## Supplementary Material

(1) Sample description and survey non-response rates

The DLHE longitudinal survey is a survey based on graduates who responded to the DHLE early survey which took place approximatively 6 months after graduation ( $\mathrm{N}=354,730$, valid responses, representing 75.3 \% of all eligible student population). THE DHLE longitudinal sample used in our paper consisted of two sub-samples: sub-sample A which oversampled certain groups and sub-sample B which was a random sample. Out of 80,835 graduates who were selected to be part of sub-sample A, 33,640 responded ( $42 \%$ response rate) and out of 192,745 graduates who were included in the subsample B (who had a valid e-mail address) 28,565 graduates responded ( $15 \%$ response rate). Therefore, in total 62,205 graduates answered the longitudinal DHLE survey ( 3.5 years after graduation), resulting in an overall survey response rate of $23 \%$. For more information about the sample design please see HESA's webpage for the 2008-2009 cohort DHLE longitudinal: https://www.hesa.ac.uk/data-and-analysis/publications/long-destinations-2008-09/definitions

We recognise that the low response rate is an important limitation of the data. However, this is not unusual for graduates' surveys. Similar response rates were achieved by the 'Research into Employment and Professional Flexibility' (REFLEX) survey (for the UK, it was 23 \% ; see Allen and Van der Velden 2007: 4) and by the study "The Class of '99: A Study of the Early Labour Market Experiences of Recent Graduates' (24\%; see Purcell et al. 2005: 213).

The HESA technical report for the 2008-2009 cohort (HESA, 2013) provides more details about the non-response rate showing some descriptive statistics by certain socio-demographic and higher education characteristics. Although there are some slight differences in the non-response rate by certain groups (e.g. ethnicity, age), we include these variables in our analysis, and hence we minimize the potential bias related to this. Moreover, MacMillan, Tyres \& Vignoles (2015) who analysed the 20062007 HESA cohort compare percentages based on full early and longitudinal DHLE samples (Table A1) and they show very small differences by parental background, type of area, private schooling in the composition of the two samples, indicating that the non-response is not biased towards certain social backgrounds. We are unable to produce a similar table since we have no access to the full early and longitudinal DHLE data to assess differences in the distributions of our sample and these two samples on key variables. However, we do not have reasons to believe that there exist specific biases which may affect the data for the cohort 2008-2009 but not previous cohorts.

For descriptive analysis, we use weights provided by HESA to correct for non-response, oversampling of sub-groups and the two different sampling strategies (sub-sample A and sub-sample B above). We do not use weights in the multilevel models since they are not compatible with MCMC and discrete responses in MLwiN (the software used for data analysis). Moreover, our models already include most of the variables used to construct the weights.

## References:

Allen, Jim, and Rolf Van der Velden. 2007. The Flexible Professional in the Knowledge Society: General Results of the REFLEX project. Maastricht University: Research Centre for Education and the Labour Market.
Purcell, K., P. Elias, R. Davies, and N. Wilton. 2005. The Class of'99: A study of the early labour market experiences of recent graduates. Warwick Institute for Employment Research.
Macmillan, Lindsey, Claire Tyler, and Anna Vignoles. 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: 487-515.
(2) Missing information

Comparing the distributions of our variables in the sample of excluded cases and in the completecase sample (Table S1), it emerges that graduates in the latter sample are slightly more advantaged (slightly higher percentage in top jobs, graduating at age 21-22, from old universities, with first and upper second class of degree, holding a postgraduate diploma). They are also slightly more likely to be white graduates and females. Also Table S2 shows that the distribution by social class of destination of those with missing information for parental social class is very similar to the NS-SEC at the bottom of the class schema, suggesting that those who are missing are more likely to come from more disadvantaged backgrounds.

However, the differences presented in table S1 are small and although we found that the missingness/complete cases indicator is significantly associated with the outcome variable (i.e. social class of destination), this indicator is not significant when including our control variables (with the exception of the contrast 'intermediate jobs vs. top jobs'). We decide to apply listwise deletion since this strategy is considered a valid way to deal with missing data when the missingness indicator is (conditionally) independent in relation to the outcome variable (e.g. White \& Carlin, 2010). We acknowledge though that we might underestimate the parental social class gap.

We do not employ multiple imputation due to the limited number of variables available. Given that parental background is a key predictor for graduates' destinations and HE variables are key mediators, we avoid imputing the missing values based on these variables as this would create a circular bias. Similarly, we consider that substituting missing values with sample mean values would not overcome this issue and might introduce further biases.

## Reference

White, Ian R., and John B. Carlin. 2010. Bias and efficiency of multiple imputation compared with complete-case analysis for missing covariate values. Statistics in Medicine 29: 2920-31.

Table S1. Sample description comparing the distribution of excluded cases due to missing data, complete cases and total sample (column \%), sub-sample of those who were in employment).

| Variable | Excluded <br> cases | Complete <br> cases | Total |
| :---: | :---: | :---: | :---: |
| Social class 3.5 years since graduation |  |  |  |
| Higher manag \& profesionals | 27 | 29 | 29 |
| Lower manag \& professionals | 45 | 45 | 45 |
| Intermediate | 21 | 19 | 19 |
| Semi-routine and routine | 7 | 6 | 6 |
| Parental social class |  |  |  |
| Higher manag \& profesionals | 31 | 27 | 27 |
| Lower manag \& professionals | 31 | 32 | 32 |
| Intermediate | 24 | 25 | 25 |
| Semi-routine and routine | 14 | 16 | 16 |
| Gender |  |  |  |
| Male | 45 | 42 | 43 |
| Female | 55 | 58 | 57 |
| Graduation age | 4 | 3 | 3 |
| 20 | 74 | 79 | 77 |
| $21-22$ | 20 | 17 | 18 |
| $23-24$ | 3 | 1 | 1 |
| $25+$ |  | 80 | 84 |
| Race | 10 | 7 | 84 |
| White | 3 | 3 | 3 |
| Asian | 6 | 6 | 6 |


| Disability status |  |  |  |
| :---: | :---: | :---: | :---: |
| Not disabled | 89 | 90 | 90 |
| Disabled | 11 | 10 | 10 |
| Country of domicile (GB) |  |  |  |
| England | 82 | 85 | 85 |
| Scotland | 9 | 9 | 9 |
| Wales | 9 | 6 | 7 |
| Field of study |  |  |  |
| Medicine\&Veterinary | 3 | 3 | 3 |
| Subjects allied to medicine | 6 | 6 | 6 |
| Biological sciences, Agriculture, Physics, Maths, Computer science | 25 | 28 | 27 |
| Engineering and architecture | 10 | 9 | 9 |
| Social studies, Languages, Historical \& Philosophical studies, Arts \& design | 34 | 33 | 33 |
| Law | 4 | 4 | 4 |
| Business and mass communication | 15 | 14 | 14 |
| Education | 3 | 3 | 3 |
| Combined | suppressed | <1 | <1 |
| Higher education institution |  |  |  |
| Ancient universities | 8 | 8 | 8 |
| Old uniersities | 26 | 31 | 30 |
| Newer uniersities | 20 | 21 | 21 |
| Post-92 and other uniersities | 46 | 40 | 42 |
| Class of degree |  |  |  |
| First class | 15 | 17 | 17 |
| Upper-second class | 50 | 53 | 53 |
| Lower-second class | 25 | 22 | 23 |
| Third class | 4 | 3 | 3 |
| Unclassified | 5 | 4 | 4 |
| Further studies |  |  |  |
| No further qualifications | 55 | 55 | 55 |
| Higher degree by research | 1 | 1 | 1 |
| Higher degree by taught course | 13 | 12 | 12 |
| Postgraduate diploma | 9 | 12 | 11 |
| First degree | 1 | 1 | 1 |
| Other diploma or certificate | 9 | 8 | 8 |
| Professional qualification | 9 | 10 | 10 |
| Other qualification | 3 | 3 | 3 |
| Not aiming for a qualification | suppressed | <1 | <1 |
| Industry job 3.5 years since graduation |  |  |  |
| Primary | 1 | 1 | 1 |
| Secondary | 9 | 9 | 9 |
| Tertiary | 12 | 12 | 12 |
| Finance,insurance \& real estate | 6 | 7 | 7 |
| Professional, scientific and technical | 15 | 18 | 17 |
| Public administration, defence and compulsory social security | 5 | 5 | 5 |
| Education | 19 | 19 | 19 |
| Human health and social work | 12 | 14 | 13 |
| Other quaternary | 21 | 16 | 17 |
| Geographic mobility status |  |  |  |
| No | 30 | 28 | 29 |
| Yes | 70 | 72 | 71 |

[^0]Table S2. Parental social class (including separate category for missing values) and social class of dest ination.

|  | Social Class 3.5 Years Since Graduation |  |  |  |
| :---: | :---: | :---: | :---: | :---: |
| Parental Social Class |  <br> profesionals |  <br> professionals | Intermediate | Semi-routine <br> and routine |
| Higher manag \& profesionals | 35 | 43 | 17 | 4 |
| Lower manag \& professionals | 30 | 45 | 19 | 6 |
| Intermediate | 27 | 46 | 21 | 7 |
| Semi-routine and routine | 24 | 46 | 21 | 9 |
| Missing parental social class | 25 | 47 | 20 | 8 |

Table S3. Parental social class and social class of destination (row \%, restricted GB sample: only those in employment and with valid information on all variables used in our analysis, $\mathrm{N}=18,940$ )

| Unweighted Percentages | Class of Destination |  |  |
| :---: | :---: | :---: | :---: | :---: |
| Parental Social Class | $\begin{array}{c}\text { Higher manag \& } \\ \text { profesionals }\end{array}$ | $\begin{array}{c}\text { Lower manag \& } \\ \text { professionals }\end{array}$ | Intermediate | \(\left.\begin{array}{c}Semi-routine <br>


and routine\end{array}\right]\)| 4 |
| :---: |
| Higher manag \& profesionals |

Table S4. Great Britain NUTS 3 areas in the top decile of percentage of professionals, indicators merg ed from the ONS Annual population Survey (Oct 2009-Sept 2010).

| Inner London - West | 29.7 |
| :---: | :---: |
| Edinburgh, City of | 27.5 |
| Oxfordshire | 27.1 |
| South Nottinghamshire | 25.1 |
| Brighton and Hove | 25.1 |
| Cambridgeshire CC | 24.9 |
| Bristol, City of | 24.6 |
| York | 24.4 |
| Outer London - South | 24.2 |
| Inner London - East | 24.0 |
| Surrey | 24.0 |
| diff and Vale of Glamorgan | 23.6 |

Table S5. Great Britain NUTS 3 areas in the bottom decile of percentage of professionals, indicators merged from the ONS Annual population Survey (Oct 2009-Sept 2010).
Gwent Valleys
Cornwall and Isles of Scilly
Dumfries \& Galloway
Leicester
Stoke-on-Trent 13.3
East Ayrshire and North Ayrshire Mainland 13.013.0
Orkney Islands ..... 13.0
North and North East Lincolnshire ..... 12.8
North Lanarkshire ..... 12.6
Blackpool ..... 12.5
Kingston Upon Hull, City of ..... 12.4
Thurrock ..... 12.4
North Nottinghamshire ..... 11.6

Figure S1. Graduates' social class by social class of origin and by percentages of managers, directors and senior officials in the employment area (NUTS 3). Predicted median probability from a two-way interaction model.


Figure S2. Graduates' social class by social class of origin and by employment rate in the employment area (NUTS 3). Predicted median probability from a twoway interaction model.


Figure S3. Graduates' probability of attaining a top-level job by social class of origin and by percentages of professional jobs in the employment area (NUTS 3). Predicted median probability estimated in Figure 4, M2: Higher managerial and professional and Routine \& semi-routine parental social classes.


Figure S4. Graduates' probability of attaining a top-level job by social class of origin and by percentages of professional jobs in the employment area (NUTS 3). Predicted median probability estimated in Figure 4, M4: Higher managerial and professional and Routine \& semi-routine parental social classes.


Figure S5. Graduates' probability of attaining a top-level job by social class of origin and by percentages of professional jobs in the employment area (NUTS 3). Subsample of graduates who did NOT study Medicine \& Veterinary. Predicted median probability.

Gross interaction model (no controls)


Figure S6. Graduates' probability of attaining a top-level job by social class of origin and by percentages of professional jobs in the employment area (NUTS 3). Subsample of graduates who did NOT study Medicine \& Veterinary. Predicted median probability. Higher managerial and professional and Routine \& semi-routine parental social classes.


Figure S7. Distribution of class of degree by parental background by quartiles of professionals in the employment area (left: bottom quartile, right: top quartile): movers


Note: third class of degree and unclassified class of degree were combined to avoid counts in the cells smaller than the threshold recommended by HESA (22.5).

Figure S8. Graduates' social class by social class of origin and by percentages of professionals in the employment area (NUTS 3). Predicted median probability from a two-way interaction model (control variables included: gender, age at graduation, ethnicity, country of domicile and disability).


Figure S9. Graduates' social class by social class of origin, by percentages of professionals in the employment area (NUTS 3) and by geographic mobility. Predicted median probability from a three-way interaction model (control variables included: gender, age at graduation, ethnicity, country of domicile and disability).


Table S6. Full multilevel binary logistic models estimating graduates' probability of entering a top-level job 3.5 years from graduation. Movers.

|  | M1 | Bayesia <br> n-p | M2 | $\begin{aligned} & \text { Bayesia } \\ & \mathrm{n}-\mathrm{p} \end{aligned}$ | M3 | $\begin{aligned} & \text { Bayesia } \\ & \mathrm{n}-\mathrm{p} \end{aligned}$ | M4 | Bayesia n-p | M5 | $\begin{aligned} & \text { Bayesia } \\ & \mathrm{n}-\mathrm{p} \end{aligned}$ | M6 | $\begin{aligned} & \text { Bayesia } \\ & \mathrm{n}-\mathrm{p} \end{aligned}$ | M7 | $\begin{aligned} & \text { Bayesia } \\ & \mathrm{n}-\mathrm{p} \end{aligned}$ | M8 | Bayesia n-p |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Fixed Part |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| cons | -0.083 | 0.27 | -0.083 | 0.317 | -1.504 | 0.000 | 0.509 | 0.000 | 0.014 | 0.449 | -0.149 | 0.053 | 0.494 | 0.002 | -0.1 | 0.313 |
| Lower manag \& profess occup | -0.953 | 0.000 | -0.879 | 0.000 | -0.394 | 0.004 | -0.86 | 0.000 | -0.474 | 0.021 | -0.681 | 0.000 | -0.666 | 0.002 | -0.251 | 0.118 |
| Intermediate occupations | -0.792 | 0.000 | -0.659 | 0.001 | -0.24 | 0.122 | -0.58 | 0.002 | -0.285 | 0.032 | -0.544 | 0.001 | -0.514 | 0.011 | -0.043 | 0.398 |
| Semi-routine and routine occupations and other | -1.294 | 0.000 | -1.231 | 0.000 | -0.666 | 0.019 | -1.105 | 0.000 | -0.837 | 0.000 | -1.15 | 0.000 | -1.032 | 0.000 | -0.588 | 0.009 |
| job2_nuts3_professionals | -0.016 | 0.000 | -0.006 | 0.234 | 0.026 | 0.000 | -0.019 | 0.000 | 0.009 | 0.118 | -0.006 | 0.105 | -0.004 | 0.298 | 0.012 | 0.12 |
| Lower manag \& profess occup.job2_nuts3_professionals | 0.033 | 0.000 | 0.031 | 0.002 | 0.013 | 0.049 | 0.032 | 0.000 | 0.015 | 0.039 | 0.023 | 0.004 | 0.023 | 0.008 | 0.009 | 0.139 |
| Intermediate occupations.job2_nuts3_professio nals | 0.022 | 0.004 | 0.016 | 0.093 | 0.001 | 0.492 | 0.018 | 0.051 | 0.003 | 0.427 | 0.012 | 0.076 | 0.011 | 0.145 | -0.004 | 0.335 |
| Semi-routine and routine occupations and other.job2_nuts3_professionals | 0.038 | 0.000 | 0.032 | 0.008 | 0.014 | 0.1 | 0.035 | 0.002 | 0.019 | 0.021 | 0.03 | 0.001 | 0.028 | 0.003 | 0.018 | 0.06 |
| female |  |  | -0.606 | 0.000 | -0.521 | 0.000 | -0.607 | 0.000 | -0.696 | 0.000 | -0.573 | 0.000 | -0.565 | 0.000 | -0.442 | 0.000 |
| 20 |  |  | -0.249 | 0.015 | $-0.247$ | 0.016 | -0.23 | 0.018 | -0.338 | 0.002 | -0.228 | 0.024 | -0.24 | 0.018 | -0.191 | 0.065 |
| 23-24 |  |  | 0.556 | 0.000 | 0.056 | 0.159 | 0.56 | 0.000 | 0.236 | 0.000 | 0.567 | 0.000 | 0.499 | 0.000 | 0.093 | 0.054 |
| 25+ |  |  | 1.368 | 0.000 | 0.25 | 0.127 | 1.359 | 0.000 | 0.731 | 0.000 | 1.364 | 0.000 | 1.206 | 0.000 | 0.35 | 0.056 |
| Asian |  |  | 0.349 | 0.000 | 0.049 | 0.273 | 0.295 | 0.000 | 0.308 | 0.000 | 0.302 | 0.000 | 0.295 | 0.001 | 0.033 | 0.35 |
| Black |  |  | -0.43 | 0.001 | -0.63 | 0.000 | -0.345 | 0.004 | -0.321 | 0.005 | -0.458 | 0.000 | -0.458 | 0.001 | -0.425 | 0.000 |
| Other (including mixed) |  |  | 0.003 | 0.481 | -0.179 | 0.019 | 0.001 | 0.487 | -0.025 | 0.379 | -0.001 | 0.493 | -0.017 | 0.419 | -0.119 | 0.095 |
| disabled |  |  | -0.28 | 0.000 | -0.229 | 0.000 | -0.239 | 0.000 | -0.252 | 0.000 | -0.249 | 0.000 | $-0.245$ | 0.000 | -0.136 | 0.027 |
| Scotland |  |  | 0.169 | 0.015 | 0.011 | 0.446 | 0.056 | 0.254 | 0.018 | 0.42 | 0.171 | 0.014 | 0.073 | 0.174 | -0.111 | 0.103 |
| Wales |  |  | -0.032 | 0.345 | -0.061 | 0.246 | -0.107 | 0.124 | 0.012 | 0.444 | 0.000 | 0.493 | -0.024 | 0.406 | -0.022 | 0.403 |
| Medicine\&Veterinary |  |  |  |  | 5.233 | 0.000 |  |  |  |  |  |  |  |  | 4.882 | 0.000 |
| Subjects allied to medicine |  |  |  |  | 0.872 | 0.000 |  |  |  |  |  |  |  |  | 1.076 | 0.000 |
| Biological sciences,agriculture,physics, maths, computer science |  |  |  |  | 0.861 | 0.000 |  |  |  |  |  |  |  |  | 0.852 | 0.000 |
| engineering and architecture |  |  |  |  | 1.497 | 0.000 |  |  |  |  |  |  |  |  | 1.214 | 0.000 |


| law | 1.341 | 0.000 |  |  |  |  |  | 1.069 | 0.000 |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| business and mass comunication | 0.389 | 0.000 |  |  |  |  |  | 0.435 | 0.000 |
| education | -1.379 | 0.000 |  |  |  |  |  | -0.75 | 0.001 |
| combined | 0.734 | 0.014 |  |  |  |  |  | 0.786 | 0.01 |
| old uni |  | -0.055 | 0.254 |  |  |  |  | -0.089 | 0.15 |
| newer uni |  | -0.232 | 0.000 |  |  |  |  | -0.146 | 0.053 |
| post-92 and other |  | -0.948 | 0.000 |  |  |  |  | -0.615 | 0.000 |
| upper-second class |  |  | -0.486 | 0.000 |  |  |  | -0.385 | 0.000 |
| lower-second class |  |  | -0.784 | 0.000 |  |  |  | -0.604 | 0.000 |
| third class |  |  | -1.086 | 0.000 |  |  |  | -0.94 | 0.000 |
| unclassified |  |  | 1.853 | 0.000 |  |  |  | 0.032 | 0.422 |
| Higher degree by research |  |  |  | 0.788 | 0.000 |  |  | 0.689 | 0.000 |
| Higher degree by taught course |  |  |  | 0.251 | 0.000 |  |  | 0.289 | 0.000 |
| Postgraduate diploma or certificate |  |  |  | -0.425 | 0.000 |  |  | -0.3 | 0.000 |
| First degree |  |  |  | 0.194 | 0.209 |  |  | -0.147 | 0.287 |
| Other diploma or certificate |  |  |  | -0.377 | 0.000 |  |  | -0.337 | 0.000 |
| Professional qualification |  |  |  | 0.638 | 0.000 |  |  | 0.265 | 0.000 |
| Other qualification |  |  |  | -0.434 | 0.002 |  |  | -0.362 | 0.004 |
| Not aiming for qualification |  |  |  | 0.359 | 0.131 |  |  | 0.503 | 0.088 |
| Primary |  |  |  |  |  | -0.235 | 0.127 | -0.331 | 0.066 |
| Secondary |  |  |  |  |  | -0.168 | 0.014 | -0.105 | 0.092 |
| Tertiary |  |  |  |  |  | -1.36 | 0.000 | -1.033 | 0.000 |
| Finance,insurance \& real estate |  |  |  |  |  | -0.66 | 0.000 | -0.504 | 0.000 |
| Public administration and <br> defence; <br> social <br> security   |  |  |  |  |  | -0.62 | 0.000 | -0.458 | 0.000 |
| Education |  |  |  |  |  | -1.524 | 0.000 | -1.149 | 0.000 |
| Human health and social work activities |  |  |  |  |  | -0.247 | 0.000 | -0.859 | 0.000 |
| Other quaternary |  |  |  |  |  | -1.097 | 0.000 | $-0.806$ | 0.000 |


| Random Part |  |  |  |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Level: job2_nuts3 |  |  |  |  |  |  |  |  |
| Var(cons) | 0.031 | 0.023 | 0.025 | 0.025 | 0.033 | 0.029 | 0.022 | 0.029 |
| Units: job2_nuts3 | 128 | 128 | 128 | 128 | 128 | 128 | 128 | 128 |
| Units: idresp | 13575 | 13575 | 13575 | 13575 | 13575 | 13575 | 13575 | 13575 |
| DIC: | $\begin{array}{r} 17273.60 \\ 8 \end{array}$ | $\begin{array}{r} 16744.2 \\ 4 \end{array}$ | $15209 .$ | $\begin{array}{r} 16333 . \\ 4 \end{array}$ | $\begin{array}{r} 16039.9 \\ 9 \end{array}$ | $\begin{array}{r} 16508.0 \\ 5 \end{array}$ | $\begin{array}{r} 15897 . \\ 9 \end{array}$ | $\begin{array}{r} 14347.2 \\ 6 \end{array}$ |
| pD: | 42.688 | 46.316 | 53.045 | 50.936 | 55.392 | 57.942 | 52.14 | 76.36 |
| Burnin: | 500 | 500 | 500 | 500 | 500 | 500 | 500 | 500 |
| Chain Length: | 5000 | 5000 | 5000 | 5000 | 5000 | 5000 | 5000 | 5000 |

Table S7. Full multilevel binary logistic models estimating graduates' probability of entering a top-level job 3.5 years from graduation. Movers, Medicine \& Veterinary excluded.

|  | $\begin{gathered} \hline \text { M1_n } \\ \text { o } \\ \text { med } \end{gathered}$ | $\begin{aligned} & \text { Bayesia } \\ & \text { n-p } \end{aligned}$ | M2 | $\begin{aligned} & \text { Bayesia } \\ & \text { n-p } \end{aligned}$ | M3_nomedici ne | Bayesia $\mathrm{n}-\mathrm{p}$ | M4 | $\begin{aligned} & \text { Bayesia } \\ & \text { n-p } \end{aligned}$ | M5 | $\begin{aligned} & \text { Bayesia } \\ & \text { n-p } \end{aligned}$ | M6 | $\begin{aligned} & \text { Bayesia } \\ & \text { n-p } \end{aligned}$ | M7 | $\begin{aligned} & \text { Bayesia } \\ & \text { n-p } \end{aligned}$ | M8 | $\begin{gathered} \text { Bayesia } \\ \text { n-p } \end{gathered}$ |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Fixed Part |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| cons | -0.999 | 0.000 | -0.646 | 0.000 | -1.489 | 0.000 | -0.227 | 0.147 | -0.258 | 0.087 | -0.66 | 0.000 | 0.02 | 0.434 | -0.129 | 0.237 |
| Lower manag \& profess occup | -0.549 | 0.000 | $-0.564$ | 0.000 | -0.38 | 0.107 | -0.466 | 0.000 | -0.446 | 0.017 | -0.494 | 0.000 | -0.484 | 0.005 | -0.238 | 0.093 |
| Intermediate occupations | $-0.364$ | 0.052 | -0.274 | 0.162 | -0.169 | 0.306 | -0.191 | 0.19 | -0.179 | 0.183 | -0.259 | 0.095 | -0.277 | 0.074 | 0.017 | 0.474 |
| Semi-routine and routine occupations and other | $-0.761$ | 0.001 | -0.618 | 0.006 | -0.567 | 0.014 | -0.657 | 0.008 | -0.706 | 0.001 | -0.696 | 0.002 | -0.61 | 0.000 | -0.521 | 0.031 |
| job2_nuts3_professionals | 0.018 | 0.054 | 0.019 | 0.01 | 0.025 | 0.000 | 0.009 | 0.144 | 0.021 | 0.000 | 0.017 | 0.002 | 0.017 | 0.006 | 0.013 | 0.005 |
| Lower manag \& profess occup.job2_nuts3_professionals | 0.018 | 0.007 | 0.02 | 0.005 | 0.012 | 0.166 | 0.017 | 0.003 | 0.015 | 0.058 | 0.017 | 0.002 | 0.018 | 0.014 | 0.009 | 0.136 |
| Intermediate occupations.job2_nuts3_profess ionals | 0.007 | 0.25 | 0.003 | 0.39 | -0.003 | 0.374 | 0.003 | 0.397 | -0.001 | 0.505 | 0.003 | 0.389 | 0.004 | 0.302 | -0.007 | 0.163 |
| Semi-routine and routine occupations and other.job2_nuts3_professionals | 0.019 | 0.069 | 0.012 | 0.176 | 0.009 | 0.292 | 0.02 | 0.054 | 0.017 | 0.043 | 0.016 | 0.054 | 0.016 | 0.09 | 0.015 | 0.107 |
| female:female |  |  | -0.713 | 0.000 | -0.525 | 0.000 | -0.7 | 0.000 | -0.732 | 0.000 | $-0.678$ | 0.000 | -0.572 | 0.000 | -0.442 | 0.000 |


| 20 | -0.232 | 0.019 | $-0.256$ | 0.011 | -0.214 | 0.032 | -0.235 | 0.021 | $-0.227$ | 0.029 | -0.199 | 0.049 | -0.197 | 0.047 |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| 23-24 | 0.144 | 0.003 | 0.05 | 0.177 | 0.183 | 0.000 | 0.12 | 0.018 | 0.164 | 0.001 | 0.127 | 0.01 | 0.091 | 0.06 |
| 25+ | 0.368 | 0.049 | 0.246 | 0.145 | 0.477 | 0.021 | 0.372 | 0.044 | 0.375 | 0.042 | 0.378 | 0.044 | 0.339 | 0.086 |
| Asian | 0.188 | 0.013 | 0.06 | 0.228 | 0.157 | 0.027 | 0.246 | 0.001 | 0.135 | 0.049 | 0.154 | 0.038 | 0.041 | 0.316 |
| Black | -0.532 | 0.000 | -0.646 | 0.000 | -0.456 | 0.001 | -0.368 | 0.003 | -0.532 | 0.000 | -0.492 | 0.000 | -0.427 | 0.001 |
| Other (including mixed) | -0.148 | 0.049 | -0.184 | 0.019 | -0.138 | 0.054 | -0.091 | 0.152 | -0.151 | 0.038 | -0.147 | 0.05 | -0.122 | 0.091 |
| disabled | -0.255 | 0.000 | -0.218 | 0.000 | -0.217 | 0.000 | -0.221 | 0.001 | -0.216 | 0.000 | -0.218 | 0.001 | -0.124 | 0.045 |
| Scotland | 0.129 | 0.052 | 0.03 | 0.361 | 0.046 | 0.315 | 0.125 | 0.063 | 0.13 | 0.061 | 0.051 | 0.273 | -0.087 | 0.15 |
| Wales | $-0.056$ | 0.26 | -0.055 | 0.28 | -0.099 | 0.131 | 0.017 | 0.41 | -0.029 | 0.38 | -0.036 | 0.354 | -0.014 | 0.445 |
| Subjects allied to medicine |  |  | 0.873 | 0.000 |  |  |  |  |  |  |  |  | 1.094 | 0.000 |
| Biological sciences,agriculture,physics, maths, computer science |  |  | 0.863 | 0.000 |  |  |  |  |  |  |  |  | 0.85 | 0.000 |
| engineering and architecture |  |  | 1.493 | 0.000 |  |  |  |  |  |  |  |  | 1.211 | 0.000 |
| law |  |  | 1.341 | 0.000 |  |  |  |  |  |  |  |  | 1.058 | 0.000 |
| business and mass comunication |  |  | 0.392 | 0.000 |  |  |  |  |  |  |  |  | 0.423 | 0.000 |
| education |  |  | -1.366 | 0.000 |  |  |  |  |  |  |  |  | -0.728 | 0.005 |
| combined |  |  | 0.729 | 0.019 |  |  |  |  |  |  |  |  | 0.772 | 0.011 |
| old uni |  |  |  |  | -0.027 | 0.365 |  |  |  |  |  |  | -0.076 | 0.178 |
| newer uni |  |  |  |  | -0.071 | 0.191 |  |  |  |  |  |  | -0.138 | 0.039 |
| post-92 and other |  |  |  |  | $-0.729$ | 0.000 |  |  |  |  |  |  | -0.599 | 0.000 |
| upper-second class |  |  |  |  |  |  | -0.472 | 0.000 |  |  |  |  | -0.381 | 0.000 |
| lower-second class |  |  |  |  |  |  | -0.761 | 0.000 |  |  |  |  | -0.599 | 0.000 |
| third class |  |  |  |  |  |  | -1.114 | 0.000 |  |  |  |  | -0.957 | 0.000 |
| unclassified |  |  |  |  |  |  | 0.06 | 0.359 |  |  |  |  | 0.026 | 0.445 |
| Higher degree by research |  |  |  |  |  |  |  |  | 0.912 | 0.000 |  |  | 0.672 | 0.002 |
| Higher degree by taught course |  |  |  |  |  |  |  |  | 0.307 | 0.000 |  |  | 0.292 | 0.000 |
| Postgraduate diploma or certificate |  |  |  |  |  |  |  |  | -0.447 | 0.000 |  |  | -0.299 | 0.000 |
| First degree |  |  |  |  |  |  |  |  | -0.093 | 0.361 |  |  | -0.17 | 0.255 |
| Other diploma or certificate |  |  |  |  |  |  |  |  | $-0.407$ | 0.000 |  |  | $-0.336$ | 0.000 |


| Professional qualification |  |  |  |  |  | 0.585 | 0.000 |  |  | 0.267 | 0.000 |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Other qualification |  |  |  |  |  | -0.391 | 0.001 |  |  | -0.361 | 0.005 |
| Not aiming for qualification |  |  |  |  |  | 0.411 | 0.113 |  |  | 0.495 | 0.084 |
| Primary |  |  |  |  |  |  |  | -0.125 | 0.275 | -0.292 | 0.086 |
| Secondary |  |  |  |  |  |  |  | -0.095 | 0.089 | -0.117 | 0.064 |
| Tertiary |  |  |  |  |  |  |  | -1.305 | 0.000 | -1.048 | 0.000 |
| Finance, insurance \& real estate |  |  |  |  |  |  |  | -0.632 | 0.000 | -0.514 | 0.000 |
| Public administration and defence; compulsory social security |  |  |  |  |  |  |  | -0.598 | 0.000 | -0.469 | 0.000 |
| Education |  |  |  |  |  |  |  | -1.495 | 0.000 | -1.156 | 0.000 |
| Human health and social work activities |  |  |  |  |  |  |  | -0.897 | 0.000 | -0.903 | 0.000 |
| Other quaternary |  |  |  |  |  |  |  | -1.075 | 0.000 | -0.817 | 0.000 |
| Random Part |  |  |  |  |  |  |  |  |  |  |  |
| Level: job2_nuts3 |  |  |  |  |  |  |  |  |  |  |  |
| Var(cons) | 0.052 | 0.043 | 0.025 | 0.043 | 0.043 | 0.043 |  | 0.034 |  | 0.027 |  |
| Units: job2_nuts3 | 128 | 128 | 128 | 128 | 128 | 128 |  | 128 |  | 128 |  |
| Units: idresp | 13075 | 13075 | 13075 | 13075 | 13075 | 13075 |  | 13075 |  | 13075 |  |
| DIC: | $\begin{array}{r} 16181 . \\ 4 \end{array}$ | $\begin{array}{r} 15792 . \\ 03 \end{array}$ | 15093.454 | $\begin{array}{r} 15534.2 \\ 35 \end{array}$ | $\begin{array}{r} 15598 . \\ 45 \end{array}$ | $\begin{array}{r} 15572 . \\ 3 \end{array}$ |  | $\begin{array}{r} 15039 . \\ 78 \end{array}$ |  | $\begin{array}{r} 14217.9 \\ 97 \end{array}$ |  |
| pD: | 51.781 | 56.78 | 52.429 | 59.103 | 59.489 | 63.387 |  | 57.803 |  | 73.344 |  |
| Burnin: | 500 | 500 | 500 | 500 | 500 | 500 |  | 500 |  | 500 |  |
| Chain Length: | 5000 | 5000 | 5000 | 5000 | 5000 | 5000 |  | 5000 |  | 5000 |  |

Table S8. Full multilevel binary logistic models estimating graduates' probability of entering a top-level job 3.5 years from graduation. Stayers.

|  | M1 | $\begin{gathered} \text { Bayesian- } \\ \text { p } \end{gathered}$ | M2 | $\begin{gathered} \text { Bayesian- } \\ \text { p } \end{gathered}$ | M4 | $\begin{gathered} \text { Bayesian- } \\ \mathbf{p} \end{gathered}$ | M5 | $\begin{gathered} \text { Bayesian- } \\ \mathbf{p} \end{gathered}$ | M6 | $\begin{gathered} \text { Bayesian- } \\ \text { p } \end{gathered}$ | M7 | Bayesian- $\mathbf{p}$ | M8 | $\begin{gathered} \text { Bayesian- } \\ \text { p } \end{gathered}$ |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Fixed Part |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| cons | -1.924 | 0.000 | -1.419 | 0.000 | -1.279 | 0.000 | $-1.338$ | 0.000 | -1.827 | 0.000 | -0.266 | 0.21 | 0.99 | 0.000 |
| Lower manag \& profess occup | 0.037 | 0.429 | 0.027 | 0.553 | 0.388 | 0.193 | 0.616 | 0.107 | 0.43 | 0.152 | 0.41 | 0.203 | -0.197 | 0.296 |
| Intermediate occupations | -0.391 | 0.104 | -0.19 | 0.346 | 0.253 | 0.265 | 0.345 | 0.232 | 0.244 | 0.303 | -0.031 | 0.461 | -0.407 | 0.123 |


| Semi-routine and routine occupations and other | 0.226 | 0.404 | -0.044 | 0.441 | 0.383 | 0.265 | 0.457 | 0.168 | 0.37 | 0.274 | 0.223 | 0.31 | -0.158 | 0.373 |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| job2_nuts3_professionals | 0.035 | 0.001 | 0.026 | 0.082 | 0.031 | 0.022 | 0.049 | 0.012 | 0.044 | 0.002 | 0.025 | 0.055 | -0.01 | 0.234 |
| Lower manag \& profess occup.job2_nuts3_professionals | -0.017 | 0.168 | -0.017 | 0.246 | -0.032 | 0.076 | -0.045 | 0.038 | -0.035 | 0.023 | -0.032 | 0.085 | 0.002 | 0.471 |
| Intermediate occupations.job2_nuts3_professionals | 0.001 | 0.427 | -0.01 | 0.328 | -0.028 | 0.121 | -0.033 | 0.08 | -0.03 | 0.102 | -0.013 | 0.311 | 0.011 | 0.294 |
| Semi-routine and routine occupations and other.job2_nuts3_professionals | -0.037 | 0.124 | -0.027 | 0.131 | -0.042 | 0.046 | -0.047 | 0.026 | -0.046 | 0.066 | -0.033 | 0.074 | -0.005 | 0.443 |
| female:female |  |  | -0.609 | 0.000 | $-0.603$ | 0.000 | -0.687 | 0.000 | -0.577 | 0.000 | -0.479 | 0.000 | -0.524 | 0.000 |
| 20 |  |  | -0.579 | 0.004 | -0.617 | 0.003 | -0.771 | 0.001 | -0.629 | 0.001 | -0.59 | 0.008 | -0.8 | 0.000 |
| 23-24 |  |  | 0.654 | 0.000 | 0.695 | 0.000 | 0.556 | 0.000 | 0.668 | 0.000 | 0.68 | 0.000 | 0.592 | 0.000 |
| 25+ |  |  | 1.036 | 0.002 | 1.099 | 0.002 | 0.868 | 0.014 | 0.924 | 0.003 | 1.023 | 0.004 | 0.868 | 0.025 |
| Asian |  |  | 0.294 | 0.012 | 0.281 | 0.013 | 0.329 | 0.008 | 0.254 | 0.034 | 0.33 | 0.009 | 0.296 | 0.024 |
| Black |  |  | -0.53 | 0.027 | -0.43 | 0.065 | -0.37 | 0.089 | -0.525 | 0.025 | -0.483 | 0.048 | -0.245 | 0.216 |
| Other (including mixed) |  |  | 0.1 | 0.252 | 0.131 | 0.199 | 0.178 | 0.124 | 0.105 | 0.239 | 0.038 | 0.402 | 0.088 | 0.294 |
| disabled |  |  | -0.436 | 0.001 | -0.409 | 0.000 | -0.304 | 0.007 | -0.43 | 0.000 | -0.414 | 0.003 | -0.258 | 0.035 |
| Scotland |  |  | 0.006 | 0.473 | -0.093 | 0.278 | -0.233 | 0.042 | 0.02 | 0.44 | -0.072 | 0.287 | -0.379 | 0.013 |
| Wales |  |  | -0.618 | 0.002 | -0.808 | 0.000 | -0.527 | 0.000 | -0.594 | 0.000 | -0.673 | 0.000 | -0.723 | 0.000 |
| old uni |  |  |  |  | 0.096 | 0.292 |  |  |  |  |  |  | -0.023 | 0.46 |
| newer uni |  |  |  |  | -0.039 | 0.406 |  |  |  |  |  |  | -0.121 | 0.271 |
| post-92 and other |  |  |  |  | $-0.733$ | 0.000 |  |  |  |  |  |  | -0.685 | 0.000 |
| upper-second class |  |  |  |  |  |  | -0.474 | 0.000 |  |  |  |  | -0.317 | 0.004 |
| lower-second class |  |  |  |  |  |  | -1.053 | 0.000 |  |  |  |  | -0.767 | 0.000 |
| third class |  |  |  |  |  |  | -1.79 | 0.000 |  |  |  |  | -1.516 | 0.000 |
| unclassified |  |  |  |  |  |  | 0.811 | 0.000 |  |  |  |  | 0.99 | 0.000 |
| Higher degree by research |  |  |  |  |  |  |  |  | 0.33 | 0.273 |  |  | 0.23 | 0.344 |
| Higher degree by taught course |  |  |  |  |  |  |  |  | 0.018 | 0.435 |  |  | -0.187 | 0.079 |
| Postgraduate diploma or certificate |  |  |  |  |  |  |  |  | -0.534 | 0.000 |  |  | -0.129 | 0.203 |
| First degree |  |  |  |  |  |  |  |  | -0.241 | 0.312 |  |  | -0.251 | 0.311 |
| Other diploma or certificate |  |  |  |  |  |  |  |  | -0.271 | 0.033 |  |  | -0.178 | 0.129 |
| Professional qualification |  |  |  |  |  |  |  |  | 0.909 | 0.000 |  |  | 0.6 | 0.000 |
| Other qualification |  |  |  |  |  |  |  |  | -0.522 | 0.009 |  |  | -0.369 | 0.076 |
| Not aiming for qualification |  |  |  |  |  |  |  |  | -0.149 | 0.397 |  |  | 0.488 | 0.18 |


| Primary |  |  |  |  |  | -1.305 | 0.000 | -1.284 | 0.000 |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Secondary |  |  |  |  |  | -0.724 | 0.000 | -0.615 | 0.000 |
| Tertiary |  |  |  |  |  | -1.952 | 0.000 | -1.753 | 0.000 |
| Finance,insurance \& real estate |  |  |  |  |  | -1.312 | 0.000 | -1.191 | 0.000 |
| Public administration and defence; compulsory social security |  |  |  |  |  | -1.074 | 0.000 | -0.972 | 0.000 |
| Education |  |  |  |  |  | -2.367 | 0.000 | -2.175 | 0.000 |
| Human health and social work activities |  |  |  |  |  | -1.085 | 0.000 | -1.111 | 0.000 |
| Other quaternary |  |  |  |  |  | -1.433 | 0.000 | -1.298 | 0.000 |
| Random Part |  |  |  |  |  |  |  |  |  |
| Level: job2_nuts3 |  |  |  |  |  |  |  |  |  |
| Var(cons) | 0.052 | 0.037 | 0.04 | 0.027 | 0.035 | 0.017 |  | 0.008 |  |
| Units: job2_nuts3 | 128 | 128 | 128 | 128 | 128 | 128 |  | 128 |  |
| Units: idresp | 5365 | 5365 | 5365 | 5365 | 5365 | 5365 |  | 5365 |  |
| DIC: | 5081.85 | 4929.36 | 4829.4 | 4767.642 | 4847.78 | 4536.28 |  | 4337.78 |  |
| pD: | 33.162 | 37.116 | 40.192 | 36.437 | 43.538 | 34.527 |  | 44.629 |  |
| Burnin: | 500 | 500 | 500 | 500 | 500 | 500 |  | 500 |  |
| Chain Length: | 5000 | 5000 | 5000 | 5000 | 5000 | 5000 |  | 5000 |  |

Note: Model controlling for field of study only has encountered convergence issues for the group of stayers and hence models including fields of study are not presented for this grou


[^0]:    Note: Complete-case sample: 18,940. The excluded-cases and the total samples vary depending on the missing data on each variable.

