

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 cstreng, 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?

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
csoltn	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

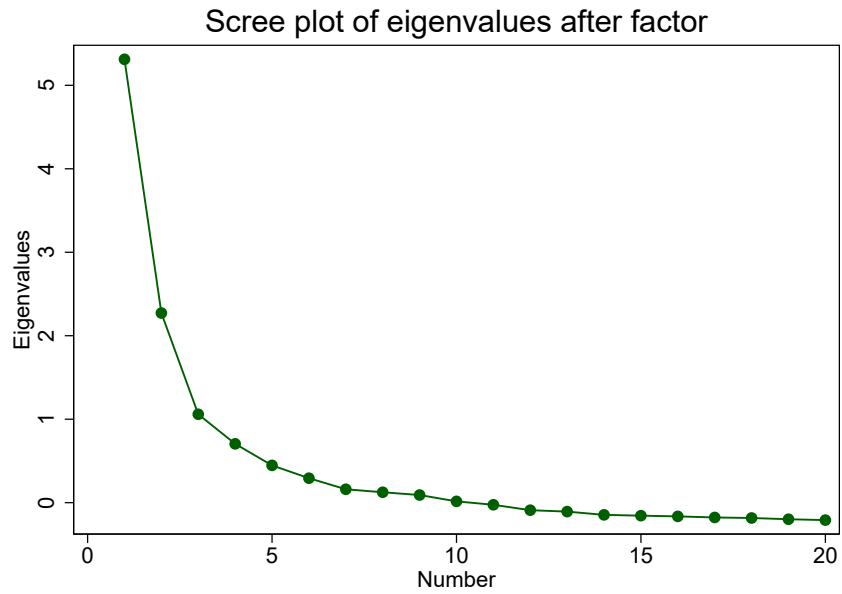
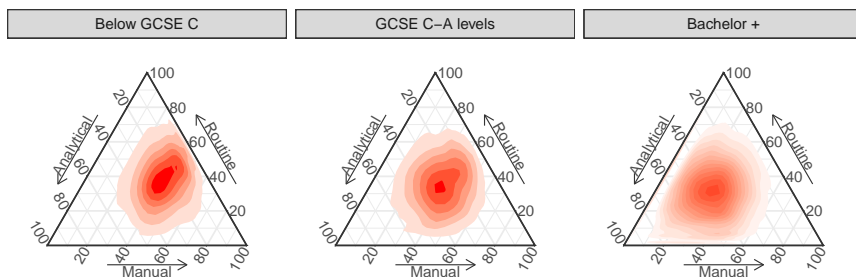


Table 2: Factor loadings

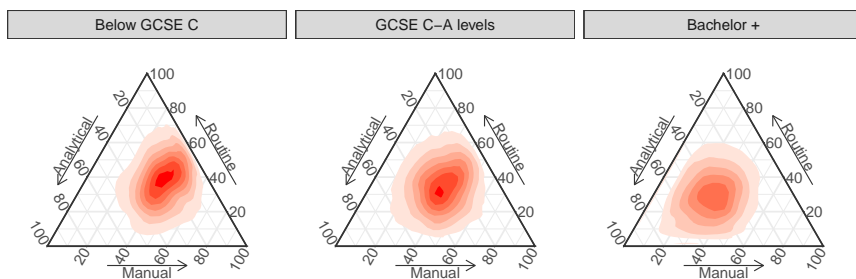
Variable	Loading
Analytical	
cpeople	0.394
cteach	0.526
cpersuad	0.623
cplanoth	0.553
canalyse	0.686
csoltn	0.575
ccalca	0.486
cpercent	0.539
cwritelg	0.727
cwritesh	0.757
clong	0.758
cshort	0.701
Manual	
cstamina	0.788
cstrengt	0.801
chands	0.710
ctools	0.626
Routine	
brepeat	0.366
bvariety	0.574
cplanme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

Figure 1: Skill simplex

(a) Simple average



(b) Factor (restricted)



(c) Factor (orthogonal)

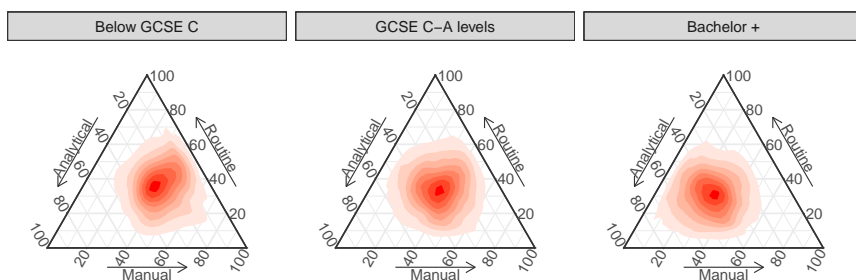
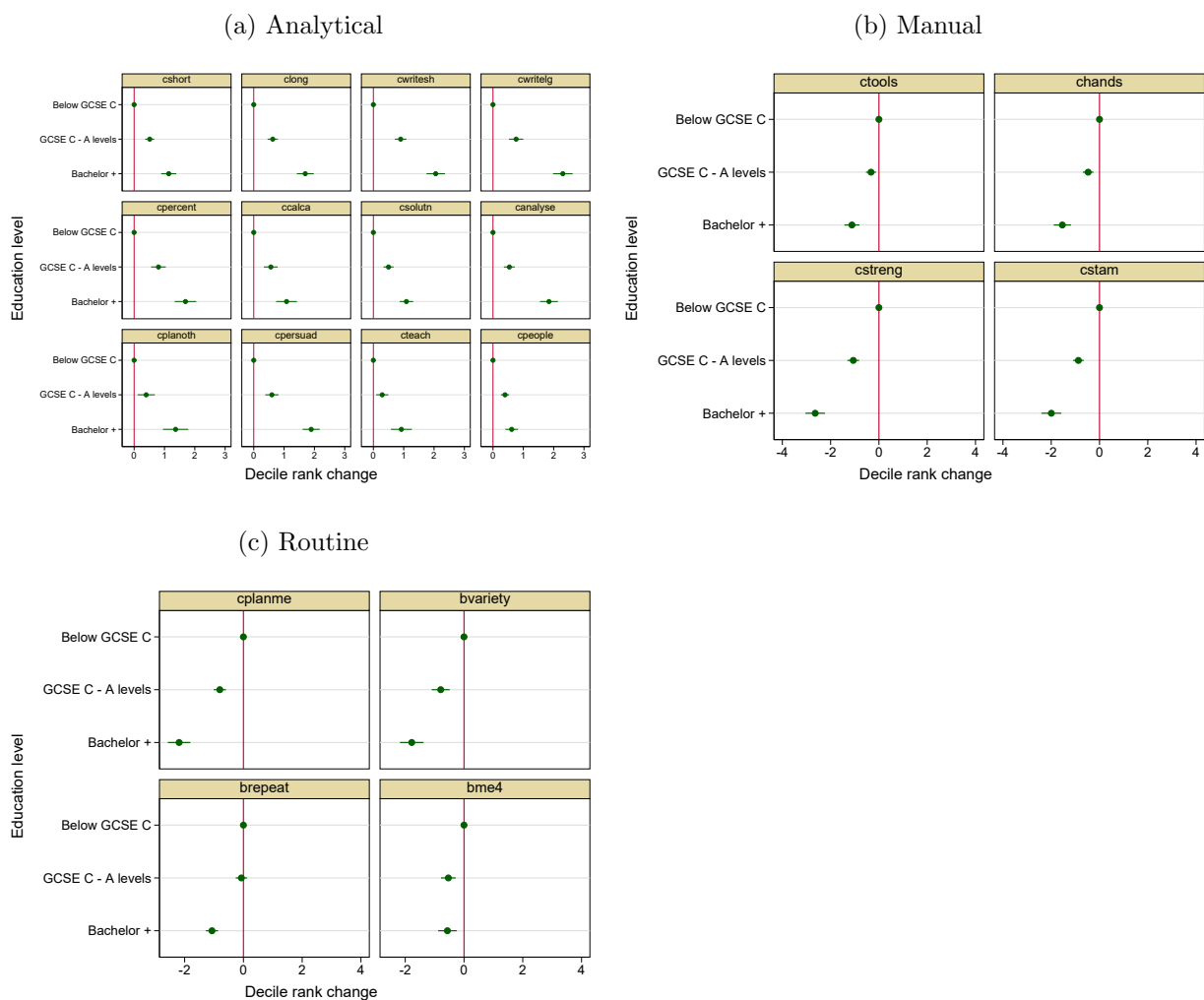


Figure 2: Reported skill use by education level, [Autor and Dorn \(2013\)](#) indexes



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

Table 3: Analytical

bsoc00Agg	Mean observations
1112 directors & chief execs of maj orgs	18.0
1114 sen. officials spec interest orgs	18.0
1131 financial managers & chartered secs	126.0
1133 purchasing managers	26.0
1172 protective service officers	26.0
1181 healthcare and social service managers	99.0
2311 higher educ teaching prfsnals	73.0
2312 further educ teaching prfsnals	83.0
2314 secondary eductn teaching prfsnals	257.0
2315 prim & nurs eductn teaching profs	326.0
2316 spec needs educ teaching profs	41.0
2321 scientific researchers	21.0
2411 solic & lawyers, judges & coroners	77.0
2423 mngmnt cons, actuar, econs & statn	88.0
2431 architects	22.0
Total	86.7

Table 4: Analytical (Orthogonal)

bsoc00Agg	Mean observations
1112 directors & chief execs of maj orgs	18.0
1133 purchasing managers	26.0
2111 chemists	10.0
2112 bio scientists and biochemists	43.0
2121 civil, mechanical, electrical and electronics engineers	62.0
2213 pharmacists & pharmacologists	20.0
2311 higher educ teaching prfsnals	73.0
2321 scientific researchers	21.0
2329 researchers n.e.c.	43.0
2421 chartered and certified accountants	39.0
2422 management accountants	9.0
2433 quantity surveyors	13.0
2434 chartrd surveyors (not qntity surv)	32.0
3534 fin., invest, and taxation analysts and advisers	116.0
8134 weighers, graders, sorters	4.0
Total	35.3

Table 5: Routine

bsoc00Agg	Mean observations
7112 retail cashiers/check-out operators	110.0
8111 food, drink & tobac process operat	93.0
8131 assemblers (electrical products)	30.0
8132 assemblers (veh and metal goods)	24.0
8134 weighers, graders, sorters	4.0
8139 assemblers and routine oprtves nec.	50.0
8213 bus and coach drivers	55.0
9134 packers, bottlers, canners, fillers	81.0
9225 bar staff	69.0
9233 cleaners, domestics	294.0
9234 launderers, dry cleaners, pressers	15.0
9235 refuse and salvage occupations	15.0
9244 school mid-day assistants	50.0
9251 shelf fillers	48.0
9259 elementary sales occupations nec.	19.0
Total	63.8

Table 6: Routine (Orthogonal)

bsoc00Agg	Mean observations
4123 counter clerks	111.0
7112 retail cashiers/check-out operators	110.0
8111 food, drink & tobac process operat	93.0
8113 textile process operatives	13.0
8114 chem and related process operatives	43.0
8119 process operatives n.e.c.	8.0
8131 assemblers (electrical products)	30.0
8132 assemblers (veh and metal goods)	24.0
8134 weighers, graders, sorters	4.0
8139 assemblers and routine oprtves nec.	50.0
8221 crane drivers	7.0
9134 packers, bottlers, canners, fillers	81.0
9225 bar staff	69.0
9235 refuse and salvage occupations	15.0
9259 elementary sales occupations nec.	19.0
Total	45.1

Table 7: Manual

bsoc00Agg	Mean observations
1211 farm managers	9.0
5111 Farmers, gardeners and ground women	123.0
5119 agricult and fishing trades n.e.c.	15.0
5213 Metal forming, welding and related trades	74.0
5231 Vehicle trades	127.0
5312 bricklayers, masons, roofers	411.0
5321 building trades	111.0
5412 upholsterers	9.0
5433 fishmongers, poultry dressers	5.0
8112 glass and ceramics process oprties	7.0
8119 process operatives n.e.c.	8.0
8141 scaffolders, staggers, riggers	11.0
8221 crane drivers	7.0
9121 labrers build & woodworking trades	69.0
9129 lab oth const trades n.e.c.	13.0
Total	66.6

Table 8: Manual (Orthogonal)

bsoc00Agg	Mean observations
1211 farm managers	9.0
5111 Farmers, gardeners and ground women	123.0
5119 agricult and fishing trades n.e.c.	15.0
5213 Metal forming, welding and related trades	74.0
5231 Vehicle trades	127.0
5312 bricklayers, masons, roofers	411.0
5321 building trades	111.0
5431 butchers, meat cutters	19.0
5433 fishmongers, poultry dressers	5.0
8112 glass and ceramics process oprties	7.0
8119 process operatives n.e.c.	8.0
8141 scaffolders, staggers, riggers	11.0
9121 labrers build & woodworking trades	69.0
9129 lab oth const trades n.e.c.	13.0
9231 window cleaners	20.0
Total	68.1

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

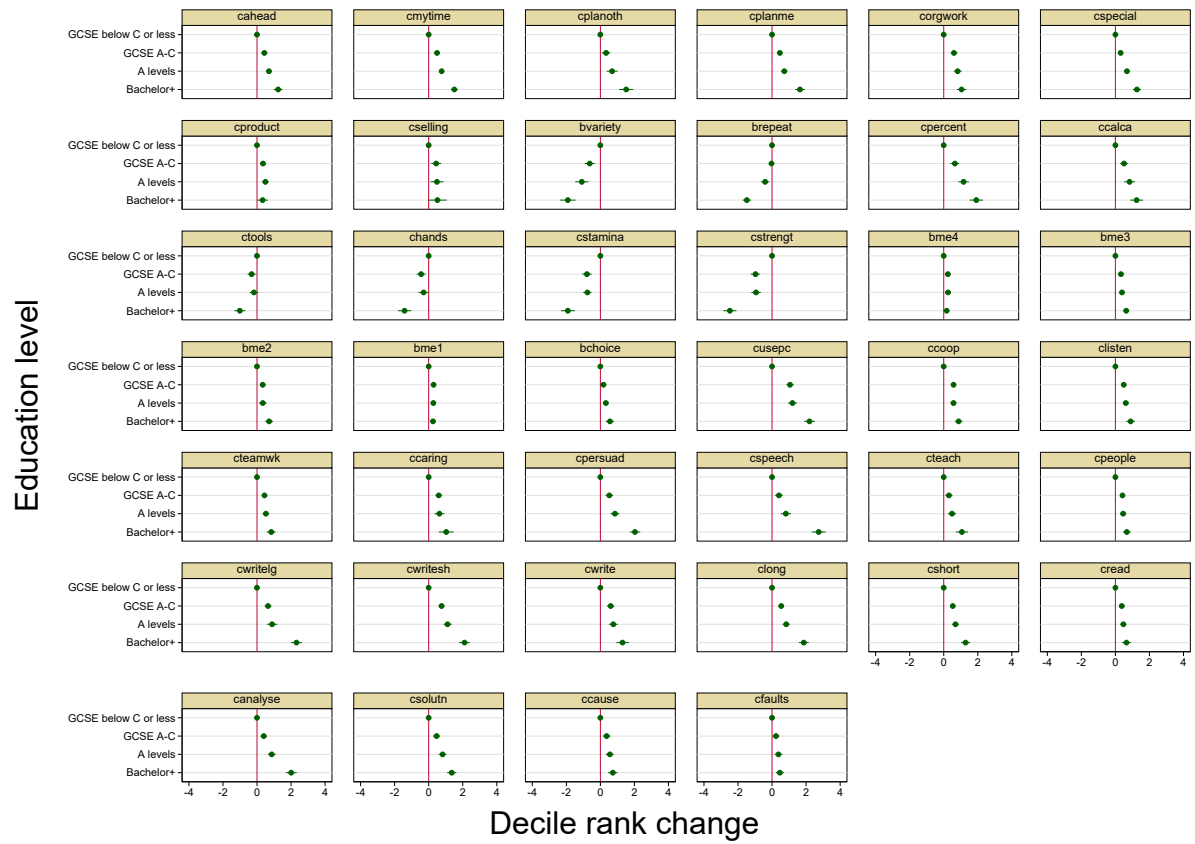


Table 9: Top occupations: influence over quality standards (reverse)

bsoc00Agg	Mean observations
4111 civil service officers and assistants	141.0
4142 communication operators	22.0
8116 plastics process operatives	19.0
8119 process operatives n.e.c.	8.0
8132 assemblers (veh and metal goods)	24.0
8134 weighers, graders, sorters	4.0
8139 assemblers and routine oprtves nec.	50.0
8213 bus and coach drivers	55.0
8221 crane drivers	7.0
9134 packers, bottlers, canners, fillers	81.0
9139 labrs process & plant opertns nec.	33.0
9211 post wrkr, mail sort, msngr, courir	82.0
9234 launderers, dry cleaners, pressers	15.0
9235 refuse and salvage occupations	15.0
9241 security guards and rel occupations	94.0
Total	43.3

Table 10: Bottom occupations: influence over quality standards (reverse)

bsoc00Agg	Mean observations
1163 retail and wholesale managers	178.0
1221 Managers and proprietors in hospitality and leisure services	150.0
1234 shopkprs, wholesale & retail dealrs	65.0
2215 dental practitioners	15.0
2431 architects	22.0
2444 clergy	28.0
3421 graphic designers	55.0
3422 product, clothing & related dsgners	26.0
3442 Sports And Fitness Occupations	53.0
5111 Farmers, gardeners and ground women	123.0
5119 agricult and fishing trades n.e.c.	15.0
6221 Hairdressers And Related Occupations	106.0
8141 scaffolders, staggers, riggers	11.0
9231 window cleaners	20.0
9232 road sweepers	10.0
Total	58.5

Table 11: Top occupations: knowledge of products

bsoc00Agg	Mean observations
2111 chemists	10.0
2131 it strategy and planning prfsnals	79.0
2213 pharmacists & pharmacologists	20.0
2215 dental practitioners	15.0
2216 veterinarians	10.0
3422 product, clothing & related dsgners	26.0
3541 sales representatives, marketing profs, estate agents, actioneers	231.0
5231 Vehicle trades	127.0
5433 fishmongers, poultry dressers	5.0
6221 Hairdressers And Related Occupations	106.0
7113 telephone salespersons	39.0
7122 Sales related occupations	99.0
7211 Customer sevice occupations	192.0
8119 process operatives n.e.c.	8.0
9226 leisure and theme park attendants	10.0
Total	65.1

Table 12: Bottom occupations: knowledge of products

bsoc00Agg	Mean observations
2315 prim & nurs eductn teaching profs	326.0
2329 researchers n.e.c.	43.0
2441 public service administrative profs	14.0
2444 clergy	28.0
3551 conservat & environ protection offs	14.0
4142 communication operators	22.0
6121 nursery nurses	110.0
6122 childminders, playgroup leaders and educational assistants	349.0
6219 leisure & travel serv occuptns nec.	5.0
8212 van drivers	118.0
8214 taxi, cab drivers and chauffeurs	92.0
9211 post wrkr, mail sort, msngr, courir	82.0
9233 cleaners, domestics	294.0
9235 refuse and salvage occupations	15.0
9244 school mid-day assistants	50.0
Total	104.1

Table 13: Top occupations: selling a product or service

bsoc00Agg	Mean observations
1132 marketing and sales managers	320.0
1163 retail and wholesale managers	178.0
1221 Managers and proprietors in hospitality and leisure services	150.0
1234 shopkprs, wholesale & retail dealrs	65.0
2431 architects	22.0
3422 product, clothing & related dsgners	26.0
5433 fishmongers, poultry dressers	5.0
7111 sales and retail assistants	525.0
7112 retail cashiers/check-out operators	110.0
7113 telephone salespersons	39.0
7122 Sales related occupations	99.0
8135 tyre, exhaust and windscrn fitters	5.0
224 waiters, waitresses	35.0
9225 bar staff	69.0
9226 leisure and theme park attendants	10.0
Total	110.5

Table 14: Bottom occupations: selling a product or service

bsoc00Agg	Mean observations
2321 scientific researchers	21.0
2441 public service administrative profs	14.0
2443 probation officers	5.0
2451 librarians	16.0
4142 communication operators	22.0
6114 houseprnts, residential wardens, care assistants and home carers	500.0
6122 childminders, playgroup leaders and educational assistants	349.0
8117 mtl mkng & treating procss operative	12.0
8142 Road and ail construction operatives	28.0
8216 rail transport operatives	9.0
8229 mobile machine drivers & operatives	20.0
9121 labrers build & woodworking trades	69.0
9139 labrs process & plant opertns nec.	33.0
9233 cleaners, domestics	294.0
9244 school mid-day assistants	50.0
Total	96.1

Table 15: Skill indexes description

variableName	description
cfaults	importance of: spotting problems or faults
ccause	importance of: working out cause of problems/ faults
csolutn	importance of: thinking of solutions to problems
canalyse	importance of: analysing complex problems in depth
cread	importance of: reading written information (eg. forms, notices, signs)
cshort	importance of: reading short documents
clong	importance of: reading long documents
cwrite	importance of: writing materials such as forms, notices or signs
cwritesh	importance of: writing short documents
cwritelg	importance of: writing long documents
cpeople	importance of: dealing with people
cteach	importance of: teaching people (individuals or groups)
cspeech	importance of: making speeches/ presentations
cpersuad	importance of: persuading or influencing others
ccaring	importance of: counselling, advising or caring for customers or clients
cteamwk	importance of: working with a team
clisten	importance of: listening carefully to colleagues
ccoop	importance of: cooperating with colleagues
cusepc	importance of: using a computer/ pc/ other computerised equipment
bchoice	how much choice have over way in which do job
bme1	influence personally have on: how hard work
bme2	influence personally have on: what tasks to do
bme3	influence personally have on: how to do the task
bme4	influence personally have on: quality standards work to
cstrengt	importance of: physical strength
cstamina	importance of: physical stamina
chands	importance of: skill or accuracy in using hands/fingers
ctools	importance of: knowledge of use or operation of tools
ccalca	importance of: basic arithmetics
cpercent	Importance of: using fractions
brepeat	how often work involves short repetitive tasks
bvariety	how much variety in job
cselling	importance of: selling a product or service
cproduct	importance of: knowledge of particular products or services
cspecial	importance of: specialist knowledge or understanding
corgwork	importance of: knowledge of how organisation works
cplanme	importance of: planning own activities
cplanoth	importance of: planning the activities of others
cmytime	importance of: organising own time
cahead	importance of: thinking ahead