

Index composition: questions as they appear in the 2012 questionnaire.

Analytical skills:

- cpeople: In your job, how important is dealing with people?
- cteach: How important is instructing, training or teaching people, individually or in groups?
- cpersuad: How important is persuading or influencing others?
- cplanoth: How important is planning the activities of others?
- csolutn: How important is thinking of solutions to problems? The problems could be with your own work, someone else's work or equipment.
- canalyse: How important is analysing complex problems in depth?
- ccalca: In your job, how important is adding, subtracting, multiplying or dividing numbers? (Note: using a calculator or computer if necessary)
- cpercent: How important are calculations using decimals, percentages or fractions? (Note: using a calculator or computer if necessary)
- cwritelg: How important is writing long documents with correct spelling and grammar (for example, long reports, manuals, articles or books)?
- cwritesh: How important is writing short documents (for example, short reports, letters or memos)?
- clong: How important is reading long documents such as long reports, manuals, articles or books?
- cshort: How important is reading short documents such as reports, letters or memos?

Routine: *main change: combined all indexes into only one*

- bme4: How much influence do you personally have on deciding the quality standards to which you work?
- brepeat: How often does your work involve carrying out short, repetitive tasks? (I recoded this variable so that larger values). I recoded the variable so that larger values imply **less** repetitiveness in the job.
- bvaryety: How much variety is there in your job?
- cplanme: In your job, how important is planning your own activities? (higher values imply less importance)

Manual: before I was using skphys (physical strength) but I realized that this a derived index that included cstrengh, cstam, ctools and Chand. I excluded skphys and put its components instead.

- cstreng: how important is physical strength?
- cstam: how important is physical stamina?
- chands: how important is skill or accuracy in using your hands or fingers (for example, to mend, repair, assemble, construct or adjust things)?
- ctools: how important is knowledge of how to use or operate tools, equipment or machinery?

1 Skill use regressions

References

Autor, D. H. and Dorn, D. (2013). The Growth of Low-Skill Service Jobs and the Polarization of the US Labor Market. *American Economic Review*, 103(5):1553–1597.

A Appendix

Table 1: Orthogonal factors

(a) Factor loadings

Variable	Factor1	Factor2	Factor3	Factor4	Factor5	Factor6
cstamina	0.03013	0.33648	-0.01303	0.08342	-0.05449	-0.205
cstrengt	0.02289	0.36756	-0.0073	0.02498	-0.05233	-0.18528
chands	0.01439	0.21548	0.02358	-0.10242	0.00983	0.23012
ctools	0.0161	0.16175	0.02001	-0.08773	0.04585	0.23253
brepeat	0.00949	0.03715	0.01111	0.032	0.21217	-0.0108
bvariety	0.01221	0.00034	0.00689	-0.00919	0.33277	-0.02458
cplanme	0.0027	-0.00773	-0.0115	-0.07376	0.23847	-0.00677
bme4	0.01961	-0.0202	-0.00095	-0.01123	0.18314	-0.0144
cpeople	0.00327	-0.00158	-0.01501	0.13225	-0.06691	-0.08071
cteach	-0.015	0.02014	-0.02171	0.31192	0.15771	-0.00196
cpersuad	-0.02343	-0.02662	-0.01432	0.30599	0.00031	-0.00369
cplanoth	-0.02627	0.02348	0.00309	0.29193	0.01734	-0.02905
canalyse	0.04314	-0.02117	-0.01128	0.04805	-0.00705	0.3771
csolutn	0.00154	0.01244	0.00512	0.06015	-0.03892	0.31808
ccalca	-0.06709	0.0221	0.46262	-0.01826	0.02825	-0.10675
cpercent	-0.0659	-0.01035	0.50056	-0.04971	0.02991	-0.02897
cwritelg	0.2348	-0.00821	-0.03221	-0.06615	-0.00482	-0.09563
cwritesh	0.28673	0.00504	-0.0279	-0.08661	-0.03124	-0.1327
clong	0.34257	0.03958	-0.06439	-0.14241	0.09751	-0.00731
cshort	0.25205	0.0309	-0.02385	-0.07978	0.10956	-0.06997

(b) Scree plot

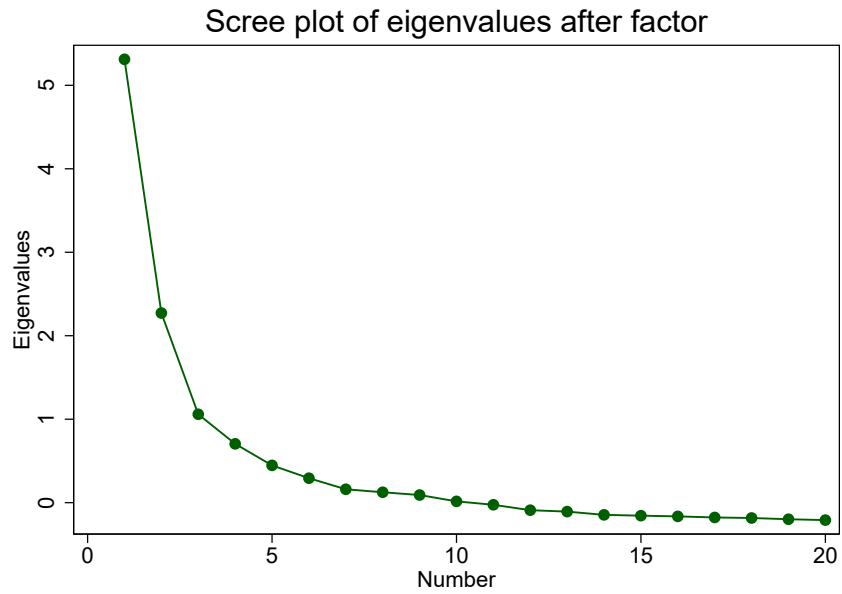
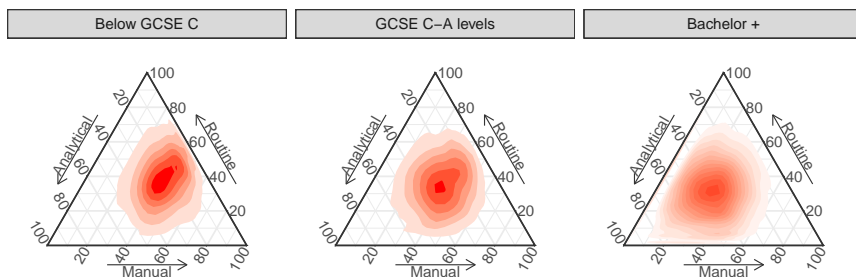


Table 2: Factor loadings

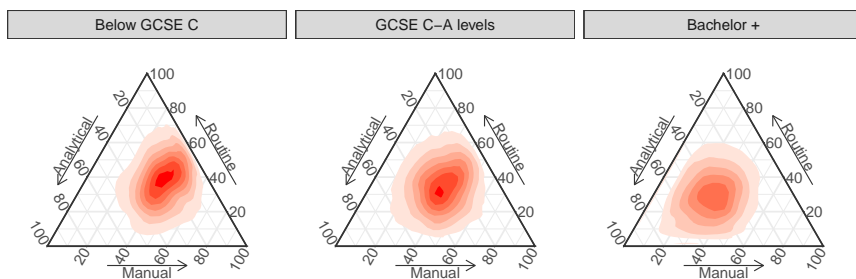
Variable	Loading
Analytical	
cpeople	0.394
cteach	0.526
cpersuad	0.623
cplanoth	0.553
canalyse	0.686
csoltn	0.575
ccalca	0.486
cpercent	0.539
cwritelg	0.727
cwritesh	0.757
clong	0.758
cshort	0.701
Manual	
cstamina	0.788
cstrengt	0.801
chands	0.710
ctools	0.626
Routine	
brepeat	0.366
bvariety	0.574
cplanme	0.497
bme4	0.361

Figure 1: Skill simplex

(a) Simple average



(b) Factor (restricted)



(c) Factor (orthogonal)

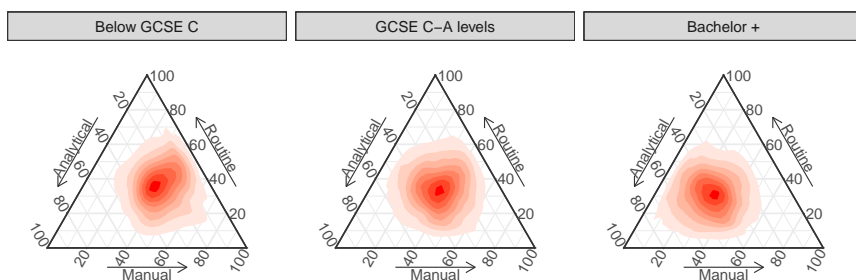
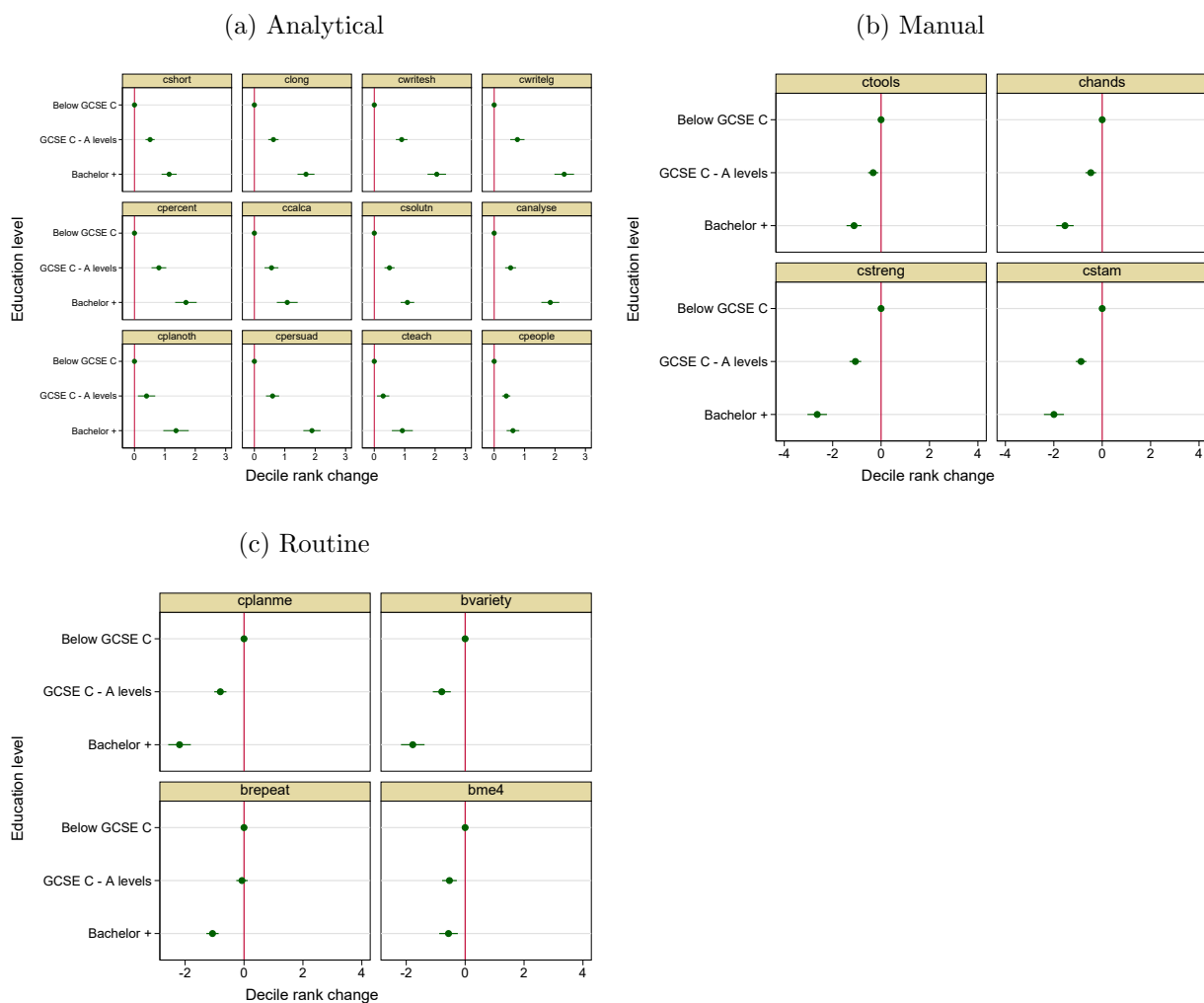


Figure 2: Reported skill use by education level, [Autor and Dorn \(2013\)](#) indexes



Note: routine regressions control for the level of the manual index.

Figure 3: Reported skill use by education level, [Autor and Dorn \(2013\)](#) indexes

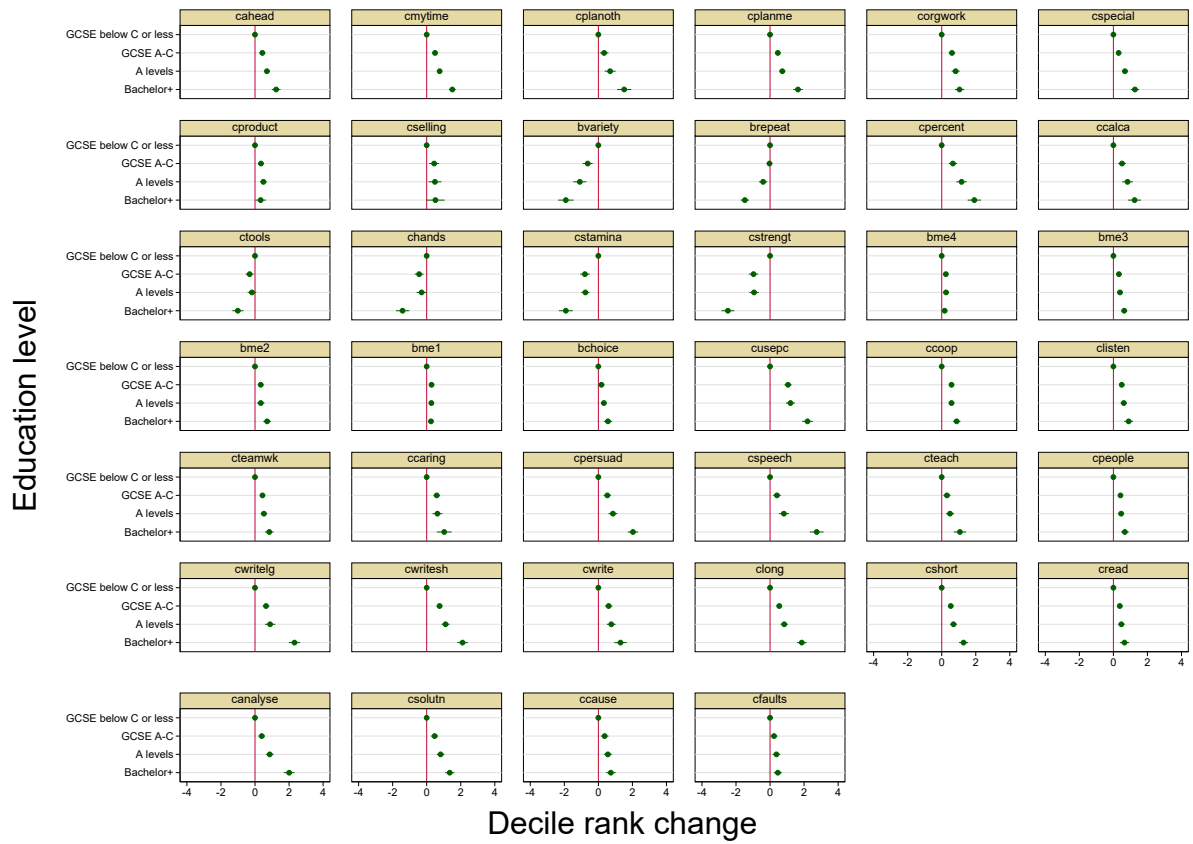


Figure 4: Reported skill use by job and education

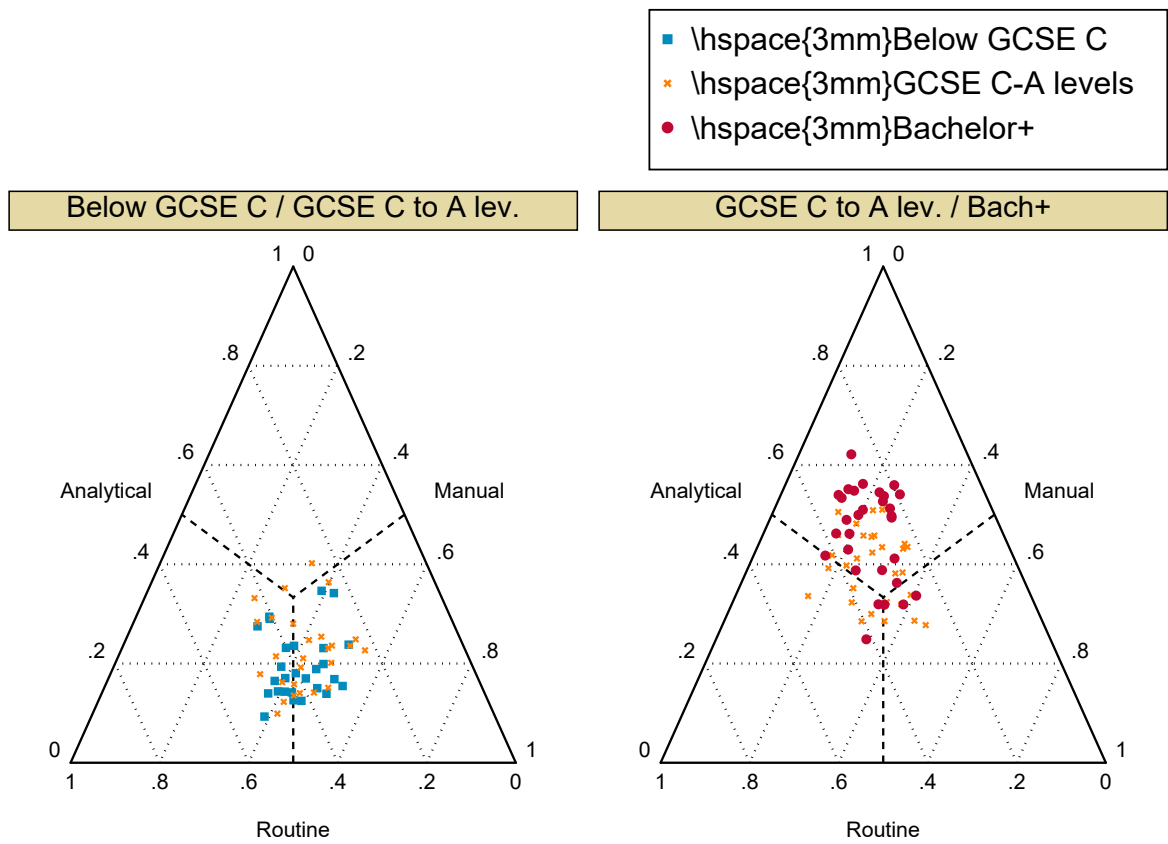


Table 3: Dependent variable: skill use percentile

	(1)	(2)	(3)
Base level: GCSE C-A levels	Analytical	Manual	Routine
<i>Simple average indexes</i>			
Bachelor+	7.48*** (0.97)	-7.25*** (1.15)	-3.76** (1.03)
Overall R^2	0.15	0.31	0.10
Within R^2	0.02	0.02	0.00
Observations	4,147	4,147	4,147
<i>Factor analysis: restricted</i>			
Bachelor+	7.70*** (0.96)	-7.26*** (1.19)	-6.08*** (0.90)
Overall R^2	0.14	0.31	0.12
Within R^2	0.02	0.02	0.01
Observations	4,147	4,147	4,147
<i>Factor analysis: orthogonal factors</i>			
Bachelor+	5.23*** (0.77)	-7.18*** (1.17)	-4.32*** (0.89)
Overall R^2	0.11	0.31	0.09
Within R^2	0.01	0.02	0.01
Observations	4,147	4,147	4,147

Note: errors clustered at the occupation level. The regression includes data from 30 occupations. I require at least 3 observations from each education level in **each year**. I pool data from all years. Regressions include occupation and year fixed-effects. Unweighted estimates. Table generated on 4 Mar 2020 at 15:11:14.

Table 4: Dependent variable: skill use percentile

Base level: Below GCSE C	(1) Analytical	(2) Manual	(3) Routine
<i>Simple average indexes</i>			
GCSE C-A levels	4.30*** (1.12)	-0.31 (0.76)	-3.10** (0.93)
Overall R^2	0.15	0.36	0.15
Within R^2	0.01	0.00	0.00
Observations	4,849	4,849	4,849
<i>Factor analysis: restricted</i>			
GCSE C-A levels	3.90** (1.14)	-0.81 (0.72)	-2.41* (1.01)
Overall R^2	0.16	0.37	0.16
Within R^2	0.01	0.00	0.00
Observations	4,849	4,849	4,849
<i>Factor analysis: orthogonal factors</i>			
GCSE C-A levels	4.12*** (1.04)	-0.62 (0.73)	-1.15 (1.16)
Overall R^2	0.16	0.35	0.15
Within R^2	0.01	0.00	0.00
Observations	4,849	4,849	4,849

Note: errors clustered at the occupation level. The regression includes data from 27 occupations. I require at least 3 observations from each education level in **each year**. I pool data from all years. Regressions include occupation and year fixed-effects. Unweighted estimates. Table generated on 4 Mar 2020 at 15:11:15.

Table 5: Dependent variable: skill use percentile

Base level: GCSE C-A levels	(1) Analytical	(2) Manual	(3) Routine
<i>Simple average indexes</i>			
Bachelor+	6.96*** (1.15)	-7.46*** (1.31)	-4.17** (1.35)
Overall R^2	0.16	0.34	0.11
Within R^2	0.02	0.02	0.01
Observations	24,616,237	24,616,237	24,616,237
<i>Factor analysis: restricted</i>			
Bachelor+	7.11*** (1.12)	-7.43*** (1.38)	-6.32*** (1.22)
Overall R^2	0.14	0.34	0.13
Within R^2	0.02	0.02	0.01
Observations	24,616,237	24,616,237	24,616,237
<i>Factor analysis: orthogonal factors</i>			
Bachelor+	4.61*** (0.94)	-7.59*** (1.35)	-5.30*** (1.12)
Overall R^2	0.11	0.34	0.11
Within R^2	0.01	0.03	0.01
Observations	24,616,237	24,616,237	24,616,237

Note: errors clustered at the occupation level. The regression includes data from 30 occupations. I require at least 3 observations from each education level in **each year**. I pool data from all years. Regressions include occupation and year fixed-effects. Weighted estimates using the frequency weights provided in the SES. Table generated on 4 Mar 2020 at 15:11:20.

Table 6: Dependent variable: skill use percentile

Base level: Below GCSE C	(1) Analytical	(2) Manual	(3) Routine
<i>Simple average indexes</i>			
GCSE C-A levels	2.84* (1.24)	-0.92 (1.12)	-3.90** (1.06)
Overall R^2	0.15	0.39	0.16
Within R^2	0.00	0.00	0.00
Observations	26,995,074	26,995,074	26,995,074
<i>Factor analysis: restricted</i>			
GCSE C-A levels	2.47 (1.25)	-1.21 (1.11)	-3.55** (1.03)
Overall R^2	0.16	0.40	0.18
Within R^2	0.00	0.00	0.00
Observations	26,995,074	26,995,074	26,995,074
<i>Factor analysis: orthogonal factors</i>			
GCSE C-A levels	2.78* (1.11)	-1.02 (1.11)	-3.06* (1.29)
Overall R^2	0.17	0.37	0.16
Within R^2	0.00	0.00	0.00
Observations	26,995,074	26,995,074	26,995,074

Note: errors clustered at the occupation level. The regression includes data from 27 occupations. I require at least 3 observations from each education level in **each year**. I pool data from all years. Regressions include occupation and year fixed-effects. Weighted estimates using the frequency weights provided in the SESs. Table generated on 4 Mar 2020 at 15:11:20.

Table 7: Jobs included in Below GCSE C- GCSE C to A levels regression

Occupation	Number of observations	
	Below GCSE C	GCSE C-A levels
1163 retail and wholesale managers	32	119
1221 Managers and proprietors in hospita	26	69
4131 Administrative occupations: records	46	179
4150 general office assistants or clerks	43	266
4211 Secretarial and related occupations	61	299
5111 Farmers, gardeners and ground women	46	68
5213 Metal forming, welding and related	18	49
5221 Metal Machining, Fitting And Instru	52	166
5231 Vehicle trades	28	91
5312 bricklayers, masons, roofers	112	266
5321 building trades	44	61
5432 chefs, cooks, bakers, flour confect	53	101
6111 nursing aux, amb staff, dental nurs	41	118
6114 houseprnts, residential wardens, ca	117	315
7111 sales and retail assistants	173	314
7112 retail cashiers/check-out operators	47	65
7122 Sales related occupations	24	58
8111 food, drink & tobac process operat	51	40
8211 heavy goods vehicle drivers	86	65
8212 van drivers	53	61
8214 taxi, cab drivers and chauffeurs	43	38
8222 fork-lift truck drivers	36	29
9121 labrers build & woodworking trades	32	38
9134 packers, bottlers, canners, fillers	42	34
9149 oth good hndlng & storage occup nec	105	74
9223 kitchen and catering assistants	88	74
9233 cleaners, domestics	180	113

Table 8: Jobs included in GCSE C to A levels-Bachelor+ regression

Occupation	Number of observations	
	Below GCSE C	A levels
1121 prod. works & maintenance managers	91	125
1122 managers in construction, mining an	46	55
1132 marketing and sales managers	117	184
1136 info & communication technol mngrs	48	114
1141 quality assurance and customer care	21	30
1151 Financial institution and office ma	115	131
1181 healthcare and social service manag	25	78
1231 Managers And Proprietors In Other S	48	47
1239 mngrs and prop. in other srvc nec	81	94
2132 software professionals	33	155
2315 prim & nurs eductn teaching profs	23	283
2423 mngmnt cons, actuar, econs & statn	22	71
3111 laboratory, engineering, and qualit	64	65
3131 it technitians	57	63
3212 healthcare techinitians, except nur	34	60
3231 youth and community workers	32	40
3232 housing and welfare officers	63	75
3312 police, fire, and prison officers	94	53
3421 graphic designers	21	36
3431 Media Associate Professionals	38	66
3511 Transport Associate Professionals	16	22
3531 Estimators, valuers, assessors, bro	39	36
3534 fin., invest, and taxation analysts	26	87
3541 sales representatives, marketing pr	104	104
3561 public service associates, personne	55	59
3563 vocatn & indust trainrs & instrctrs	44	62
4111 civil service officers and assistan	86	62
4113 local gov clerical offs & assists /	77	59
5241 Electrical trades	174	69
6211 Leisure And Travel Service Occupati	49	19

Table 9: Jobs included in Below GCSE C- GCSE C to A levels regression

Occupation	Employment share	
	Below GCSE C	GCSE C-A levels
1163 retail and wholesale managers	0.22	0.58
1221 Managers and proprietors in hospita	0.27	0.51
4131 Administrative occupations: records	0.22	0.58
4150 general office assistants or clerks	0.23	0.60
4211 Secretarial and related occupations	0.23	0.64
5111 Farmers, gardeners and ground women	0.40	0.47
5213 Metal forming, welding and related	0.26	0.70
5221 Metal Machining, Fitting And Instru	0.19	0.71
5231 Vehicle trades	0.21	0.75
5312 bricklayers, masons, roofers	0.21	0.74
5321 building trades	0.32	0.65
5432 chefs, cooks, bakers, flour confect	0.37	0.57
6111 nursing aux, amb staff, dental nurs	0.29	0.52
6114 houseprnts, residential wardens, ca	0.41	0.49
7111 sales and retail assistants	0.40	0.52
7112 retail cashiers/check-out operators	0.47	0.47
7122 Sales related occupations	0.33	0.56
8111 food, drink & tobac process operat	0.60	0.37
8211 heavy goods vehicle drivers	0.59	0.39
8212 van drivers	0.48	0.47
8214 taxi, cab drivers and chauffeurs	0.52	0.42
8222 fork-lift truck drivers	0.62	0.35
9121 labrers build & woodworking trades	0.60	0.37
9134 packers, bottlers, canners, fillers	0.65	0.34
9149 oth good hndlng & storage occup nec	0.52	0.45
9223 kitchen and catering assistants	0.59	0.37
9233 cleaners, domestics	0.73	0.25

Table 10: Jobs included in GCSE C to A levels-Bachelor+ regression

Occupation	Employment shares	
	GCSE C-A levels	Bachelor+
1121 prod. works & maintenance managers	0.46	0.42
1122 managers in construction, mining an	0.50	0.35
1132 marketing and sales managers	0.42	0.47
1136 info & communication technol mngrs	0.32	0.60
1141 quality assurance and customer care	0.51	0.41
1151 Financial institution and office ma	0.54	0.33
1181 healthcare and social service manag	0.27	0.62
1231 Managers And Proprietors In Other S	0.56	0.30
1239 mngrs and prop. in other srvc nec	0.45	0.35
2132 software professionals	0.28	0.64
2315 prim & nurs eductn teaching profs	0.02	0.96
2423 mngmnt cons, actuar, econs & statn	0.18	0.76
3111 laboratory, engineering, and qualit	0.50	0.39
3131 it technitians	0.48	0.41
3212 healthcare techinitians, except nur	0.31	0.59
3231 youth and community workers	0.44	0.40
3232 housing and welfare officers	0.36	0.54
3312 police, fire, and prison officers	0.70	0.19
3421 graphic designers	0.38	0.56
3431 Media Associate Professionals	0.31	0.61
3511 Transport Associate Professionals	0.50	0.29
3531 Estimators, valuers, assessors, bro	0.54	0.38
3534 fin., invest, and taxation analysts	0.50	0.41
3541 sales representatives, marketing pr	0.49	0.39
3561 public service associates, personne	0.46	0.47
3563 vocatn & indust trainrs & instretrs	0.49	0.43
4111 civil service officers and assistan	0.65	0.25
4113 local gov clerical offs & assists /	0.60	0.25
5241 Electrical trades	0.72	0.17
6211 Leisure And Travel Service Occupati	0.60	0.22