK university in 2019/20 or 2020/21.

Demographic measures

Gender

For graduates the gender is as given in the HESA dataset, and 'other' is an option. For school leavers gender comes from the pupils' KS4 record and is either female or male.

Ethnic Group

Both major and minor ethnic group are available in the HESA data for graduates. For school leavers, ethnicity is missing for private school students who were not at state school at KS4, so the analysis by ethnicity for school leavers is just for state school pupils.

Social background measures

There are two measures of social background given in HESA data for graduates. They are whether either parent has a degree qualification, and a socio-economic classification, coded from self-reported data given by applicants about their parents' occupations (if under 21 on entry) when filling in their university application form. This is the collapsed three class form[9] , with additional disclosure of long term unemployed. The three classes are: higher managerial, administrative and professional occupations; intermediate occupations; and routine and manual occupations.

University measures

University groupings

We provide benchmarks according to two different university groupings – whether the graduate attended one of the Russell Group of research-intensive universities or not, and a more nuanced grouping based on work by Boliver (2015), which splits universities into four groups[10]. These groups are Oxbridge, Other Russell Group and higher ranked, Most new and lower ranked old, bottom ranked, UK not classified. These benchmarks therefore highlight the diverse talent available to employers outside the most commonly targeted universities[11].

[8] https://educationhub.blog.gov.uk/2023/04/28/exams-in-2023-everything-you-need-to-know/

[9] https://webarchive.nationalarchives.gov.uk/ukgwa/20160106042025/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#7

[10] These more theoretically rigorous categories are based on a cluster analysis of five key dimensions of universities: research activity, teaching quality, economic resources, academic selectivity and socio-economic mix of the student body. This gives rise to four distinct clusters. Boliver, V. (2015). Are there distinctive clusters of higher and lower status universities in the UK?. *Oxford Review of Education,* 41(5), 608-627.

[11] https://www.highfliers.co.uk/download/2021/graduate_market/GM21-Report.pdf (Table 4.8)

Degree subject

Benchmarks are provided for the graduate data using HESA's Higher Education Classification of Subjects[12] to categorise their undergraduate degree subject. Students were allocated to the first (largest proportion) subject listed if doing joint honours. Benchmarks are reported at the top level of the Common Aggregation Hierarchy (CAH).

Five subjects, thought to be important to recruiters, are used if that subject has been taken at all by the student, even if as a minor rather than major part of their degree. These are Law, Mathematics, Business, Accounting and Economics. These benchmarks are thus comparable to any mention of the subject of interest in the degree stated by applicants to employers.

Geographical measures

Region

For graduates we have constructed benchmarks of both the region they have graduated from (i.e. the region of their university) and of the region where they lived aged 16, through using their Output Area of residence age 16, provided in the KS4 data. For region of university the ONS's nine regions have been used, together with an aggregation of those students who were at school in England aged 16 and went on to Welsh, Scottish and Northern Irish universities.

Note on disclosure controls and ONS disclaimer

All percentages are given to the nearest integer, and counts are rounded to 10, as is required by the conditions of access to this administrative data. Percentages based on counts of fewer than 23 pupils/students are suppressed (labelled SUPP – 0 means below half a percent, but based on a count of 23 or more, so not suppressed). In all cases percentages are of non-missing data.

We are grateful to the Department for Education for making available linked school (National Pupil Database (NPD)) and university (HESA) data under reference DR220908. These benchmarks were produced using this statistical data, made available through the ONS. The use of the ONS statistical data in this work does not imply the endorsement of the ONS in relation to the interpretation or analysis of the statistical data.

This work uses research datasets which may not exactly reproduce National Statistics aggregates.

[12] https://www.hesa.ac.uk/support/documentation/hecos

TA.5. Employer benchmarks

For the point in time analysis, we have also constructed two employer benchmarks - one based on data from all employers participating in this research collaboration, and one based on data from participating employers operating in the same sector. This enables participating employers to compare the diversity of their own applicant and offer pools with those of all (anonymous) participating employers. These are provided as part of the personalised insight reports we have provided confidentially to each participating employer. Each employer's own data is therefore included in the employer benchmarks provided. The benchmarks are constructed as follows:

Table 5: Employer benchmarks

All participating employers	We have included data from 17 organisations.
Sector specific	Sector specific benchmarks are constructed where we have at least three participating employers operating the same sector, namely: 1) accounting & professional services 2) legal sector 3) public sector.

TA.6: Modelling approach

Overall offer rates are driven by two effects – rejections by the employer and voluntary withdrawals by the applicant[13]. We treat these two effects separately to observe which applicants are more likely to be rejected by employers, and which applicants are more likely to voluntarily withdraw.

Obtaining a job offer

We use multivariate analysis methods to investigate how the characteristics of applicants relate to their chances of being made a job offer (even if they later reject it). Multivariate regression enables us to compare the chances of success of two hypothetical individuals who differ in just one characteristic (e.g. parental occupation) holding all their other characteristics (such as university type or university subject), equal. One important issue we can investigate using these techniques is whether there are gaps between people from different parental backgrounds in receiving offers, once their other observed characteristics, such as prior attainment or university type are taken into account. If prior attainment and university attended are the main reasons for applicants achieving job offers, there should be no remaining difference by parental occupation, school type, parental degree status, FSM eligibility, gender or ethnicity once these other factors have been taken into account.

The outcome we are interested in, getting a job, is a dichotomous (one/zero) outcome. Applicants who receive a job offer are coded as '1' and applicants who are rejected by the employer are coded a '0'. Candidates who voluntarily withdraw or who are put on hold by the employer are excluded from these models as we are focussing only on the recruitment decision of the employer whether to offer or reject a candidate. We therefore use a regression technique designed for analysing binary outcomes – a probit regression. In our reports we report on the marginal effects from these models i.e. the difference in probability of the group of interest receiving an offer (e.g. applicants from professional or managerial backgrounds), relative to the comparison group (e.g. applicants from working class backgrounds). We convert these percentage point difference in probabilities into percentages in the charts presented.

The graphs of these marginal effects therefore show the *percentage* difference in the probability of receiving a job offer between applicants from different SES, gender and ethnic backgrounds.

The graphs start by showing the 'raw' (i.e. uncontrolled) difference in the probabilities (expressed as a percentage) of being made an offer for the category of interest, compared with the appropriate base category (e.g. FSM compared to non-FSM). For example, if the overall probability for the base category

[13] We code outcomes as offer, reject, withdraw or on hold. We do not provide any analysis for candidates on hold as the numbers are either small or zero.

(e.g. non-FSM) receiving a job offer from an employer is 4%, a one percentage point difference here (such as 3% offer rate for FSM applicants) would be equivalent to a 25% lower chance of receiving a job offer. We also adjust these 'raw' figures to take into account that employer choice can affect an applicant's chances of receiving an offer as offer rates vary substantially by employer. The 'raw' figures therefore control for employer 'fixed effects' – meaning that the offer rate gap shown represents the average gap faced by candidates applying to same employer.

Each successive bar to the right on these charts means that additional observable characteristics (known as 'controls') have been added to the model, which may explain some of the raw difference. We add different groups of controls to the model successively where relevant and available, starting with demographic characteristics of the applicant, then school, university, and application-related characteristics.

Significant differences in marginal effects by characteristic that remain after all controls have been added into the models do not necessarily mean that there is bias in the process according to that particular characteristic. It may be that there are variables that we cannot observe which are related with both that characteristic and the chance of getting a job offer. An example might be the visa status of applicants (if this data has not been provided by employers); where students applying without the right to work in the UK might be more likely to come from non-White British ethnicities and less likely to get a job offer. The gap in ethnicity shown by the model in this sort of case may not represent a direct ethnic bias. To be clear, our analyses are unable to distinguish between bias (whether conscious or unconscious), or other explanations related to the unobserved characteristics of applicants and their circumstances.

Withdrawals

We also investigate how the characteristics of applicants relate to their chances of voluntarily withdrawing from the recruitment process. This acts as a robustness check to rule out the possibility that any loss of diversity during the recruitment process may be driven by underrepresented groups being more likely to withdraw from the recruitment process.

For these models, the outcome we are interested in, voluntarily withdrawing, is a dichotomous (one/zero) outcome. For these models we are comparing the characteristics of applicants who withdraw (withdraw=1) to those of applicants who do not withdraw (withdraw=0) i.e. applicants who received an offer, were rejected or put on hold. The interpretation is the same as for the 'obtaining a job offer' models explained above. We report marginal effects from probit models i.e. the difference in probability of the group of interest withdrawing (e.g. applicants from professional or managerial

backgrounds), relative to the comparison group (e.g. applicants from working class backgrounds). We express these differences in percentage terms relative to the comparison group.

Recruitment stages

We also present models which show the difference between groups of applicants in their chances of passing each of the two main stages of the recruitment process:

1) Screening and testing: this includes all application sifting, screening based on educational credentials and online testing. Online tests assess skills such as numerical reasoning, verbal reasoning, situational judgement, behaviours, preferences and strengths.

2) Face to Face: this includes interviews (video and in person), and assessment centres (case studies, group exercises).

The recruitment process of all employers follows this broad two-stage structure, with some variation within each stage in terms of the specific screening criteria, psychometric tests or assessment tasks used.

For example, in our 'point in time' analysis only around a quarter of candidates in the sample apply to a recruitment process which includes screening based on prior educational qualifications (GCSE, A-levels and/or 2:1 degree). Whereas most participating employers use online tests, interviews and assessment centres as selection methods (80-100% of candidates apply to employers who use these methods).

Table 6: Proportion of applicants applying to recruitment processes containing various selection methods

Screening and testing	GCSE screening	22%
	UCAS screening	23%
	Require a 2:1 degree	24%
	Online testing	98%
Face to face	Interview	100%
	Assessment Centre	80%

Model specifications – Point in Time Analysis

We investigate whether there are differences in offer rates and withdrawal rates by the following characteristics of interest for the 'point in time' sample:

- Parental occupation
- School type
- Gender
- Ethnicity (major)

- Intersectional variable (parental occupation x ethnicity)

We run separate models for each of these characteristics for the overall 'point in time' sample of applicants to graduate, school leavers & apprentices and internship programmes. The number of applicants and employers in each 'point in time' model is shown in Table 7. This table also shows which of the key characteristics of interest are available for each model. The data for variables marked with a 'x' have too high a proportion of missing data to be able to include in the models.

As described above, we firstly present raw effects from our models, followed by effects controlling in stages for the variables shown in Table 7. The stages are 'fixed effects' meaning we compare applicants to the same employer to account for differing offer rates across employers, followed by demographics, school attainment, university experience and application details.

We also explored FSM and parental degree models for this analysis but data was most complete for parental occupation and school type so we have focussed on this for the 'point in time' analysis.

Table 7 – Model specifications

	Graduate				Internship			School leaver & Apprentice		
	All	Accounting	Legal	Public	All	Accounting	Legal	All	Accounting	Public
Sample N (offer models)	86,960	46493	3280	36081	23,100	15746	3280	70,878	10,746	58,061
Sample N (withdraw models)	117,043	64016	3503	46647	28,046	18526	3493	108,564	12,763	91,361
Number of employers	17	3	3	10	7	3	3	14	3	9
Characteristic of interest										
Parental occupation	✓	✓	x	✓	✓	✓	x	✓	✓	✓
School type	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Parent degree	✓	✓	✓	x	✓	✓	✓	x	✓	x
FSM	✓	✓	✓	x	✓	✓	✓	x	✓	x
Gender	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Ethnicity (major)	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Intersection	✓	✓	x	✓	✓	✓	x	✓	✓	✓
Controls										
1. Fixed effects										
Employer	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
2. Demographics										
Gender (for Ethnicity & SES models)	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Ethnicity major (for Gender & SES models)	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Parent Occupation (for Gender & Ethnicity models)	✓	✓	x	✓	✓	✓	x	✓	✓	✓
Region of origin (UK)	✓	✓	✓	✓	✓	✓	✓	x	✓	x
Visa status	✓	✓	x	x	✓	✓	x	✓	✓	✓
Nationality	x	✓	x	x	x	x	x	x	✓	x
3. School										
GCSE maths grade	x	x	x	x	x	x	x	x	✓	x
A-level grades	x	✓	x	x	x	✓	x	x	✓	x
4. University										
University category (Boliver)	✓	✓	✓	✓	✓	✓	✓	x	x	x
UG or PG	x	✓	x	x	x	✓	x	x	x	x
UG degree class	x	✓	x	x	x	✓	x	x	x	x
UG degree class - obtained or predicted	x	✓	x	x	x	✓	x	x	x	x
UG subject group	✓	✓	x	✓	✓	✓	x	x	x	x
5. Application										
Networks	✓	✓	x	✓	✓	✓	x	x	✓	x
Month of application	x	✓	x	x	x	✓	x	x	✓	x
Region of office	✓	✓	x	✓	✓	✓	x	✓	✓	✓
Line of Service	✓	✓	x	✓	✓	✓	x	✓	✓	✓

Model specifications – Over Time Analysis

In our 'over time' analysis we focus on whether the inequalities that we see in in our 'point in time' analysis (based largely on 2023 data), have changed over time, using data from 2022 to 2024.

The collection of information on parental occupation (NS-SEC) was incomplete for some employers in 2022, we therefore focus our socio-economic background analysis on the type of school attended over this period, before considering parental occupation (NS-SEC) trends for the shorter window of 2023-2024.

We therefore investigate whether there are differences in offer rates by the following characteristics of interest for the 'over time' sample:

- School type
- Parental Occupation
- Gender
- Ethnicity (major)
- Intersectional variable (school type x ethnicity major)

For the 'over time' analysis, we analyse each year of data as a separate model and report on the marginal effects from these models in the same way as the 'point in time' analysis i.e. the difference in probability of the group of interest receiving an offer (e.g. applicants from professional or managerial backgrounds), relative to the comparison group (e.g. applicants from working class backgrounds). We convert these percentage point difference in probabilities into percentages in the charts presented.

To simply the presentation of results we plot only 'raw' and 'full' models on the 'over time' charts. Raw models contain controls for employer fixed effects, gender, ethnicity and social background (parental occupation or school type). Full models contain all remaining control variables.

When presenting descriptive data on representation of each group during the recruitment process over time, we have used the same benchmarks as for the 'point in time' sample.

Control Variables

In interpreting our results it is helpful to note how key characteristics of interest vary with control variables, as well as with outcomes. Table 8 gives some examples of these for the graduate sample for Russell Group attendance, source of information or influence on application being a personal or professional contact, and summary English region or origin.

Table 8– Characteristics of interest by examples of control variables

	Parental occupation			School type		Gender		Ethnicity			
	Prof/ Manag'l	Interm'te	Working class	Indep'nt	State	Male	Female	White	Asian	Black	Mixed/ Other
Graduates											
Russell Group attendance %	56.3	45.1	39.7	68.3	46.3	47.8	52.3	55.1	44.3	33.8	50.3
Primary network personal/ professional contact %	11.1	9.2	8.2	11.0	10.0	10.0	9.6	11.4	7.8	7.7	10.1
Region of origin London %	19.2	24.8	32.8	23.1	25.3	23.7	26.0	13.1	35.8	49.9	42.2
Region of origin South %	41.1	29.4	22.9	46.2	31.2	33.6	33.7	42.2	23.5	21.7	26.8
Region of origin Midlands %	17.2	20.9	20.3	14.4	18.9	19.7	18.1	17.0	22.5	16.5	14.1
Region of origin North %	22.5	24.9	24.0	16.3	24.6	23.1	22.2	27.7	18.3	11.9	16.9
Interns											
Russell Group attendance %	73.0	62.9	57.7	80.5	64.4	68.8	67.2	71.7	66.5	53.0	68.7
Primary network personal/ professional contact %	6.8	5.7	5.2	6.2	6.6	6.2	6.2	6.9	5.1	6.8	7.1
Region of origin London %	26.2	31.5	39.4	27.3	32.3	29.2	33.0	16.9	41.0	55.4	46.3
Region of origin South %	44.6	34.0	26.1	48.7	34.4	39.2	36.9	49.5	27.3	23.0	31.5
Region of origin Midlands %	13.6	16.1	17.1	12.9	15.6	15.1	14.8	14.1	18.3	11.4	10.5
Region of origin North %	15.6	18.4	17.4	11.1	17.7	16.6	15.3	19.6	13.4	10.2	11.6

The table shows, for example, that only 39.7% of the working class applicants in the sample went to a Russell Group university compared with 56.3% of those from a professional/managerial background. The proportions are calculated based on those attending a UK university, those with data on network, and those with an English region of origin.

Decomposition of the working class disadvantage in the accounting sector

We decompose the SEB gap in the accounting sector (which has very similar gaps in offer rates to the full sample population) using an Oaxaca-Blinder decomposition which is a popular method in economics for explaining the difference in outcomes between two groups, in this case offer rates for applicants from professional and working class backgrounds. We use the 'point in time' sample to conduct this analysis.

For a characteristic to be identified as a barrier to accessing the accounting profession in this analysis two effects must be present:

1) The characteristic must vary by social background, for example working class applicants have lower UCAS scores than applicants from professional backgrounds.

2) The characteristic must be predictive of obtaining a job offer, for example, applicants with higher UCAS scores are more likely to obtain job offers.

Table 9 provides more explanation of each of the unfavourable and favourable barriers identified in the main report. The two columns 'characteristics of applicants by social background' show the data for effect (1), for example, the mean UCAS tariff for applicants from professional backgrounds is 132 points, compared to 124 points for working class applicants. Similarly, 26% of applicants from a professional background attend a 'category 3' university (new or lower ranked) compared to 41% of applicants from working class backgrounds.

The column 'do these characteristics predict job offers' show the findings for effect (2). This explains the benefit, in terms of higher offer rates, which is associated with each of these characteristics. It is important to note that these effects are for applicants who are comparable on all other observable characteristics in our data, meaning we are attempting to isolate the specific effect of this single characteristic. For example, an applicant from a 'category 3' university has a 57% lower chance of receiving a job offer than an applicant from a category 2 university (non-Oxbridge Russell Group and other higher ranked), with the same A-level attainment, degree class, undergraduate subject studied, networks, who are of the same gender and ethnicity and from the same region of the UK, and who applied to the same firm, line of service and UK region of office on the same date.

The columns 'working class applicants are…' ties together effects (1) and (2) and explains the resulting impact on the chances of working class applicants obtaining job offers.

As the outcome is binary (offer made or rejected), we use a probit specification for this modelling which is designed for this purpose. Withdrawals have been excluded from this analysis in order to

focus on recruitment decisions made by employers and identify which characteristics are being rewarded by employers.

Table 9: Explanation of key drivers of the social class gap in graduate offers in the accounting sector

		Characteristics of applicants by social background			
	Notes	Professional/Managerial	Working class	Do these characteristics predict job offers?	Working class applicants are:
Ethnicity (vs White)	a				
Asian		30%	44%	Asian applicants are 18% less likely to receive a job offer compared to otherwise similar White applicants. The penalty for Black applicants is 16%.	More likely to be Asian or Black ethnicity which decreases the chances of receiving a job offer for reasons unexplained by the data included in our analysis. The effect for Black applicants explains a smaller proportion of the social class gap in offers because they make up a smaller proportion of our sample than Asian applicants.
Black		8%	12%		
UCAS points (mean)		132	124	Each additional A-level grade (8 UCAS points) increases the chances of obtaining a job offer by 0.6ppt. For context, the mean offer rate is 6.3% for accountancy graduate schemes in our sample.	Likely to have lower educational attainment at school which **decreases** their chance of success. There is a one A-level grade difference between applicants from professional and working class backgrounds.
University (vs Category 2)*	b				
Category 3		26%	41%	University category is highly predictive of success over and above all other characteristics. Applicants from Category 3 universities are 57% less likely to obtain a job offer than comparable applicants from Category 2 universities. The penalty for Category 4 is 90%.	More likely to attend a lower ranked university which **decreases** their chances of obtaining a job offer (even for applicants with the same UCAS tariff).
Category 4		1%	2%		
Degree class (vs 2:1)					
1st		36%	35%	Degree class is very predictive of success over and above all other characteristics. Applicants with a 1st are 25% more likely to receive a job offer than similar candidates with a 2:1 degree. Penalties for 2:2 and 3rd class degrees are large - these applicants are 45% and 88% respectively less likely to receive job offers than similar applicants with a 2:1.	Slightly less likely to obtain a 1st and more likely to obtain 2:2/3rd which **decreases** their chance of success (small effect)
2:2		7%	8%		
3rd		0%	1%		
Date of application		Applicants from professional backgrounds apply 14 days earlier (on average) than applicants from working class backgrounds		Applying earlier is associated with higher offer rates. Each month earlier increases job offer rates by 0.4ppt, even for applicants with the same demographic and educational background and application choices.	More likely to apply later which **decreases** their chance of success.
Choice of firm (vs Firm A)	c				
Firm B		*supp.*	*supp.*	*supp.*	More likely to apply to the firm with the highest offer rate which **increases** their chances of success.
Firm C		*supp.*	*supp.*	*supp.*	
Choice of service line (vs Audit)					
Deals & Consulting		28%	24%	These service lines are more competitive (4-5% offer rates) than audit (9.4% offer rate). Applying to audit can therefore double an applicant's chances of obtaining a job offer.	Less likely to apply to Deals & Consulting (which is more competitive) and more likely to apply to Audit (which is less competitive) which **increases** their chance of success. Smaller differences occur for other service lines.
Tax, Legal, Pensions & Risk		17%	18%		
Other		20%	21%		

a. All figures are percentages of non-missing data

b. University groups are explained in more detail in the Technical Appendix. Universities are grouped into Category 1 (Oxbridge), Category 2 (Russell Group and other higher ranked), Category 3 (New Universities and old lower ranked) and Category 4 (Bottom ranked).

c: 'Supp' shows where these figures have been suppressed as we have committed not to disclose any data relating to individual employers

TA.7: University categories used in analysis (Boliver clusters[14])

Table 10: University Boliver clusters ([a] denotes Russell group)

Cluster 1 (Oxbridge)	University of Leeds[a]	**Cluster 3 (New universities and old lower ranked)**
University of Cambridge[a]	University of Leicester	Abertay Dundee University
University of Oxford[a]	University of Liverpool[a]	Aberystwyth University
	University College London[a]	Arts University Bournemouth
Cluster 2 (Russell Group and other higher ranked)	LSE[a]	University of the Arts London
University of Aberdeen	Loughborough University	Aston University
University of Bath	The University of Manchester[a]	Bangor University
University of Birmingham[a]	Newcastle University[a]	Bath Spa University
University of Bristol[a]	The University of Nottingham[a]	University of Bedfordshire
Cardiff University[a]	Queen Mary University of London[a]	Birmingham City University
University of Dundee	Queen's University Belfast[a]	Bournemouth University
Durham University[a]	University of Reading	University of Bradford
University of East Anglia	Royal Holloway, University of London	University of Brighton
The University of Edinburgh[a]	University of St Andrews	Brunel University London
University of Exeter[a]	SOAS, University of London	Canterbury Christ Church University
University of Glasgow[a]	The University of Sheffield[a]	Cardiff Metropolitan University
Goldsmiths, University of London	University of Southampton[a]	University of Central Lancashire
Heriot-Watt University	University of Strathclyde	University of Chester
Imperial College London[a]	University of Surrey	University of Chichester
University of Kent	University of Sussex	City University
King's College London[a]	The University of Warwick[a]	Coventry University

[14] See Boliver, V. (2015). Are there distinctive clusters of higher and lower status universities in the UK?. *Oxford Review of Education*, *41*(5), 608-627.

Lancaster University	The University of York[a]	University for the Creative Arts
De Montfort University	Plymouth University	**Cluster 4 (Bottom ranked)**
University of Derby	University of Portsmouth	Anglia Ruskin University
Edinburgh Napier University	Queen Margaret University	Bishop Grosseteste University
University of Essex	Robert Gordon University	University College Birmingham
Falmouth University	University of Roehampton	University of Bolton
University of Glamorgan	University of Salford	Buckinghamshire New University
Glasgow Caledonian University	Sheffield Hallam University	University of Cumbria
University of Gloucestershire	Staffordshire University	University of East London
University of Greenwich	University of Stirling	Edge Hill University
Harper Adams University	University of Sunderland	Glyndwr University
University of Hertfordshire	Swansea University	Leeds Trinity University
University of the Highlands and Islands	Teesside University	Liverpool Hope University
University of Huddersfield	Ulster University	London Metropolitan University
The University of Hull	University of the West of England	University of Wales, Newport
Keele University	University of West London	University of St Mark and St John
Kingston University	University of the West of Scotland	Southampton Solent University
Leeds Beckett University	University of Westminster	University Campus Suffolk
University of Lincoln	The University of Winchester	University of Wales Trinity St David
Liverpool John Moores University		University of Wolverhampton
London South Bank University		York St John University
Manchester Met University		
Middlesex University		
Newman University,		

Birmingham		
The University of Northampton		
Nottingham Trent University		
Northumbria University		
Oxford Brookes University		

TA.8 Missing data

Table 11 sets out the number of employers providing diversity metrics by sector and programme. It includes the numbers of employers providing stages variables allowing us to construct valid stages outcomes. These stages outcomes are passing or withdrawing before the last screening or testing stage, and being made an offer or withdrawing, conditional on having passed the last screening or testing stage.

Table 11: Numbers of employers providing key metrics by programme, sector and stage

					Stages models	
	N employers providing metric	N employers providing metric by sector			N employers with valid outcomes	N employers providing metric
		Accounting	Law	Public		
Graduate programmes						
Parental occupation	16	3	2	10	16	15
School type	17	3	3	10	16	16
FSM eligibility	8	3	3	1	16	7
Parental education	7	3	3	1	16	6
Gender	17	3	3	10	16	16
Major ethnic group	17	3	3	10	16	16
Internships						
Parental occupation	5	3	1	1	5	4
School type	7	3	3	1	5	5
FSM eligibility	7	3	3	1	5	5
Parental education	7	3	3	1	5	5
Gender	7	3	3	1	5	5
Major ethnic group	7	3	3	1	5	5
School leaver/ apprenticeships						
Parental occupation	13	3	0	9	14	13
School type	14	3	1	9	14	14
FSM eligibility	5	3	1	0	14	5
Parental education	4	3	1	0	14	4
Gender	14	3	1	9	14	14
Major ethnic group	14	3	1	9	14	14

Table 12 shows the percentages of data missing for the overall sample by programme type, where applicants have not responded to a question, replied ‘don’t know’ or ‘prefer not to say’. These percentages exclude where employers were unable to provide metrics.

Table 12: Non-response percentages for key metrics in 'point in time' sample

	Graduates %	Interns %	School leavers and apprentices %
Parental occupation	20.2	19.4	18.8
School type	10.5	9.6	9.5
Parental education	10.3	10.2	13.7
FSM eligibility	19.0	17.6	23.9
Gender	2.4	2.0	1.8
Major ethnic group	4.8	3.1	3.7

The numbers of employers providing control variable data for the 'point in time' analysis is set out in Table 13 and analysed by sector.

Table 13: Numbers of employers providing control metrics by programme and sector

	Overall			Accounting and prof services			Law		Public sector	
	Graduates	Interns	School leavers & apprentices	Graduates	Interns	School leavers & apprentices	Graduates	Interns	Graduates	School leavers & apprentices
Demographics										
Region of origin (UK)	8	7	5	3	3	3	3	3	1	0
Nation of origin (UK)	8	7	5	3	3	3	3	3	1	0
Visa status	14	4	12	2	2	2	1	1	10	9
Nationality	5	4	4	3	3	3	0	0	1	0
School										
GCSE maths grade	2	2	3	2	2	3	0	0	0	0
GCSE English grade	2	2	3	2	2	3	0	0	0	0
A-level grades	3	3	3	3	3	3	0	0	0	0
University										
University category (Boliver)	7	6	N/A	3	3	N/A	2	2	1	N/A
Russell Group	7	6	N/A	3	3	N/A	2	2	1	N/A
UG or PG	14	4	N/A	3	3	N/A	1	1	9	N/A
UG degree class	5	5	N/A	3	3	N/A	1	1	1	N/A
UG degree class - obtained or predicted	3	3	N/A	3	3	N/A	0	0	0	N/A
UG subject group	6	5	N/A	3	3	N/A	1	1	1	N/A
Application										
Networks	5	5	3	3	3	3	1	1	1	0
Region of office	17	7	14	3	3	3	3	3	10	9
Month of application	15	6	13	3	3	3	2	2	10	9
Line of service	15	5	14	3	3	3	1	1	10	9

Table 14 shows the non-response rates for control variables in the 'point in time' analysis. As for Table 11, the percentages exclude those combinations of employer and programme where employers were unable to provide the variables.

Table 14: Non-response percentages for control variables

	Graduates	Interns	School leavers & apprentices
Demographics			
Region of origin (UK)	3.1	2.2	5.2
Nation of origin (UK)	3.1	2.2	5.2
Visa status	9.4	10.2	2.9
Nationality	32.1	29.2	18.2
School			
GCSE maths grade	0.0	0.0	14.6
GCSE English grade	0.0	0.0	14.6
A-level grades	28.4	24.4	61.8
University			
University category (Boliver)	20.9	18.9	N/A
Russell Group	20.9	18.9	N/A
UG or PG	29.6	12.6	N/A
UG degree class	36.3	33.8	N/A
UG degree class - obtained or predicted	19.7	19.7	N/A
UG subject group	14.7	10.2	N/A
Application			
Networks	1.9	1.2	6.8
Region of office	5.0	0.0	14
Month of application	0.0	0.0	0.0
Line of service	2.5	9.6	5.7