

# Mr Bun the baker:

## What is the relationship between parental occupations and filial educational attainment?



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### Abstract:

In this presentation we investigate the relationship between parental occupations and filial education attainment. The focus of the presentation is General Certificate of Secondary Education (GCSE) attainment. GCSEs are public examinations and mark the first major branching point in a young person's educational career. Poor GCSE attainment is a considerable obstacle which precludes young people from pursuing more advanced educational courses. Young people with low levels of GCSE attainment are usually more likely to leave education at the minimum school leaving age and their qualification level frequently disadvantages them in the labour market and low levels of qualifications are also likely to have a longer term impact on experiences in the adult labour market

In this presentation we analyse a recently harmonised dataset which combines a number of cohorts from the Youth Cohort Study of England and Wales. The analyses concentrate on pupils attending comprehensive schools in the 1990s. We analyse some alternative measures of GCSE attainment and consider a number of alternative classifications of parental occupations. Within the data there is item non-response and we attempt to develop the analysis by employing multiple imputation methods.

We conclude that there is a relatively strong (and persistent) association between parental occupations and filial GCSE attainment. This relationship is observed irrespective of however GCSE attainment and parental occupations are measured. Parental occupation plays a more striking role in GCSE attainment than both gender and ethnicity. These findings make a contribution to wider debates within social stratification research.

Table 1 Summary Statistics of GCSE Attainment (all YCS Cohorts)

|  | A     | B    | C    | D | E  | F     | G    | H     | I     |
|--|-------|------|------|---|----|-------|------|-------|-------|
| <b>Overall</b>   | 55120 | 0.42 | 4.07 | 0 | 84 | 35.11 | 0.08 | 34.94 | 35.27 |
| <b>YCS Cohorts</b>                                       |       |      |      |   |    |       |      |       |       |
| 1990   | 10350 | 0.33 | 3.15 | 0 | 84 | 28.54 | 0.17 | 28.21 | 28.87 |
| 1993   | 12930 | 0.41 | 3.92 | 0 | 84 | 33.83 | 0.18 | 33.48 | 34.18 |
| 1995   | 11188 | 0.44 | 4.26 | 0 | 84 | 36.95 | 0.19 | 36.58 | 37.32 |
| 1997   | 11108 | 0.45 | 4.25 | 0 | 84 | 36.20 | 0.19 | 35.84 | 36.57 |
| 1999   | 9544  | 0.50 | 4.81 | 0 | 84 | 40.39 | 0.20 | 40.00 | 40.78 |
| <b>Gender</b>  |       |      |      |   |    |       |      |       |       |
| Males  | 25289 | 0.37 | 3.60 | 0 | 84 | 32.95 | 0.12 | 32.71 | 33.18 |
| Females  | 29831 | 0.47 | 4.54 | 0 | 84 | 37.29 | 0.11 | 37.07 | 37.51 |
| <b>Ethnicity</b>   |       |      |      |   |    |       |      |       |       |
| White  | 51106 | 0.42 | 4.07 | 0 | 84 | 35.12 | 0.09 | 34.95 | 35.29 |
| Black  | 762   | 0.31 | 3.16 | 0 | 84 | 30.71 | 0.67 | 29.40 | 32.01 |
| Indian   | 1303  | 0.48 | 4.51 | 0 | 83 | 37.83 | 0.52 | 36.80 | 38.85 |
| Pakistani  | 714   | 0.29 | 3.06 | 0 | 84 | 30.63 | 0.66 | 29.33 | 31.93 |
| Bangladeshi  | 221   | 0.36 | 3.60 | 0 | 79 | 32.45 | 1.31 | 29.88 | 35.02 |
| Other Asian  | 524   | 0.58 | 5.33 | 0 | 83 | 40.94 | 0.92 | 39.13 | 42.75 |
| Others   | 490   | 0.46 | 4.33 | 0 | 82 | 36.73 | 0.93 | 34.91 | 38.56 |
| <b>NS-SEC</b>  |       |      |      |   |    |       |      |       |       |
| Large employers & higher managers                        | 3345  | 0.62 | 5.76 | 0 | 84 | 43.23 | 0.33 | 42.59 | 43.88 |
| Higher professional occupations                          | 5030  | 0.70 | 6.43 | 0 | 84 | 46.41 | 0.27 | 45.88 | 46.94 |
| Lower managerial & professional intermediate occupations | 13484 | 0.55 | 5.13 | 0 | 84 | 40.30 | 0.17 | 39.97 | 40.63 |
| Small employers & own account                            | 9336  | 0.33 | 3.32 | 0 | 84 | 31.46 | 0.19 | 31.09 | 31.83 |
| Lower supervisory & technical                            | 3652  | 0.30 | 3.03 | 0 | 83 | 30.35 | 0.28 | 29.79 | 30.90 |
| Semi-routine occupations                                 | 6561  | 0.24 | 2.58 | 0 | 83 | 28.09 | 0.21 | 27.68 | 28.50 |
| Routine occupations                                      | 4000  | 0.19 | 2.05 | 0 | 80 | 24.41 | 0.26 | 23.90 | 24.92 |
| <b>NS-SEC (3 Class)</b>                                  |       |      |      |   |    |       |      |       |       |
| Managerial & Professional                                | 21859 | 0.60 | 5.52 | 0 | 84 | 42.09 | 0.13 | 41.83 | 42.35 |
| Intermediate   | 19048 | 0.39 | 3.81 | 0 | 84 | 34.00 | 0.13 | 33.74 | 34.27 |
| Working  | 14213 | 0.24 | 2.54 | 0 | 83 | 27.56 | 0.14 | 27.28 | 27.84 |
| <b>(Registrar General)</b>                               |       |      |      |   |    |       |      |       |       |
| Professional (I)   | 4637  | 0.69 | 6.33 | 0 | 84 | 45.91 | 0.29 | 45.35 | 46.48 |
| Intermediate(II)   | 20282 | 0.55 | 5.13 | 0 | 84 | 40.35 | 0.14 | 40.08 | 40.61 |
| Skilled Non-Manual (III <sub>n</sub> )                   | 13140 | 0.41 | 3.94 | 0 | 84 | 34.88 | 0.16 | 34.56 | 35.19 |
| Skilled Manual (III <sub>m</sub> )                       | 10233 | 0.26 | 2.74 | 0 | 84 | 28.66 | 0.17 | 28.33 | 28.99 |
| Partly Skilled (IV)                                      | 5416  | 0.24 | 2.48 | 0 | 83 | 27.01 | 0.23 | 26.56 | 27.47 |
| Unskilled (V)  | 1412  | 0.17 | 1.92 | 0 | 79 | 22.99 | 0.43 | 22.14 | 23.84 |
| <b>Elias Skills Classification</b>                       |       |      |      |   |    |       |      |       |       |
| Managerial & Professional                                | 16061 | 0.65 | 5.95 | 0 | 84 | 44.15 | 0.15 | 43.85 | 44.45 |
| Middle   | 21690 | 0.39 | 3.76 | 0 | 84 | 33.74 | 0.13 | 33.50 | 33.99 |
| Working  | 15377 | 0.31 | 3.10 | 0 | 84 | 30.47 | 0.15 | 30.19 | 30.76 |
| Elementary   | 1992  | 0.19 | 2.07 | 0 | 76 | 24.39 | 0.37 | 23.65 | 25.12 |

A=sample size; B proportion attaining 5+GCSEs Grades A\*-C; C (survey) mean number of GCSEs at Grades A\*-C; D minimum GCSE points score; E maximum GCSE points score; F (survey) mean GCSE point score; G (linearized) standard error of (survey) mean GCSE point score; H lower 95% confidence interval (survey) mean GCSE point score; I upper 95% confidence interval (survey) mean GCSE point score.

Table 2 Survey Logistic Regression Models Year 11 5+ GCSEs Grades A\*-C (all YCS 1990s Cohorts)

|  | Models             |                    |                    |                    |                    |                    |
|--|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|
|  | (1)                | (2)                | (3)                | (4)                | (5)                | (6)                |
| <b>YCS Cohorts</b>                           |                    |                    |                    |                    |                    |                    |
| 1990   | 0                  | 0                  | 0                  | 0                  | 0                  | 0                  |
| 1993   | 0.37***<br>(0.03)  | 0.37***<br>(0.03)  | 0.37***<br>(0.03)  | 0.37***<br>(0.03)  | 0.35***<br>(0.03)  | 0.35***<br>(0.03)  |
| 1995   | 0.48***<br>(0.03)  | 0.49***<br>(0.03)  | 0.49***<br>(0.03)  | 0.49***<br>(0.03)  | 0.47***<br>(0.03)  | 0.49***<br>(0.03)  |
| 1997   | 0.53***<br>(0.03)  | 0.55***<br>(0.03)  | 0.54***<br>(0.03)  | 0.56***<br>(0.03)  | 0.55***<br>(0.03)  | 0.55***<br>(0.03)  |
| 1999   | 0.74***<br>(0.03)  | 0.73***<br>(0.03)  | 0.73***<br>(0.03)  | 0.71***<br>(0.03)  | 0.71***<br>(0.03)  | 0.69***<br>(0.03)  |
| <b>Gender</b>                                |                    |                    |                    |                    |                    |                    |
| Females                                      | 0                  | 0                  | 0                  | 0                  | 0                  | 0                  |
| Males  | -0.41***<br>(0.02) | -0.47***<br>(0.02) | -0.46***<br>(0.02) | -0.45***<br>(0.02) | -0.45***<br>(0.02) | -0.45***<br>(0.02) |
| <b>Ethnicity</b>                             |                    |                    |                    |                    |                    |                    |
| White  | 0                  | 0                  | 0                  | 0                  | 0                  | 0                  |
| Black  | -0.55***<br>(0.08) | -0.64***<br>(0.09) | -0.62***<br>(0.09) | -0.59***<br>(0.09) | -0.58***<br>(0.09) | -0.49***<br>(0.08) |
| Indian                                       | 0.19**<br>(0.06)   | 0.50***<br>(0.07)  | 0.43***<br>(0.06)  | 0.37***<br>(0.07)  | 0.42***<br>(0.07)  | 0.34***<br>(0.06)  |
| Pakistani                                    | -0.67***<br>(0.08) | -0.19*<br>(0.09)   | -0.34***<br>(0.09) | -0.34***<br>(0.09) | -0.33***<br>(0.10) | -0.40***<br>(0.09) |
| Bangladeshi                                  | -0.31*<br>(0.15)   | 0.26<br>(0.16)     | 0.08<br>(0.16)     | 0.19<br>(0.15)     | 0.19<br>(0.17)     | 0.02<br>(0.15)     |
| Other Asians                                 | 0.62***<br>(0.10)  | 0.87***<br>(0.11)  | 0.77***<br>(0.11)  | 0.78***<br>(0.11)  | 0.84***<br>(0.11)  | 0.82***<br>(0.11)  |
| Other Groups                                 | 0.02<br>(0.10)     | 0.05<br>(0.11)     | 0.03<br>(0.10)     | 0.00<br>(0.10)     | -0.02<br>(0.11)    | 0.03<br>(0.11)     |
| <b>Parental Occupational Classifications</b> |                    |                    |                    |                    |                    |                    |
| <b>NS-SEC</b>                                |                    |                    |                    |                    |                    |                    |
| Large Employers & Higher Managers            |                    | 0                  |                    |                    |                    |                    |
| Higher Professionals                         |                    | 0.37***<br>(0.06)  |                    |                    |                    |                    |
| Lower Managerial & Professional              |                    | -0.26***<br>(0.05) |                    |                    |                    |                    |
| Intermediate Occupations                     |                    | -0.66***<br>(0.05) |                    |                    |                    |                    |
| Small Employers & Own Account                |                    | -1.25***<br>(0.05) |                    |                    |                    |                    |
| Lower Supervisors & Technical                |                    | -1.34***<br>(0.05) |                    |                    |                    |                    |
| Semi-Routine Occupations                     |                    | -1.68***<br>(0.05) |                    |                    |                    |                    |
| Routine Occupations                          |                    | -1.98***<br>(0.06) |                    |                    |                    |                    |
| <b>NS-SEC (3 Classes)</b>                    |                    |                    |                    |                    |                    |                    |
| Managerial & Professional                    |                    |                    | 0                  |                    |                    |                    |
| Intermediate                                 |                    |                    | -0.85***<br>(0.02) |                    |                    |                    |
| Routine & Manual                             |                    |                    | -1.57***<br>(0.02) |                    |                    |                    |

Table 2 Survey Logistic Regression Models Year 11 5+ GCSEs Grades A\*-C (all YCS 1990s Cohorts)  
*continued*

|                                    | (1)                | (2)               | (3)               | (4)                | (5)                | (6)                |
|------------------------------------|--------------------|-------------------|-------------------|--------------------|--------------------|--------------------|
| -----                              |                    |                   |                   |                    |                    |                    |
|                                    |                    |                   |                   | Models             |                    |                    |
|                                    |                    |                   |                   |                    |                    |                    |
| -----                              |                    |                   |                   |                    |                    |                    |
| <b>Registrar Generals</b>          |                    |                   |                   |                    |                    |                    |
| Professional(I)                    |                    |                   |                   | 0                  |                    |                    |
| Managerial & Technical (II)        |                    |                   |                   | -0.59***<br>(0.04) |                    |                    |
| Skilled Non-Manual (IIIN)          |                    |                   |                   | -1.15***<br>(0.04) |                    |                    |
| Skilled Manual (IIIM)              |                    |                   |                   | -1.83***<br>(0.04) |                    |                    |
| Partly Skilled (IV)                |                    |                   |                   | -2.01***<br>(0.05) |                    |                    |
| Unskilled (V)                      |                    |                   |                   | -2.37***<br>(0.08) |                    |                    |
| <b>CAMSIS (1-Male Scheme)</b>      |                    |                   |                   |                    |                    |                    |
| CAMSIS Score                       |                    |                   |                   |                    | -0.06***<br>(0.00) |                    |
| <b>Elias Skills Classification</b> |                    |                   |                   |                    |                    |                    |
| Managerial & Professional          |                    |                   |                   |                    |                    |                    |
| Middle                             |                    |                   |                   |                    |                    | -1.05***<br>(0.02) |
| Working                            |                    |                   |                   |                    |                    | -1.42***<br>(0.03) |
| Elementary                         |                    |                   |                   |                    |                    | -2.06***<br>(0.06) |
| Constant                           | -0.52***<br>(0.02) | 0.30***<br>(0.05) | 0.21***<br>(0.03) | 0.59***<br>(0.04)  | 2.02***<br>(0.04)  | 0.40***<br>(0.03)  |
| -----                              |                    |                   |                   |                    |                    |                    |
| n                                  | 55120              | 55120             | 55120             | 55120              | 55120              | 55120              |
| -----                              |                    |                   |                   |                    |                    |                    |
| Survey Regression                  |                    |                   |                   |                    |                    |                    |
| Rseudo R-squared                   | 0.022              | 0.093             | 0.083             | 0.085              | 0.098              | 0.077              |
| BIC                                | 74537.9            | 69186.1           | 69930.7           | 69789.5            | 68753.9            | 70382.5            |
| ll                                 | -37203.5           | -34489.3          | -34888.9          | -34801.9           | -34306.0           | -35109.4           |
| -----                              |                    |                   |                   |                    |                    |                    |

standard errors in parentheses  
 \* p<0.05, \*\* p<0.01, \*\*\* p<0.001

Table 3 Survey Negative Binomial Regression Models Year 11 Number of GCSEs Grades A\*-C (all YCS 1990s Cohorts)

|  | Models             |                    |                    |                    |                    |                    |
|--|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|
|  | (1)                | (2)                | (3)                | (4)                | (5)                | (6)                |
| <b>YCS Cohorts</b>                           |                    |                    |                    |                    |                    |                    |
| 1990   | 0                  | 0                  | 0                  | 0                  | 0                  | 0                  |
| 1993   | 0.22***<br>(0.01)  | 0.20***<br>(0.01)  | 0.20***<br>(0.01)  | 0.20***<br>(0.01)  | 0.19***<br>(0.01)  | 0.20***<br>(0.01)  |
| 1995   | 0.30***<br>(0.01)  | 0.29***<br>(0.01)  | 0.29***<br>(0.01)  | 0.29***<br>(0.01)  | 0.28***<br>(0.01)  | 0.29***<br>(0.01)  |
| 1997   | 0.30***<br>(0.01)  | 0.28***<br>(0.01)  | 0.28***<br>(0.01)  | 0.29***<br>(0.01)  | 0.28***<br>(0.01)  | 0.29***<br>(0.01)  |
| 1999   | 0.42***<br>(0.01)  | 0.38***<br>(0.01)  | 0.39***<br>(0.01)  | 0.38***<br>(0.01)  | 0.37***<br>(0.01)  | 0.37***<br>(0.01)  |
| <b>Gender</b>                                |                    |                    |                    |                    |                    |                    |
| Females                                      | 0                  | 0                  | 0                  | 0                  | 0                  | 0                  |
| Males  | -0.23***<br>(0.01) | -0.23***<br>(0.01) | -0.23***<br>(0.01) | -0.23***<br>(0.01) | -0.23***<br>(0.01) | -0.23***<br>(0.01) |
| <b>Ethnicity</b>                             |                    |                    |                    |                    |                    |                    |
| White  | 0                  | 0                  | 0                  | 0                  | 0                  | 0                  |
| Black  | -0.29***<br>(0.04) | -0.30***<br>(0.04) | -0.29***<br>(0.04) | -0.28***<br>(0.04) | -0.28***<br>(0.04) | -0.24***<br>(0.04) |
| Indian                                       | 0.08***<br>(0.02)  | 0.21***<br>(0.02)  | 0.19***<br>(0.02)  | 0.15***<br>(0.02)  | 0.15***<br>(0.02)  | 0.15***<br>(0.02)  |
| Pakistani                                    | -0.31***<br>(0.04) | -0.05<br>(0.04)    | -0.13**<br>(0.04)  | -0.12**<br>(0.04)  | -0.13**<br>(0.04)  | -0.16***<br>(0.04) |
| Bangladeshi                                  | -0.14*<br>(0.07)   | 0.15*<br>(0.07)    | 0.06<br>(0.07)     | 0.12<br>(0.07)     | 0.09<br>(0.07)     | 0.03<br>(0.07)     |
| Other Asians                                 | 0.26***<br>(0.03)  | 0.33***<br>(0.03)  | 0.29***<br>(0.03)  | 0.29***<br>(0.03)  | 0.29***<br>(0.03)  | 0.32***<br>(0.03)  |
| Other Groups                                 | -0.00<br>(0.04)    | 0.01<br>(0.04)     | 0.00<br>(0.04)     | -0.01<br>(0.04)    | -0.04<br>(0.04)    | -0.00<br>(0.04)    |
| <b>Parental Occupational Classifications</b> |                    |                    |                    |                    |                    |                    |
| <b>NS-SEC</b>                                |                    |                    |                    |                    |                    |                    |
| Large Employers & Higher Managers            |                    | 0                  |                    |                    |                    |                    |
| Higher Professional                          |                    | 0.11***<br>(0.02)  |                    |                    |                    |                    |
| Low Managerial & Professional                |                    | -0.11***<br>(0.01) |                    |                    |                    |                    |
| Intermediate Occupations                     |                    | -0.28***<br>(0.02) |                    |                    |                    |                    |
| Small Employers & Own Account                |                    | -0.56***<br>(0.02) |                    |                    |                    |                    |
| Lower Supervisors & Technical                |                    | -0.62***<br>(0.02) |                    |                    |                    |                    |
| Semi-Routine Occupations                     |                    | -0.81***<br>(0.02) |                    |                    |                    |                    |
| Routine Occupations                          |                    | -1.02***<br>(0.02) |                    |                    |                    |                    |
| <b>NS-SEC (3 Classes)</b>                    |                    |                    |                    |                    |                    |                    |
| Managerial & Professional                    |                    |                    | 0                  |                    |                    |                    |
| Intermediate Occupations                     |                    |                    | -0.37***<br>(0.01) |                    |                    |                    |
| Routine & Manual                             |                    |                    | -0.77***<br>(0.01) |                    |                    |                    |

Table 3 Survey Negative Binomial Regression Models Year 11 Number of GCSEs Grades A\*-C (all YCS 1990s Cohorts) *continued*

|  | Models            |                   |                   |                    |                    |                    |
|--|-------------------|-------------------|-------------------|--------------------|--------------------|--------------------|
|  | (1)               | (2)               | (3)               | (4)                | (5)                | (6)                |
| <b>Registrar Generals</b>                |                   |                   |                   |                    |                    |                    |
| Professional (I)                         |                   |                   |                   | 0                  |                    |                    |
| Managerial & Technical (II)              |                   |                   |                   | -0.20***<br>(0.01) |                    |                    |
| Skilled Non-Manual (IIIN)                |                   |                   |                   | -0.46***<br>(0.01) |                    |                    |
| Skilled Manual (IIIM)                    |                   |                   |                   | -0.82***<br>(0.02) |                    |                    |
| Partly Skilled (IV)                      |                   |                   |                   | -0.94***<br>(0.02) |                    |                    |
| Unskilled (V)                            |                   |                   |                   | -1.15***<br>(0.04) |                    |                    |
| <b>CAMSIS (1-Male Scheme)</b>            |                   |                   |                   |                    |                    |                    |
| CAMSIS Score                             |                   |                   |                   |                    | -0.03***<br>(0.00) |                    |
| <b>Elias Skills Classification</b>       |                   |                   |                   |                    |                    |                    |
| Managerial & Professional                |                   |                   |                   |                    |                    | 0                  |
| Middle                                   |                   |                   |                   |                    |                    | -0.44***<br>(0.01) |
| Working                                  |                   |                   |                   |                    |                    | -0.64***<br>(0.01) |
| Elementary                               |                   |                   |                   |                    |                    | -1.04***<br>(0.03) |
| Constant                                 | 1.26***<br>(0.01) | 1.62***<br>(0.02) | 1.58***<br>(0.01) | 1.70***<br>(0.01)  | 2.38***<br>(0.02)  | 1.64***<br>(0.01)  |
| n  | 55120             | 55120             | 55120             | 55120              | 55120              | 55120              |
| <b>Standard Negative Binomial Models</b> |                   |                   |                   |                    |                    |                    |
| Lnalpha                                  | -0.55***          | -0.74***          | -0.71***          | -0.72***           | -0.75***           | -0.69***           |
| BIC                                      | 292580.0          | 287455.7          | 288172.6          | 287869.5           | 287069.5           | 288831.0           |
| ll                                       | -146219.1         | -143618.7         | -144004.4         | -143836.5          | -143458.3          | -144328.2          |
| t statistics in parentheses              |                   |                   |                   |                    |                    |                    |
| * p<0.05, ** p<0.01, *** p<0.001         |                   |                   |                   |                    |                    |                    |

Table 4 Survey Regression Models Year 11 GCSE Score (all YCS 1990s Cohorts)

|  | Models             |                     |                     |                    |                    |                    |
|--|--------------------|---------------------|---------------------|--------------------|--------------------|--------------------|
|  | (1)                | (2)                 | (3)                 | (4)                | (5)                | (6)                |
| <b>YCS Cohorts</b>                           |                    |                     |                     |                    |                    |                    |
| 1990   | 0                  | 0                   | 0                   | 0                  | 0                  | 0                  |
| 1993   | 5.31***<br>(0.24)  | 4.93***<br>(0.22)   | 5.01***<br>(0.23)   | 4.96***<br>(0.23)  | 4.78***<br>(0.22)  | 4.86***<br>(0.23)  |
| 1995   | 8.45***<br>(0.25)  | 8.12***<br>(0.23)   | 8.20***<br>(0.23)   | 8.18***<br>(0.23)  | 7.93***<br>(0.23)  | 8.23***<br>(0.24)  |
| 1997   | 7.68***<br>(0.25)  | 7.33***<br>(0.23)   | 7.35***<br>(0.23)   | 7.47***<br>(0.23)  | 7.28***<br>(0.23)  | 7.50***<br>(0.24)  |
| 1999   | 11.91***<br>(0.26) | 11.10***<br>(0.24)  | 11.19***<br>(0.24)  | 10.98***<br>(0.24) | 10.78***<br>(0.24) | 10.88***<br>(0.24) |
| <b>Gender</b>                                |                    |                     |                     |                    |                    |                    |
| Females                                      | 0                  | 0                   | 0                   | 0                  | 0                  | 0                  |
| Males  | -4.35***<br>(0.16) | -4.42***<br>(0.15)  | -4.42***<br>(0.15)  | -4.34***<br>(0.15) | -4.27***<br>(0.15) | -4.34***<br>(0.15) |
| <b>Ethnicity</b>                             |                    |                     |                     |                    |                    |                    |
| White  | 0                  | 0                   | 0                   | 0                  | 0                  | 0                  |
| Black  | -5.30***<br>(0.63) | -5.48***<br>(0.63)  | -5.43***<br>(0.63)  | -5.10***<br>(0.63) | -5.01***<br>(0.63) | -4.25***<br>(0.62) |
| Indian                                       | 2.20***<br>(0.51)  | 4.67***<br>(0.50)   | 4.13***<br>(0.50)   | 3.60***<br>(0.51)  | 4.01***<br>(0.52)  | 3.39***<br>(0.50)  |
| Pakistani                                    | -5.20***<br>(0.65) | -0.46<br>(0.65)     | -1.93**<br>(0.65)   | -1.58*<br>(0.66)   | -1.10<br>(0.68)    | -2.34***<br>(0.66) |
| Bangladeshi                                  | -3.18*<br>(1.27)   | 1.92<br>(1.30)      | 0.45<br>(1.32)      | 1.47<br>(1.27)     | 1.51<br>(1.31)     | -0.01<br>(1.28)    |
| Other Asians                                 | 5.43***<br>(0.88)  | 6.93***<br>(0.85)   | 6.21***<br>(0.86)   | 6.19***<br>(0.85)  | 6.49***<br>(0.83)  | 6.76***<br>(0.84)  |
| Other Groups                                 | -0.26<br>(0.89)    | 0.04<br>(0.83)      | -0.20<br>(0.84)     | -0.38<br>(0.81)    | -0.60<br>(0.82)    | -0.19<br>(0.84)    |
| <b>Parental Occupational Classifications</b> |                    |                     |                     |                    |                    |                    |
| <b>NS-SEC</b>                                |                    |                     |                     |                    |                    |                    |
| Large Employers & Higher Managers            |                    | 0                   |                     |                    |                    |                    |
| Higher Professionals                         |                    | 3.02***<br>(0.41)   |                     |                    |                    |                    |
| Lower Managerial & Professional              |                    | -2.72***<br>(0.36)  |                     |                    |                    |                    |
| Intermediate Occupations                     |                    | -6.32***<br>(0.37)  |                     |                    |                    |                    |
| Small Employers & Own Account                |                    | -11.84***<br>(0.37) |                     |                    |                    |                    |
| Lower Supervisors & Technical                |                    | -12.32***<br>(0.42) |                     |                    |                    |                    |
| Semi-Routine Occupations                     |                    | -15.20***<br>(0.38) |                     |                    |                    |                    |
| Routine Occupations                          |                    | -18.37***<br>(0.41) |                     |                    |                    |                    |
| <b>NS-SEC (3 Classes)</b>                    |                    |                     |                     |                    |                    |                    |
| Managerial & Professional                    |                    |                     | 0                   |                    |                    |                    |
| Intermediate Occupations                     |                    |                     | -8.05***<br>(0.18)  |                    |                    |                    |
| Routine & Manual                             |                    |                     | -14.33***<br>(0.19) |                    |                    |                    |

Table 4 Survey Regression Models Year 11 GCSE Score (all YCS 1990s Cohorts) *continued*

|                                    | (1)                | (2)                | (3)                | (4)                 | (5)                | (6)                 |
|------------------------------------|--------------------|--------------------|--------------------|---------------------|--------------------|---------------------|
| <b>Registrar Generals</b>          |                    |                    |                    |                     |                    |                     |
| Professionals (I)                  |                    |                    |                    | 0                   |                    |                     |
| Managerial & Technical (II)        |                    |                    |                    | -5.33***<br>(0.31)  |                    |                     |
| Skilled Non-Manual (IIIN)          |                    |                    |                    | -10.64***<br>(0.32) |                    |                     |
| Skilled Manual (IIIM)              |                    |                    |                    | -16.75***<br>(0.33) |                    |                     |
| Partly Skilled (IV)                |                    |                    |                    | -18.78***<br>(0.36) |                    |                     |
| Unskilled (V)                      |                    |                    |                    | -21.88***<br>(0.51) |                    |                     |
| <b>CAMSIS (1-Male Scheme)</b>      |                    |                    |                    |                     |                    |                     |
| CAMSIS Score                       |                    |                    |                    |                     | -0.50***<br>(0.01) |                     |
| <b>Elias Skills Classification</b> |                    |                    |                    |                     |                    |                     |
| Managerial & Professional          |                    |                    |                    |                     |                    | 0                   |
| Middle                             |                    |                    |                    |                     |                    | -9.88***<br>(0.19)  |
| Working                            |                    |                    |                    |                     |                    | -13.44***<br>(0.21) |
| Elementary                         |                    |                    |                    |                     |                    | -19.26***<br>(0.39) |
| <b>Constant</b>                    | 30.77***<br>(0.18) | 38.99***<br>(0.36) | 37.92***<br>(0.20) | 41.48***<br>(0.32)  | 53.65***<br>(0.31) | 39.76***<br>(0.22)  |
| n                                  | 55120              | 55120              | 55120              | 55120               | 55120              | 55120               |
| Survey Regression R-squared        | 0.065              | 0.192              | 0.172              | 0.182               | 0.199              | 0.166               |
| Linear Regression R-squared        | 0.077              | 0.199              | 0.181              | 0.191               | 0.208              | 0.174               |
| adj. R-squared                     | 0.077              | 0.199              | 0.181              | 0.191               | 0.208              | 0.174               |
| BIC                                | 465194.9           | 457438.4           | 458612.6           | 457985.8            | 456760.5           | 459082.1            |
| ll                                 | -232532.0          | -228615.5          | -229229.9          | -228900.1           | -228309.3          | -229459.2           |
| standard errors in parentheses     |                    |                    |                    |                     |                    |                     |
| * p<0.05, ** p<0.01, *** p<0.001   |                    |                    |                    |                     |                    |                     |

Table 5 Survey Regression Models Year 11 Cohort Standardised GCSE Score (all YCS 1990s Cohorts)

|  | (1)                | (2)                | (3)                | (4)                | (5)                | (6)                |
|--|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|
| <b>Gender</b>                                |                    |                    |                    |                    |                    |                    |
| Females                                      | 0                  | 0                  | 0                  | 0                  | 0                  | 0                  |
| Males  | -0.25***<br>(0.01) | -0.25***<br>(0.01) | -0.25***<br>(0.01) | -0.25***<br>(0.01) | -0.25***<br>(0.01) | -0.25***<br>(0.01) |
| <b>Ethnicity</b>                             |                    |                    |                    |                    |                    |                    |
| White  | 0                  | 0                  | 0                  | 0                  | 0                  | 0                  |
| Black  | -0.31***<br>(0.04) | -0.32***<br>(0.04) | -0.32***<br>(0.04) | -0.30***<br>(0.04) | -0.30***<br>(0.04) | -0.25***<br>(0.04) |
| Indian                                       | 0.13***<br>(0.03)  | 0.27***<br>(0.03)  | 0.23***<br>(0.03)  | 0.20***<br>(0.03)  | 0.23***<br>(0.03)  | 0.19***<br>(0.03)  |
| Pakistani                                    | -0.31***<br>(0.04) | -0.04<br>(0.04)    | -0.12**<br>(0.04)  | -0.10**<br>(0.04)  | -0.08*<br>(0.04)   | -0.15***<br>(0.04) |
| Bangladeshi                                  | -0.18*<br>(0.07)   | 0.11<br>(0.08)     | 0.02<br>(0.08)     | 0.08<br>(0.07)     | 0.08<br>(0.08)     | -0.01<br>(0.07)    |
| Other Asians                                 | 0.31***<br>(0.05)  | 0.39***<br>(0.05)  | 0.35***<br>(0.05)  | 0.35***<br>(0.05)  | 0.37***<br>(0.05)  | 0.38***<br>(0.05)  |
| Other Groups                                 | -0.02<br>(0.05)    | -0.01<br>(0.05)    | -0.02<br>(0.05)    | -0.04<br>(0.05)    | -0.05<br>(0.05)    | -0.02<br>(0.05)    |
| <b>Parental Occupational Classifications</b> |                    |                    |                    |                    |                    |                    |
| <b>NS-SEC</b>                                |                    |                    |                    |                    |                    |                    |
| Large Employers & Higher Managers            |                    | 0                  |                    |                    |                    |                    |
| Higher Professionals                         |                    | 0.17***<br>(0.02)  |                    |                    |                    |                    |
| Lower Managerial & Professional              |                    | -0.15***<br>(0.02) |                    |                    |                    |                    |
| Intermediate Occupations                     |                    | -0.36***<br>(0.02) |                    |                    |                    |                    |
| Small Employers & Own Account                |                    | -0.67***<br>(0.02) |                    |                    |                    |                    |
| Lower Supervisors & Technical                |                    | -0.70***<br>(0.02) |                    |                    |                    |                    |
| Semi-Routine Occupations                     |                    | -0.87***<br>(0.02) |                    |                    |                    |                    |
| Routine Occupations                          |                    | -1.04***<br>(0.02) |                    |                    |                    |                    |
| <b>NS-SEC (3 Classes)</b>                    |                    |                    |                    |                    |                    |                    |
| Managerial & Professional                    |                    |                    | 0                  |                    |                    |                    |
| Intermediate Occupations                     |                    |                    | -0.46***<br>(0.01) |                    |                    |                    |
| Routine & Manual                             |                    |                    | -0.82***<br>(0.01) |                    |                    |                    |
| <b>Registrar Generals</b>                    |                    |                    |                    |                    |                    |                    |
| Professionals (I)                            |                    |                    |                    | 0                  |                    |                    |
| Managerial & Technical (II)                  |                    |                    |                    | -0.30***<br>(0.02) |                    |                    |
| Skilled Non-Manual (IIIN)                    |                    |                    |                    | -0.60***<br>(0.02) |                    |                    |
| Skilled Manual (IIIM)                        |                    |                    |                    | -0.95***<br>(0.02) |                    |                    |
| Partly Skilled (IV)                          |                    |                    |                    | -1.07***<br>(0.02) |                    |                    |
| Unskilled (V)                                |                    |                    |                    | -1.23***<br>(0.03) |                    |                    |

Table 5 Survey Regression Models Year 11 Cohort Standardised GCSE Score (all YCS 1990s Cohorts)  
*continued*

|                                    | (1)                | (2)               | (3)               | (4)               | (5)                | (6)                |
|------------------------------------|--------------------|-------------------|-------------------|-------------------|--------------------|--------------------|
| <b>CAMSIS (1-Male Scheme)</b>      |                    |                   |                   |                   |                    |                    |
| CAMSIS Score                       |                    |                   |                   |                   | -0.03***<br>(0.00) |                    |
| <b>Elias Skills Classification</b> |                    |                   |                   |                   |                    |                    |
| Managerial & Professional          |                    |                   |                   |                   |                    | 0                  |
| Middle                             |                    |                   |                   |                   |                    | -0.55***<br>(0.01) |
| Working                            |                    |                   |                   |                   |                    | -0.76***<br>(0.01) |
| Elementary                         |                    |                   |                   |                   |                    | -1.10***<br>(0.02) |
| Constant                           | -0.14***<br>(0.01) | 0.31***<br>(0.02) | 0.25***<br>(0.01) | 0.45***<br>(0.02) | 1.13***<br>(0.02)  | 0.35***<br>(0.01)  |
| n                                  | 55120              | 55120             | 55120             | 55120             | 55120              | 55120              |
| <b>Survey Regression</b>           |                    |                   |                   |                   |                    |                    |
| R-squared                          | 0.020              | 0.151             | 0.131             | 0.141             | 0.158              | 0.124              |
| <b>Linear Regression</b>           |                    |                   |                   |                   |                    |                    |
| R-squared                          | 0.013              | 0.144             | 0.124             | 0.134             | 0.153              | 0.118              |
| adj. R-squared                     | 0.013              | 0.143             | 0.124             | 0.134             | 0.153              | 0.118              |
| BIC                                | 149832.2           | 142112.4          | 143283.7          | 142679.0          | 141460.2           | 462665.4           |
| ll                                 | -74872.4           | -70974.3          | -71587.3          | -71268.5          | -70681.0           | -231272.6          |
| standard errors in parentheses     |                    |                   |                   |                   |                    |                    |
| * p<0.05, ** p<0.01, *** p<0.001   |                    |                   |                   |                   |                    |                    |

Figure 1

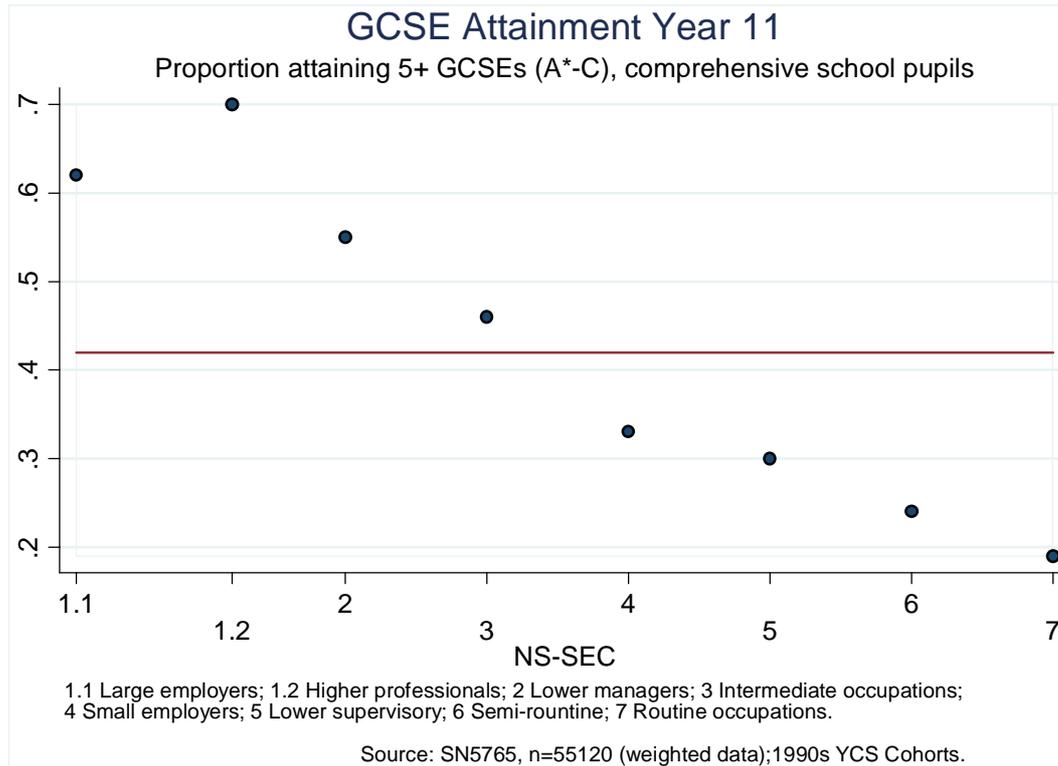


Figure 2

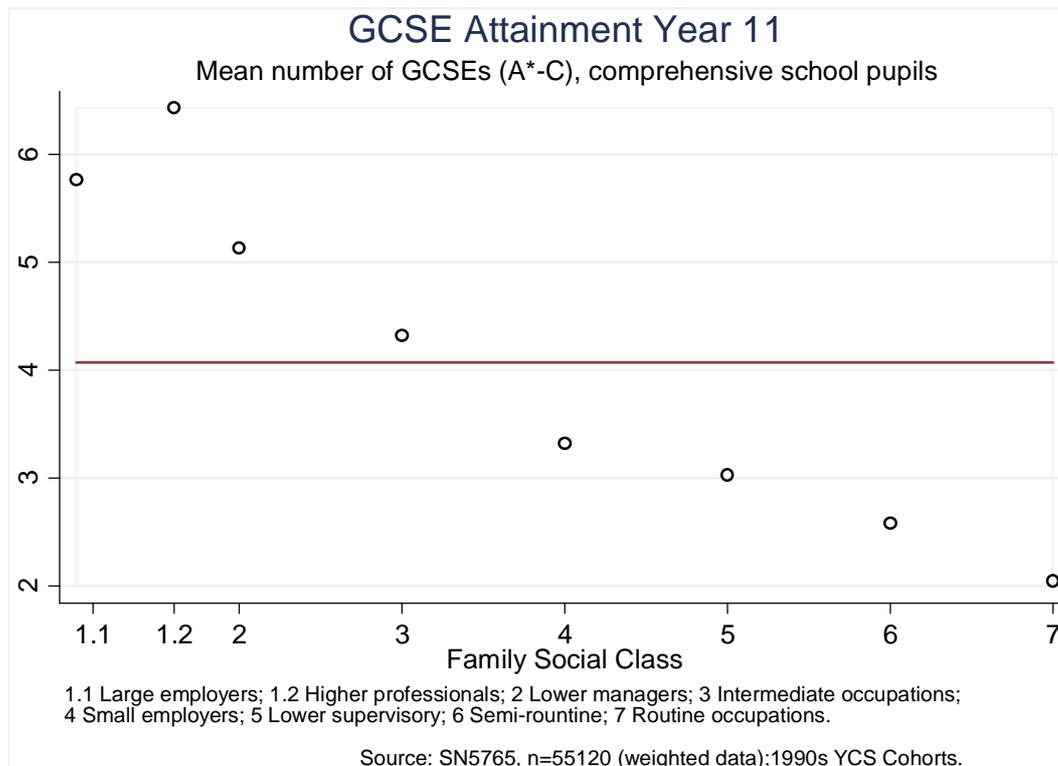


Figure 3

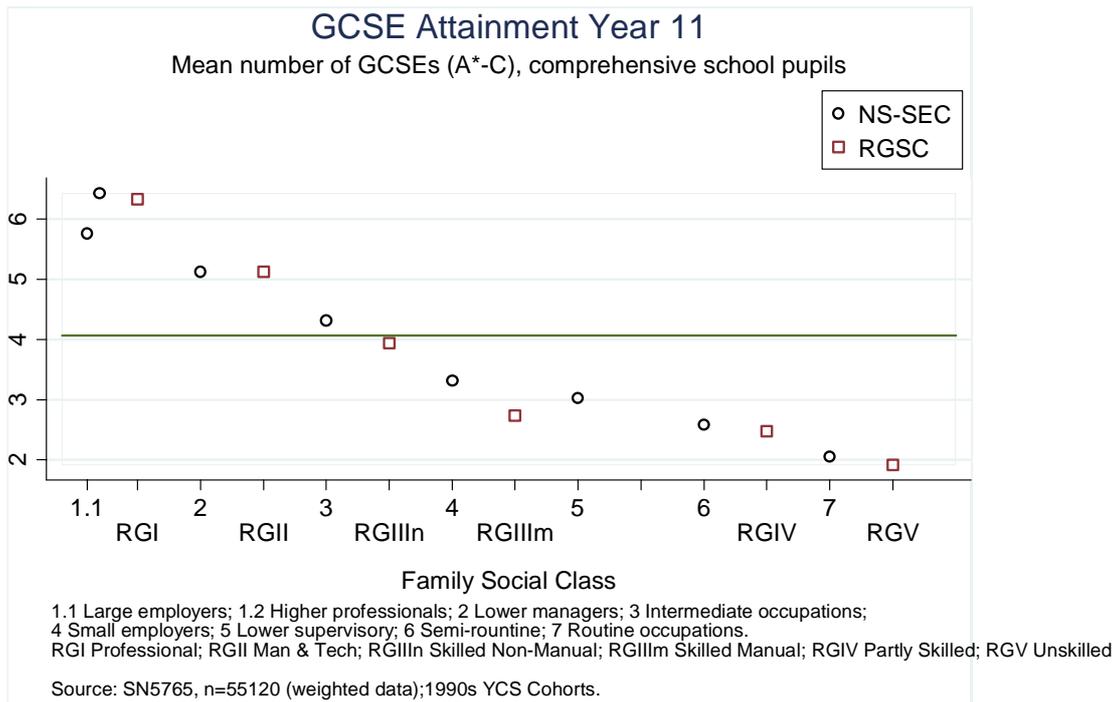


Figure 4

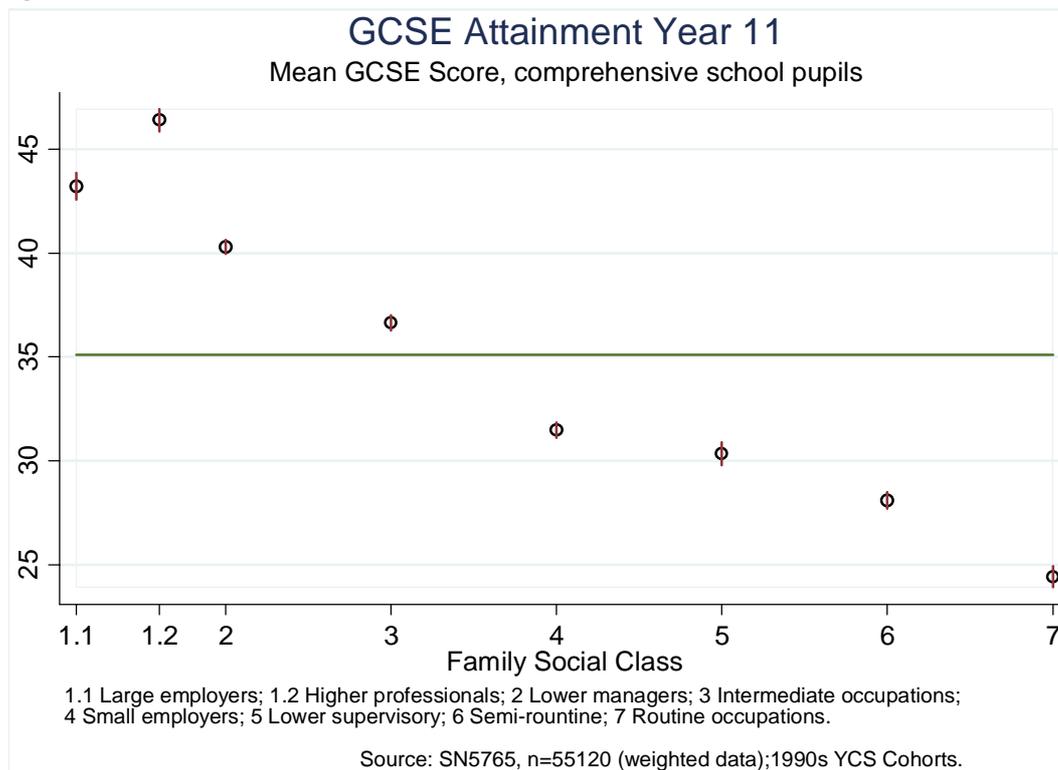


Table 6 20 SOC90s with Highest Mean GCSE Scores

| SOC90 Code and description   | <i>n</i> | Mean GCSE Score |
|--|----------|-----------------|
| 239. Other teaching professionals n.e.c. teacher dancing                             | 307      | 48.44           |
| 833. Annealers, hardeners, temperers (metal)   | 2        | 48.49           |
| 362. Taxation experts  | 57       | 48.92           |
| 233. Secondary (and middle school deemed secondary) education teaching professionals | 1320     | 49.05           |
| 224. Veterinarians   | 25       | 49.10           |
| 223. Dental practitioners  | 59       | 49.31           |
| 251. Management accountants  | 30       | 49.89           |
| 125. Organisation and methods and work study managers                                | 19       | 49.95           |
| 221. Pharmacists/pharmacologists   | 88       | 49.99           |
| 232. Education school inspectors advisor   | 72       | 50.29           |
| 191. Registrars and administrators of educational establishments                     | 49       | 50.62           |
| 209. Other natural scientists n.e.c.   | 61       | 50.65           |
| 230. University and polytechnic teaching professionals                               | 412      | 50.94           |
| 202. Physicists, geologists and meteorologists                                       | 46       | 51.20           |
| 220. Medical practitioners   | 263      | 51.52           |
| 313. Marine, insurance and other surveyors   | 11       | 53.65           |
| 290. Psychologists   | 36       | 53.97           |
| 241. Barristers and advocates  | 20       | 54.86           |
| 271. Archivists and curators   | 13       | 55.06           |
| 890. Washers, screeners and crushers in mines and quarries                           | 1        | 56.00           |

Table 7 20 SOC90s with Lowest Mean GCSE Scores

| SOC90 Code and description  | <i>n</i> | Mean GCSE Score |
|---|----------|-----------------|
| 591. Glass product and ceramics finishers and decorators                          | 9        | 22.43           |
| 536. Barbenders, steel fixers   | 9        | 22.21           |
| 885. Mechanical plant drivers and operatives (earth moving and civil engineering) | 69       | 22.15           |
| 673. Launderers, dry cleaners, pressers   | 40       | 21.74           |
| 830. Furnace operatives (metal)   | 16       | 21.74           |
| 811. Preparatory fibre processors   | 2        | 20.71           |
| 933. Refuse and salvage collectors  | 40       | 20.66           |
| 895. Mains and service pipe layers, pipe joiners                                  | 29       | 20.47           |
| 831. Metal drawers  | 5        | 20.41           |
| 843. Metal dressing operatives  | 9        | 19.98           |
| 802. Tobacco cutter foreman   | 8        | 19.89           |
| 932. Slings   | 3        | 19.59           |
| 544. Tyre and exhaust fitters   | 24       | 18.99           |
| 601. NCOs and other ranks, foreign and commonwealth armed forces                  | 3        | 18.94           |
| 813. Winders, reelers   | 5        | 18.46           |
| 597. Face trained coalmining workers, shotfirers and deputies                     | 38       | 18.38           |
| 859. Other assemblers/lineworkers poppy   | 13       | 18.04           |
| 911. Labourers in foundries   | 17       | 17.93           |
| 844. Shot blasters  | 7        | 16.14           |
| 884. Shunters and point operatives railways                                       | 4        | 15.79           |

Figure 5

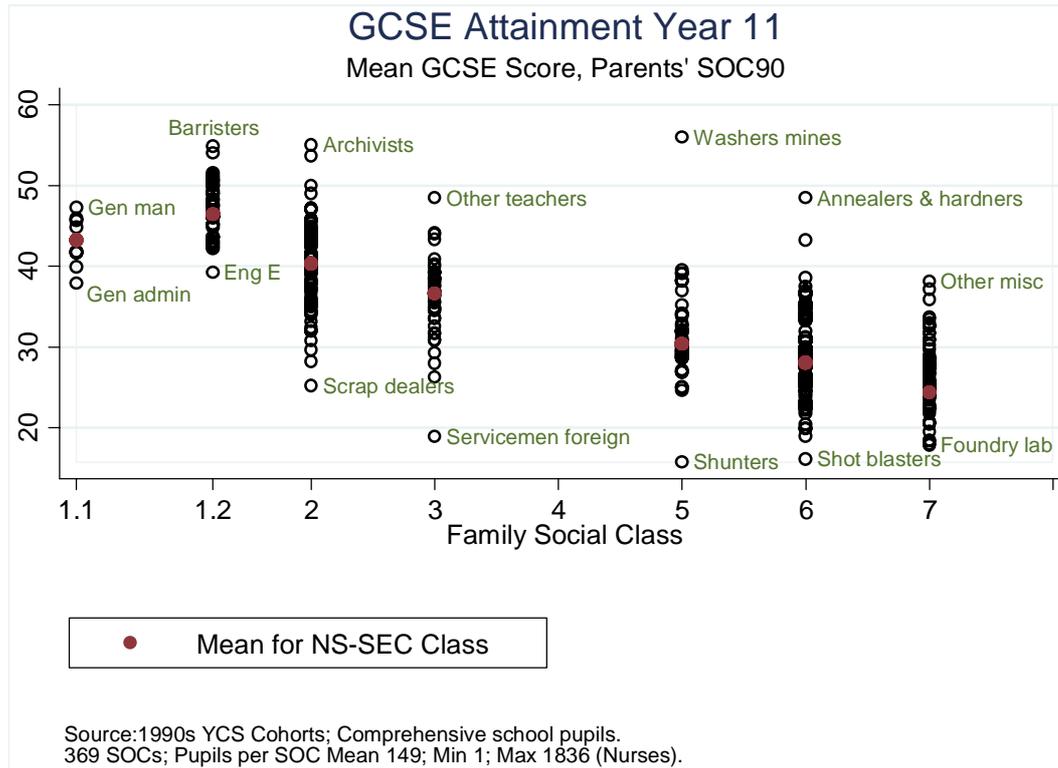


Figure 6

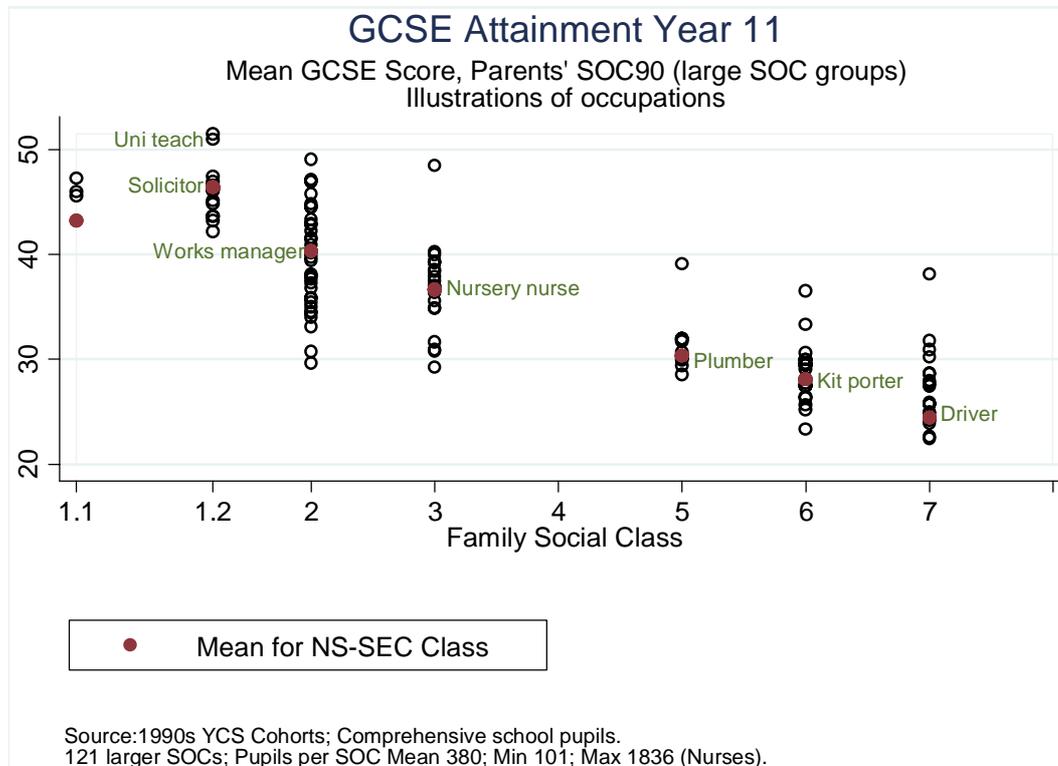


Figure 7

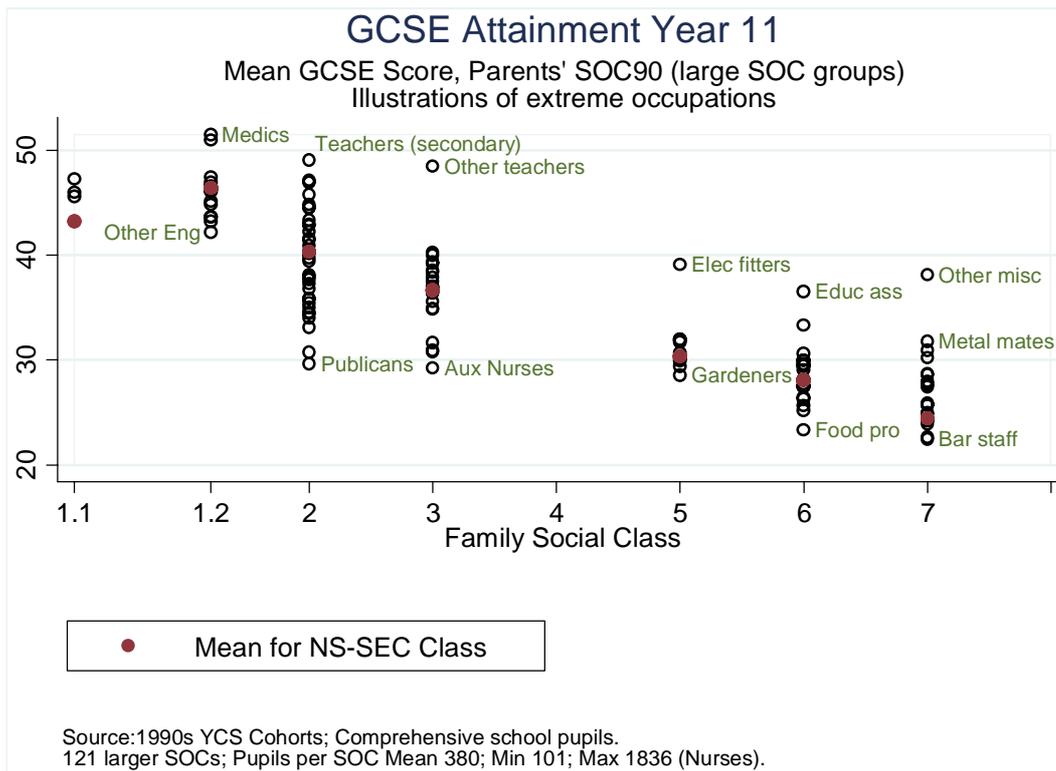


Table 7 Linear Regression Models Year 11 BCSE Score (all YCS 1990s Cohorts)

|                           | Complete Cases Analysis |      | Model of Multiple Imputed Datasets |      |      |
|---------------------------|-------------------------|------|------------------------------------|------|------|
|                           | Beta                    | s.e. | Beta                               | s.e. | FMI  |
| <b>YCS Cohorts</b>        |                         |      |                                    |      |      |
| 1990                      | 0.00                    |      | 0.00                               |      |      |
| 1993                      | 5.27                    | 0.20 | 4.96                               | 0.19 | 0.01 |
| 1995                      | 9.35                    | 0.21 | 9.05                               | 0.20 | 0.01 |
| 1997                      | 8.08                    | 0.21 | 8.02                               | 0.20 | 0.01 |
| 1999                      | 12.69                   | 0.22 | 12.82                              | 0.22 | 0.10 |
| <b>Gender</b>             |                         |      |                                    |      |      |
| Females                   | 0.00                    |      | 0.00                               |      |      |
| Males                     | -3.42                   | 0.13 | -3.34                              | 0.13 | 0.03 |
| <b>Ethnicity</b>          |                         |      |                                    |      |      |
| Whites                    | 0.00                    |      | 0.00                               |      |      |
| Black                     | -5.62                   | 0.57 | -7.31                              | 0.50 | 0.10 |
| Indian                    | 3.60                    | 0.44 | 3.08                               | 0.41 | 0.04 |
| Pakistani                 | -1.89                   | 0.58 | -3.61                              | 0.48 | 0.15 |
| Bangladeshi               | 0.42                    | 1.04 | -3.44                              | 0.75 | 0.21 |
| Other Asians              | 5.36                    | 0.68 | 4.65                               | 0.63 | 0.07 |
| Other Groups              | -0.36                   | 0.70 | -1.43                              | 0.64 | 0.06 |
| <b>NS-SEC (3 Classes)</b> |                         |      |                                    |      |      |
| Managerial & Professional | 0.00                    |      | 0.00                               |      |      |
| Intermediate Occupations  | -7.46                   | 0.15 | -7.67                              | 0.15 | 0.09 |
| Routine Occupations       | -13.85                  | 0.17 | -14.51                             | 0.17 | 0.10 |
| Constant                  | 39.70                   | 0.19 | 39.05                              | 0.18 | 0.06 |
| <i>n</i>                  | 55145                   |      | 64045                              |      |      |