



What is a good job?



Analysis of the British 2012 Skills and Employment Survey – Technical Report

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WHAT IS A GOOD JOB?

Technical Report

Introduction

This technical report explains the rationale, methodological and statistical procedures and detailed results underpinning the accompanying briefing on ‘What is a Good Job?’.

The aim of the research was to determine whether it is possible to identify a small number of categories or clusters of jobs that would summarise relationships between work and employment practices that make up ‘good’ (or ‘bad’) jobs for wellbeing. Put differently, we were interested in whether work and employment factors that prior research indicates are related to wellbeing tend to cluster together or co-occur in employment. We refer to job characteristics as those things related to how work is done. For good quality jobs, these work factors typically encompass factors such as: some worker discretion over what tasks to perform and how, participation in decision making, reasonable work demands, reasonable working hours, clarity of role, use of skills, variety in tasks, support and social contact at work (see e.g., Cousins et al, 2004; Warr, 1987). Employment factors refer to supporting employment practices related to job security and contractual status, access to training, performance management and pay, which research indicates is also important for wellbeing, and may augment the effects of well-designed work on wellbeing (Daniels et al, *in press*).

Although notions of ‘good’ and ‘bad’ jobs have intuitive appeal, the range of features of good work and supporting employment practices can make notions of job quality appear multidimensional and complex. Such complexity can therefore undermine the usefulness of the notion of a ‘good job’ as key decision-makers have to identify a range of job-related factors to change. By using statistical techniques in this research, our hope is to provide a simple classification as a handy heuristic for people to understand what a good or bad quality job looks like. We know from previous research that it is possible classify jobs in this way (Carayon, 1994; Holman, 2013) and that jobs that tend to score highly on one aspect of job quality also score more highly on other aspects of job quality (van Veldhoven et al, 2005). The unique addition of the current research is to attempt a classification that is specific to the UK context and draws on a rich and extensive data set covering a range of job and employment factors, namely the British Skills and Employment Survey from 2012.

In the research, we do not aim to conduct prospective analyses or make causal claims from the analyses. There already exist systematic reviews and meta-analyses demonstrating that the features of high quality jobs are prospectively associated with indicators of better wellbeing, mental health and physical health (reviewed in Daniels et al, *in press*). As such, our analysis is focused on describing what features of high quality jobs go together. We were interested in identifying categories of work and employment practices that go to make up good and bad jobs for wellbeing for three reasons:

First, in our public consultation activities (Daniels et al, 2016), we asked a range of stakeholders for their views on important factors that would improve the wellbeing of UK workers. Across the range of people consulted (e.g., general public, business leaders, trades unionists, occupational health and human resource management professionals), job quality emerged as one of the most salient factors for improving the wellbeing of workers. The stakeholders we consulted indicated that job quality consisted of the features of well-designed jobs listed above, but also included job security and pay (listed under employment practices). Stakeholders also indicated access to work-related learning was also conducive to wellbeing.

Second, there is growing recognition that high performance work systems contribute to productivity (Combs et al., 2012). High performance work systems are characterised by jobs characterised by skill use, autonomy, team working and information sharing, and with employment practices focused on factors such as training, performance management, contingent pay and job security. Such high performance work systems are meant to function as coherent bundles of practices, so that the features of high performance work systems co-occur (Wood, 1999). Recent evidence indicates that the extensive adoption of high performance work systems may be beneficial for wellbeing, but that adoption of some rather than the full range of practices could actually harm wellbeing (Ogbonnaya et al, 2017).

Third, in a recent evidence review for the What Works for Wellbeing Centre (Daniels et al, in press), we found that the redesign of jobs seemed to have more benefits for wellbeing if accompanied by enhanced training or the complete redesign of human resource management systems to improve factors such as worker training, management training and performance management systems.

As noted, given prior research, we expect to be able to identify a small number of categories that describe different types of ‘good’ and ‘bad’ jobs, and we expect ‘good’ jobs to be associated with better wellbeing and ‘bad’ jobs with worse wellbeing. There might also be inequalities in the distribution of high quality jobs. Such inequalities, if they exist, could have implications for employment and industrial policies that seek to improve job quality and/or worker wellbeing. The data we use are not prospective and have other limitations, limiting any conclusions we could draw about the causes on inequalities in the distribution of high quality jobs. Notwithstanding, any evidence we do find could justify further and more detailed investigation.

In summary, the questions we sought to examine in this research were:

- a) *Classifying jobs*: Can a range of job and employment factors be distilled into a small number of categories that represent the occurrence of different work and employment factors?
- b) *Differences in wellbeing*: If so, are there differences in how workers report their wellbeing and attitudes towards their work between these categories?
- c) *Job inequalities*: And, are the differences between these categories in relation to the type of people doing these jobs, for example by region, age, gender, sector and occupational type?

Methods

Sample

We used data from the British 2012 Skills and Employment Survey (2012 SES), the fourth in a series of surveys first conducted in 1997. The 2012 SES covers a wide range of issues including organisation of work, job characteristics, skill use, workplace attitudes and wellbeing. The 2012 SES sample was drawn by random probability sampling to ensure important characteristics of the study population were represented in the data. Participants were individuals aged between 20 and 65 years in paid employment (at least 1 hour per week) during the period of data collection. Data were collected by computer-assisted personal interviewing (CAPI), administered by interviewers and computer-assisted self-interviewing (CASI), completed directly by participants. A total of 14,866 household addresses across Britain were screened to identify eligible participants. Only one eligible participant per address was randomly selected. The final sample size is 3200, representing 49% of those contacted and eligible to participate.

With over 3000 participants, the SES has good statistical power to detect differences between people and covers a range of jobs allowing meaningful categorisation of jobs. However, as a proportion of the working population, 3000 participants could not cover sufficient numbers of jobs in all parts of Great Britain to provide representative data. In relation to differences between jobs in wellbeing, if differences are consistent with prior research then we can be confident that the results are robust. Because we are unaware of any analysis that seeks to classify jobs and explore demographic differences amongst those performing the jobs, then findings should be regarded as more tentative and only indicative of areas that may require further, detailed investigation.

Measures

We selected survey items for job characteristics, employment practices and employee wellbeing following the precedents in previous research (e.g., Green et al, 2016). We performed Exploratory Factor Analysis (EFA, principle axis factoring with promax rotation) to examine the underlying factorial structure of selected survey items. The EFA revealed ten distinct job characteristics and employment practices (job autonomy, decision latitude, job design, job demands, job security, performance appraisal, information sharing, contingent pay, training, and team working) and five measures of employee wellbeing (work-life balance, positive affect, negative affect – as indicator of poor well-being, plus two indicators of positive attitudes towards work - job satisfaction and organizational commitment). Table 1 shows the details of all job characteristics, employment practices and employee wellbeing dimensions and includes survey item means, standard deviations and estimates of the internal consistency of scales derived following the EFA (Cronbach's alpha).

As a further check on whether the selected survey items were reliable indicators of their respective job characteristics, employment practices and wellbeing dimensions, we performed Confirmatory Factor Analysis (CFA). The various indicators of model fit reached conventional levels of acceptability, demonstrating that the selected survey items formed reliable scales: Chi-square (χ^2) = 3831.32; degrees of freedom (df) = 843; p-value < 0.001; Root Mean Square Error of Approximation (RMSEA) = 0.03; Comparative fit index (CFI) = 0.95; Tucker-Lewis Index (TLI) = 0.94; Standardized Root Mean Square Residual (SRMR) = 0.04. All free factor loadings were above 0.50 and significant in the hypothesised direction ($p < 0.001$) (see Table 1).

We selected the following demographic variables for the analyses – regions in UK, gender of respondent, age of participant, economic sector and occupational type (see details in Table 1).

Table 1. Variables, observed items, item means and Standard Deviations (SD), Confirmatory Factor Analysis (CFA) loadings and Cronbach's alpha (α)

Variables	Items	Means	SD	CFA Factor loadings	α
<i>Job and employment practices</i>					
Job autonomy	Influence you personally have on how hard you work	3.44	0.70	0.58	0.79
	Influence you personally have on deciding what tasks you are to do	2.97	0.95	0.77	
	Influence you personally have on deciding how you are to do the task	3.26	0.83	0.80	
	Influence you personally have on deciding the quality standards to which you work	3.37	0.89	0.62	
Decision latitude	Job allows me to take part in making decisions that affect my work	2.98	0.96	0.84	
Job design	Have enough opportunity to use my knowledge and skills	3.28	0.76	0.51	0.68
	Job requires that I keep learning new things	3.13	0.77	0.64	
	Job requires that I help my colleagues to learn new things	3.11	0.82	0.58	
	There is much variety in your job	3.81	1.13	0.61	
Job demands	Work involves working at very high speed	4.02	1.78	0.55	0.65
	Work involves working to tight deadlines	4.68	1.93	0.55	
	Work under a great deal of tension	2.73	0.85	0.70	
Job security	Any chance of losing job and becoming unemployed in next 12 months	0.76	0.43	0.84	
Performance appraisal	Have formal appraisal system	1.73	0.44	0.91	0.77

	Have been formally appraised at work in last 12 months	1.57	0.50	0.76	
	Appraisals affect amount of training receive	1.39	0.49	0.54	
Information sharing	Management arrange meetings to inform employees what is happening	1.77	0.42	0.83	0.80
	Management arrange meetings in which employees can express views	1.71	0.45	0.80	
Contingent pay	Receive any incentive/bonus/commission linked to your own performance	1.25	0.43	0.67	0.76
	Receive any incentive/bonus/commission linked to any work group that you belong to	1.15	0.36	0.73	
	Receive any incentive/bonus/commission linked to the results achieved by your organisation or your workplace	1.24	0.43	0.75	
Training	Done any types of training or education connected with your current job	0.67	0.47	0.84	
Team working	Influence of work group on how hard you work	1.53	1.44	0.90	0.97
	Influence of work group on deciding what tasks you are to do	1.36	1.33	0.95	
	Influence of work group on deciding how you are to do the task	1.30	1.28	0.97	
	Influence of work group on deciding the quality standards to which you work	1.37	1.38	0.94	
<i>Employee wellbeing</i>					
Work-life balance	After I leave my work I keep worrying about job problems (reversed-coded)	2.55	1.34	0.76	0.82
	I find it difficult to unwind at the end of a workday (reversed-coded)	2.50	1.30	0.90	
	I feel used up at the end of the day (reversed-coded)	2.79	1.36	0.71	

	How much of the time has your job made you feel contented	3.20	1.31	0.75	
Positive affect	How much of the time has your job made you feel cheerful	3.61	1.29	0.78	0.79
	How much of the time has your job made you feel optimistic	3.12	1.31	0.72	
	How much of the time has your job made you feel depressed	1.81	1.04	0.84	
Negative affect	How much of the time has your job made you feel gloomy	1.89	1.00	0.86	0.89
	How much of the time has your job made you feel miserable	1.76	1.01	0.85	
	Willing to work harder to help this organisation succeed	3.12	0.70	0.60	
Organizational Commitment	My values and my organisation's values are very similar	2.87	0.68	0.70	0.78
	Proud to be working for this organisation	2.99	0.71	0.82	
	Would turn down another job with more pay to stay with this organisation	2.17	0.86	0.60	
	Satisfied with your promotion prospects	4.45	1.42	0.59	
	Satisfied with your pay	4.54	1.46	0.52	
Job satisfaction	Satisfied with relations with your supervisor or manager	5.36	1.32	0.70	0.83
	Satisfied with the ability and efficiency of the management	4.77	1.44	0.74	
	Satisfied with the friendliness of the people you work with	5.79	1.01	0.54	
	Overall satisfaction with job	5.38	1.24	0.84	

Demographic factors

Regions in UK	North East; North West; Yorkshire and the Humber; East Midlands; West Midlands; East of England; London; South East; South West; Wales; or Scotland
Gender	Male or female
Age	Five bands: Age 20 to 29; Age 30 to 39; Age 40 to 49; Age 50 to 59; Age 60 to 65
Sector	Private; public; or non-profit organization

Sample Size (N): 3200

CFA Model fit: Chi-square (χ^2) = 3831.32; degrees of freedom (df) = 843; p-value < 0.001; RMSEA = 0.03; CFI = 0.95; TLI = 0.94; SRMR = 0.04.

Data analysis

We analysed the data in three stages – Stages 1, 2 and 3 - that correspond to our three research questions.

The aim of *Stage 1* was to examine whether there are constellations of job characteristics and employment practices that influence employee wellbeing in different ways. The analysis involved latent profile analysis (LPA), a probabilistic statistical technique belonging to the family of mixture modelling methods (Morin et al, 2011). LPA is a recently developed technique for categorising units into a smaller number of categories based on shared characteristics: In this case, categorising workers on the basis of the features of their jobs and work. As a way of forming meaningful categories, LPA is similar to the better known and more widely used cluster analysis, but has advantages over cluster analysis that makes LPA superior in terms of accuracy. In the present analysis, one advantage is that LPA categorises units based on the probability of a unit belonging to a cluster given its characteristics rather than aggregating in a hierarchical “all or none” fashion units that are more similar to each other defined by a given distance metric (e.g. nearest neighbour method in cluster analysis). Another advantage is that LPA provides a set of goodness-of-fit statistics that allows comparison of different models and choice of the best fitting model.

We used LPA to identify meaningful categories of individuals based on patterns of conditional probabilities on the ten job characteristics and employment practices. Each category thus represents individuals with similar patterns of responses on the job characteristics and employment practices. We began the LPA procedure by estimating the maximum plausible number of categories, and subsequently reduced this until we reached the minimum plausible number of categories. Goodness-of-fit statistics such as Akaike Information Criteria (AIC), Bayesian Information Criteria (BIC), Adjusted-BIC and Entropy were used statistically to determine the best solution for our data. The generally acceptable principle is to choose the solution with lowest AIC, BIC and Adjusted-BIC estimates, and highest Entropy. Entropy values typically range from 0 to 1 (where values approaching 1 indicate more robust clustering) and assess the extent to which the categories are truly discrete. In some cases, we applied subjective judgement (e.g., assessing the degree of consistency in classification of job characteristics across categories) in deciding the best solution for our data.

Our first attempt was to examine an eight-class model to see if data can be explained by eight constellations of job characteristics and employment practices. This model did not converge due to zero estimated variance in one or more of the created categories. A seven-class model also failed to converge for the same reason. We then examined six-class, five-class, four-class and three-class models. Of the four models, the six-class model had better goodness-of-fit: AIC = 48018.96; BIC = 48474.28; Adjusted BIC = 48235.97; Entropy = 0.83. However, the classification of workplace characteristics (particularly job autonomy, job security, contingent pay and training) was not consistent across categories and the probability of belonging to one of the categories was not truly discrete. With such discrepancy, it can be problematic to assign meaningful and appropriate labels for the categories. Compared to the six-class model, goodness-of-fit for the five-class model was less adequate (model fit: AIC = 48391.92; BIC = 48780.46; Adjusted BIC = 48577.11; Entropy = 0.82). The classification of job characteristics and employment practices was more consistent in this model. Compared to the five-class model, goodness-of-fit for the four-class (model fit: AIC = 49043.94; BIC = 49365.70; Adjusted BIC = 49197.29; Entropy = 0.83) and three-class models (model fit: AIC = 49771.18; BIC = 50026.16; Adjusted BIC = 49892.71; Entropy = 0.86) was less adequate, although entropy tended to increase with reducing numbers of categories. The classification of job characteristics and employment practices in the four- and three-class models was not as consistent as in the five-class model. The two authors met to discuss the different solutions and agreed to adopt the five-class solution.

Stage 2 of our analysis involved one-way analysis of variance (one-way ANOVA) with Tukey's post-hoc test. The analysis examined the extent to which the mean values of employee wellbeing measures – work-life balance, positive affect, negative affect, organizational commitment, and job satisfaction – were significantly different across the five categories of job characteristics and employment practices. Tukey's post-hoc test was performed to compare statistically the mean values of employee wellbeing for pairs of categories at a time.

Stage 3 of the analysis aimed to explore demographic conditions under which different constellations of job characteristics and employment practices might influence employee wellbeing. We used the Chi-Square test to examine whether there were statistically significant differences in the number of people with different characteristics in each of the five categories of job characteristics.

Results

Stage 1 – Classification of job characteristics and employment practices

The results of our analysis in Stage 1 are summarised in Table 2. The table shows the classification of job characteristics and employment practices as derived from the LPA five-class model. The values presented in Table 2 represent mean estimates of job characteristics and employment practices for each category. Figure 1 shows the proportion of jobs falling into each category.

Category 1, which represents 6.0% of the sample, can be seen to have relatively lower mean scores on all job characteristics and employment practices. Its score on contingent pay is also low but slightly higher (mean difference of 0.01) than Category 5. Members of Category 1 are thus exposed to poor job quality and their employment conditions are most likely of a lower standard compared to individual workers in the other four categories.

We refer to this category as **jobs with low work involvement, low demands and low performance management**. Workers with jobs in this category have little input into decisions that affect their work, low skill use, few training and development opportunities, and low levels of team working and information sharing. They also have low job security, do not receive performance related pay and tend not to have much in the way of performance appraisal.

For short, we refer to these jobs as NONOs (NOt consulted, NOt much else)

In Category 2, the experience of job autonomy, decision latitude, job design and job security is relatively low compared to all categories except Category 1. Category 2 represents 15.1% of the sample and has moderate scores on job demands, information sharing, contingent pay, training and team working, and a fairly high score on performance appraisal.

We refer to this category as **jobs with low work involvement, moderate demands and performance management**. Workers with jobs in this category also have little input into decisions, low skill use and low job security. Jobs in this category are characterised by moderate scores on job demands, information sharing and team working, performance related pay and training. Workers in this category do experience performance management.

For short, we refer to these jobs as NOCOs (NOt COnsulted)

Category 3 represents 17.1% of the sample. Alongside Category 5, Category 3 has a higher mean score on job autonomy. The score on contingent pay is also relatively high compared to all categories except Category 4. Category 3 has moderate scores on decision latitude and job design, and a high score on job security. With high levels of job autonomy, high job security and reasonable job design, members of Category 3 can be said to have a degree of independence over the nature of their jobs. Their experience of performance appraisal, information sharing, training and team working is relatively low, though not as low as Category 1. The level of job demands experienced in Category 3 is lower than Categories 2, 4 and 5. In all, Category 3 seems to represent a group of workers in secure jobs, but their level of work involvement may not extend beyond their immediate work responsibilities.

We refer to this category as **jobs with some work involvement and job security but low performance management**.

We refer to these jobs as **SOCSS (Some Consultation and Security)**

Category 4 represents 14.5% of the sample. It is conceptually similar to Category 5 due to its relatively high scores on job autonomy, decision latitude, job design and information sharing. However, the mean estimates for these job characteristic dimensions are slightly lower than Category 5. Category 4 also has higher mean scores on job demands, job security, performance appraisal and team working. Higher levels of job demands in Category 4 represent an important factor distinguishing it from other categories. Another important distinguishing factor for Categories 4, relative to Category 5, is a higher mean score on contingent pay. Category 4 thus represents a type of high-quality work environment in some ways but one in which workers have high job demands and their level of performance is overtly linked to monetary incentives.

We refer to Category 4 as **jobs with high involvement, high demands, high performance management and performance related pay**.

We refer to these jobs as **HIIPs (High Involvement, Demands and Performance-related Pay)**

Category 5 is the largest category representing 47.4% of the sample. As with Category 3, job autonomy is higher among members of Category 5. Individual workers in Category 5 also reported higher scores on decision latitude, job design, performance appraisal, information sharing and training. These workplace characteristics reflect the extent to which members of Category 5 are actively involved in both their immediate work responsibilities and the wider organisation. The experience of job demands, job security and team working in Category 5 is also relatively high, but slightly lower than Category 4. The main distinguishing feature of Category 5 relates to its significantly lower score on contingent pay. Low contingent pay in Category 5 reflects a type of high-quality work environment in which workers' performance is not overtly linked to monetary incentives. Therefore, motivation in the job is likely to come primarily from the nature of the work itself providing a sense of interest, meaning and significance in the work (cf. Hackman & Oldham, 1976) – hence the work is intrinsically motivating.

We refer to Category 5 as **jobs with high work involvement, high job demands, high performance management and internal motivation**.

We refer to these jobs as **HIIMs (High Involvement, Demands and Motivation through the work itself)**

In terms of ranking on the features of high quality work, we would consider NONO jobs to have the lowest quality, followed by NOCO jobs. We would consider HIIP and HIIM jobs to be the highest quality, with SOCS jobs somewhere between the two lowest quality and two highest quality jobs.

Overall, and as shown in Figure 1, over 60% of workers in the Skills and Employment Survey reported being in better quality jobs (HIIPs and HIIMs).

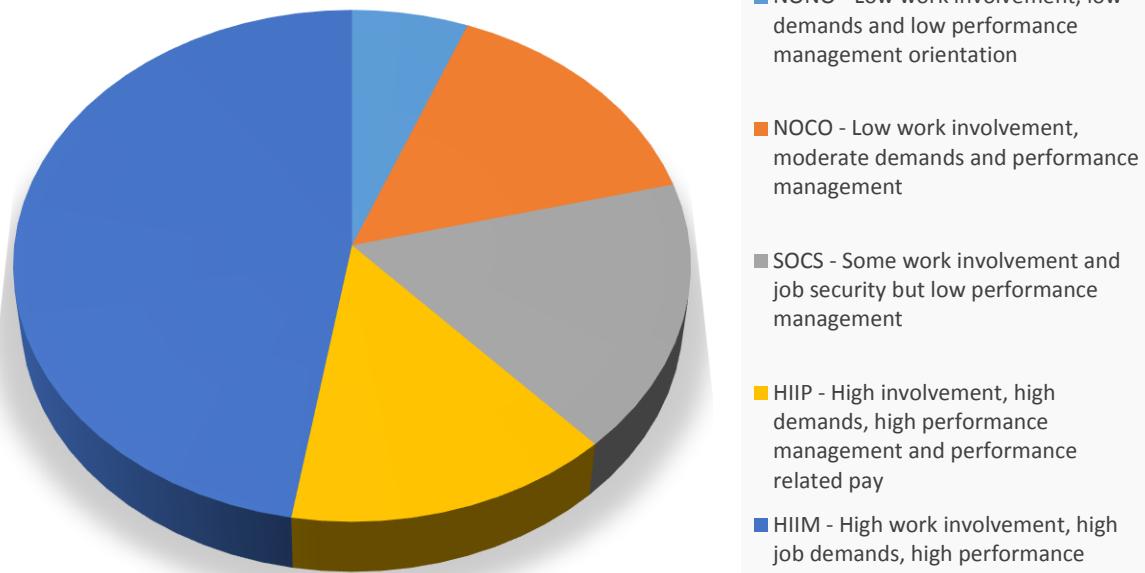
Table 2: Classification of job characteristics and employment practices based on latent profile analysis

Job characteristics	Category 1	Category 2	Category 3	Category 4	Category 5
	NONO N = 191	NOCO N = 482	SOCS N = 546	HIIP N = 464	HIIM N = 1517
Job autonomy <i>(Scale from 1 to 4)</i>	Lowest (2.57)	Low (2.73)	Higher (3.44)	High (3.35)	Higher (3.44)
Decision latitude <i>(Scale from 1 to 4)</i>	Lowest (1.47)	Low (1.88)	Medium (3.20)	High (3.30)	Higher (3.37)
Job design <i>(Scale from 1 to 5)</i>	Lowest (2.33)	Low (2.86)	Medium (3.27)	High (3.49)	Higher (3.60)
Job demands <i>(Scale from 1 to 7)</i>	Lowest (3.33)	Medium (3.77)	Low (3.58)	Higher (4.05)	High (3.89)
Job security <i>(Scale from 0 to 1)</i>	Lowest (0.66)	Low (0.70)	High (0.77)	Higher (0.79)	High (0.78)
Performance appraisal <i>(Scale from 1 to 2)</i>	Lowest (1.18)	High (1.52)	Low (1.25)	Higher (1.70)	Higher (1.70)
Information sharing <i>(Scale from 1 to 2)</i>	Lowest (1.05)	Medium (1.86)	Low (1.07)	High (1.93)	Higher (1.96)
Contingent pay <i>(Scale from 1 to 2)</i>	Lowest (1.07)	Medium (1.11)	Medium (1.13)	Higher (1.83)	Lowest (1.06)
Training <i>(Scale from 0 to 1)</i>	Lowest (0.31)	Medium (0.62)	Low (0.43)	High (0.78)	Higher (0.80)
Team working <i>(Scale from 0 to 4)</i>	Lowest (0.89)	Medium (1.30)	Low (1.12)	Higher (1.55)	High (1.52)

Sample Size (N): 3200

Model fit: AIC = 48391.92; BIC = 48780.46; Adjusted BIC = 48577.11; Entropy = 0.82

Proportions of Different Jobs in Skills and Employment Survey



Stage 2 – Job characteristics, employment practices and employee wellbeing

The results of our analysis in Stage 2 are summarised in Table 3 and Figure 2. Table 3 shows mean estimates of employee wellbeing for each category and the difference in mean estimates of employee wellbeing for specific pairs of categories. Figure 2 shows the standings for each job category relative to the NONOs (jobs with low work involvement, low demands and low performance management), expressed as the average for each other job type divided by the average for NONOs.

There were a number of statistically significant differences between workers with NONO jobs (with low work involvement, low demands and low performance management) and workers with other kinds of jobs. As shown in Table 3, the experience of work-life balance for workers with NONO jobs is lower compared to all the other categories. Workers with NONO jobs also report lower positive affect than workers with in three of the other four categories, lower job satisfaction and organisational commitment than all other job categories, and more negative affect than workers in two categories. These outcomes are not surprising as workers with NONO jobs are exposed to low-quality working conditions and relatively lower scores on all job characteristics and employment practices.

Workers with NOCO jobs (with low work involvement, moderate demands and performance management) also tended report lower wellbeing compared to job categories with higher levels of involvement in decision about their work and job security. Statistically significant differences between the NOCO category and other types of jobs were that: Workers with NOCO jobs experienced lower work-life balance compared to individuals in two of the higher quality job categories, lower positive affect, less job satisfaction, lower organisational commitment and more negative affect compared to all three of the higher quality job categories.

There were statistically significant differences between workers with SOCS jobs (with some work involvement and job security but low performance management) and the two higher quality jobs categories as follows: Workers with SOCS jobs reported lower work-life balance, organisational commitment and job satisfaction than both of the highest quality job categories. However, workers with SOCS jobs had less positive affect than workers in only one of the higher quality job categories and experienced more or less the same levels of negative affect as the higher quality job categories.

We did not find any statistically significant differences between workers in the two highest job quality categories – HIIPs jobs (with high involvement, high demands, high performance management and performance related pay) and HIIM jobs (with high work involvement, high job demands, high performance management and internal motivation).

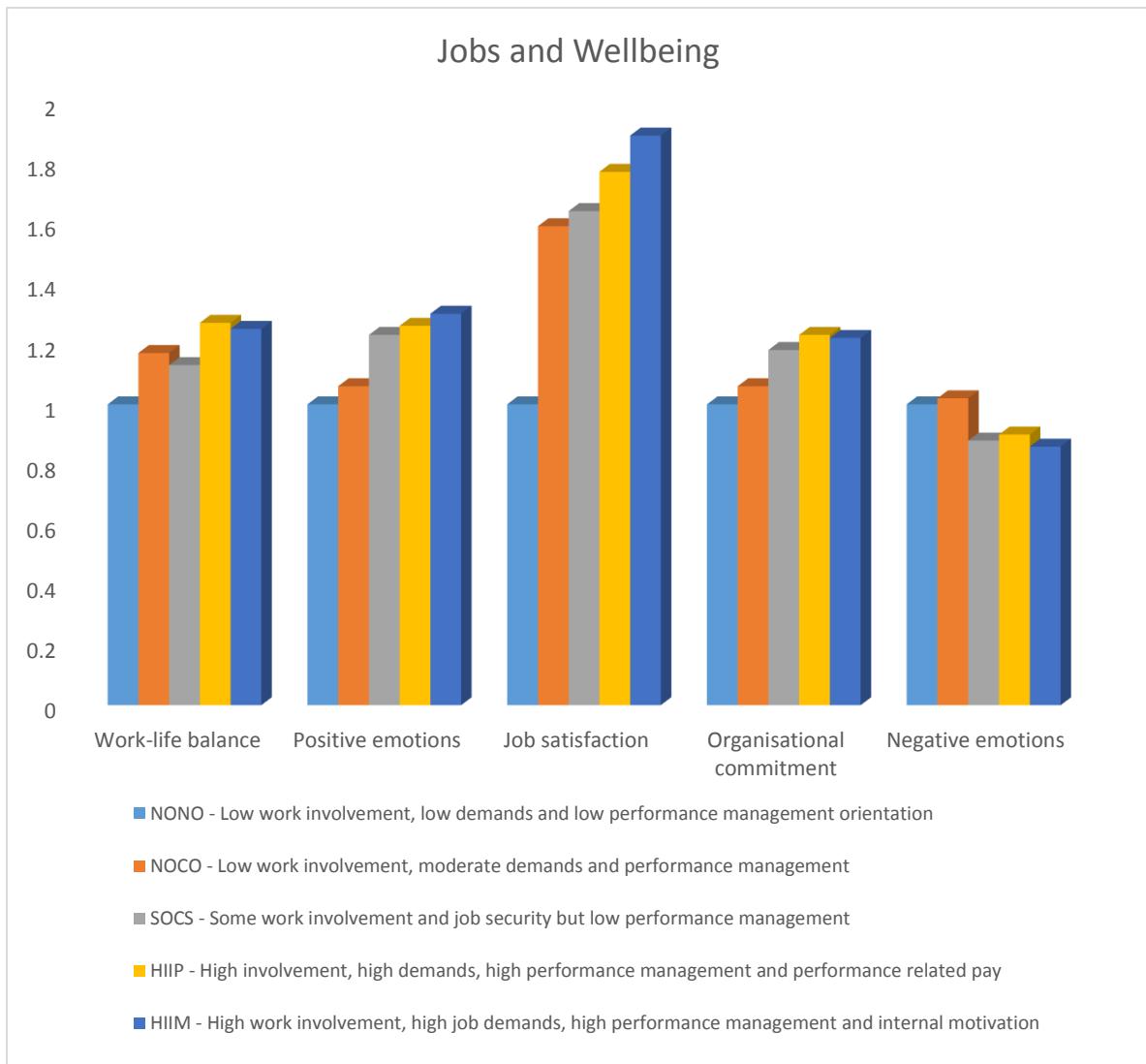
Figure 2 summarises the results by showing the average value for each other job type divided by the average for NONOs. NONO jobs are associated with workers experiencing lower levels of wellbeing and positive attitudes to work across a range of indicators. In general terms, the highest levels of wellbeing and positive attitudes towards work are associated with the two categories of jobs with the highest quality. These results support other research that shows indicators of job quality are associated prospectively with better health and wellbeing, at the same time showing the features of high quality work can be combined into a small number of categories.

Table 3: Relationships among job characteristics and employment practices and employee wellbeing based on one-way ANOVA

		NONO	NOCO	SOCS	HIIP
		Mean	Mean difference	Mean difference	Mean difference
Work-life balance (Scale from 1 to 6)	NONO	2.17	-		
	NOCO	2.54	0.37**	-	
	SOCS	2.45	0.28*	-0.09	-
	HIIP	2.75	0.58***	0.21*	0.30***
	HIIM	2.71	0.54***	0.18*	0.26***
Positive affect (Scale from 1 to 6)	NONO	2.70	-		
	NOCO	2.87	0.17	-	
	SOCS	3.32	0.62***	0.45***	-
	HIIP	3.39	0.69***	0.53***	0.06
	HIIM	3.50	0.79***	0.62***	0.17*
Job satisfaction (Scale from 1 to 7)	NONO	2.79	-		
	NOCO	4.44	0.14	-	
	SOCS	4.58	0.50***	0.36***	-
	HIIP	4.94	0.80***	0.66***	0.31***
	HIIM	5.24	0.81***	0.67***	0.31***
Organizational commitment (Scale from 1 to 4)	NONO	2.37	-		
	NOCO	2.52	0.15*	-	
	SOCS	2.80	0.43***	0.28***	-
	HIIP	2.92	0.56***	0.41***	0.13**
	HIIM	2.90	0.54***	0.39***	0.10**
Negative affect (Scale from 1 to 6)	NONO	2.02	-		
	NOCO	2.07	0.05	-	
	SOCS	1.78	-0.24*	-0.29***	-
	HIIP	1.82	-0.20	-0.26***	0.03
	HIIM	1.73	-0.29***	-0.34***	-0.05

Sample Size (N): 3200

* $p < .05$; ** $p < .01$; *** $p < .001$



Stage 3 – job characteristics, employment practices and demographic factors

We whether there differences in the number of workers in each of the five categories of jobs according to: region in Great Britain, gender, age, sector and occupational type. Chi-square analysis revealed significant differences across all demographic factors (all $p < .001$), but some differences across demographic factors were more pronounced than others.

Region. Our sample has more respondents from Wales (18.3%) and less from the North East of England (4.4%). The proportion of respondents from the remaining nine UK regions ranges from 6.5% (for Scotland) to 11.5% (South East of England).

If we calculate the ratio of better quality jobs (HIIPs, HIIMs) to lower quality jobs (NONOs, NOCOs, SOCSs), we find that overall in Great Britain, there are around 1.62 better quality jobs for every lower quality job.

However, there are regional differences. The South East of England, London and the South West of England have the highest ratio of high quality jobs to low quality jobs (2.05, 1.99, 1.95 respectively). The West Midlands and Scotland score above average for Great Britain (1.78 and 1.72 respectively). Falling below the national average in the ratio of better quality to lower quality jobs are the North East of England (1.56), the East Midlands (1.52), Yorkshire and Humberside (1.51), the East of England (1.46), Wales (1.41) and the North West of England (1.31).

Gender. The sample is characterised by 52.9% female respondents and 47.1% male respondents. In relation to the ratio of better quality jobs to lower quality jobs, there is not much difference between the genders (female 1.63, male 1.62).

Age. The sample comprises 75.4% of respondents aged between 30 to 59 years. About 14.8% of respondents in the sample are younger workers aged between 20 to 29 years, whereas 9.7% of respondents are older workers aged between 60 to 65 years.

When comparing the ratio of better quality jobs to lower quality jobs, there are differences. Workers aged 30-39 have the highest ratio of better quality jobs (2.18), followed by workers aged 40-49 (1.77). Falling below the national average are workers closest to retirement and the youngest workers. Workers aged 50-59 have a ratio of 1.59 better quality jobs to lower quality jobs, workers aged 20-29 have a ratio of 1.24 and workers aged 60-65 have a ratio of 1.09.

Sector. Around 62.1% of respondents in the sample are employed by private sector organizations; 32.7% are employed by public sector organizations and 5.2% by non-profit organizations.

The ratio of better quality jobs to lower quality jobs is lower in the private sector (1.30) than the public sector (2.14) and the non-for-profit sector (3.36).

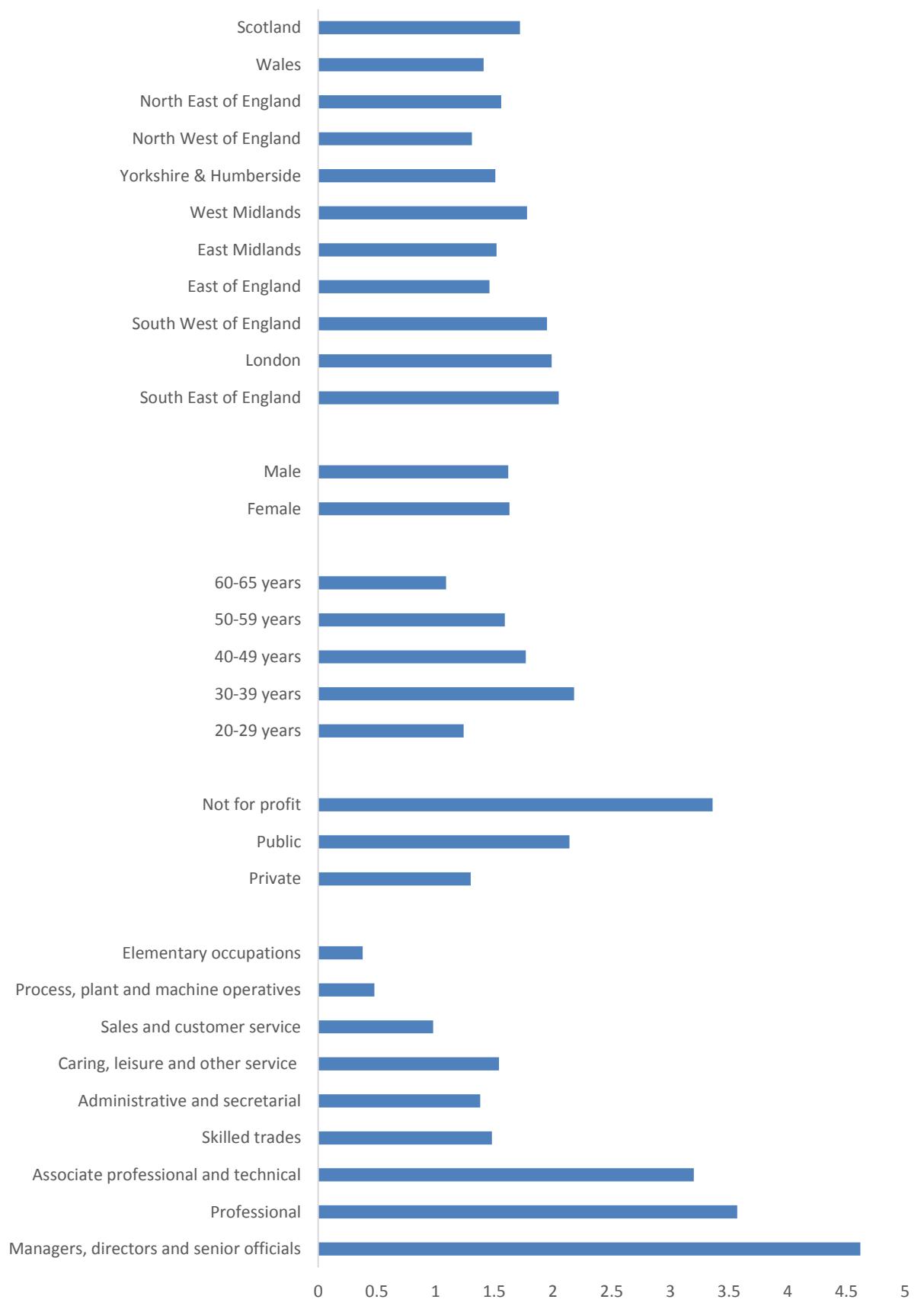
Occupational type. Our sample has high representation from professional occupations (17.8%) and associate professional and technical (15.7%) occupations, whereas sales and customer service occupations have the lowest representation of respondents (6.2%). The proportion of respondents from other occupational groups ranges from 7.2% (for process, plant and machine operatives occupations) to 12.6% (caring, leisure and other service occupations).

When comparing the ratio of better quality jobs to lower quality jobs, the highest quality jobs were found amongst managers, directors, senior officials, professionals, associate professionals and technicians (all classes 3.20 or over). Administrators, secretaries, skilled trades, caring, leisure and services workers reported the next highest proportion (all classes 1.38 or over) followed by sales and customer services workers (ratio of 0.98). The lowest proportions of high quality jobs were found amongst process, plant and machine operatives (0.48) and elementary occupations (0.38).

However, in this sample, some 27.2% of respondents with elementary occupations reported jobs that could be characterised as high quality jobs (HIIPs and HIIMs), indicating all of the occupational groups in the sample had representation amongst the highest quality job categories.

Figure 3 summarises the findings with respect to the ratio of higher to lower quality jobs for different groups.

Figure 2. Ratio of higher quality jobs/lower quality jobs for different groups



Conclusions and limitations

Our analysis revealed workers across Britain may be clustered according to their workplace experiences into five different types of jobs, which may be represented in terms of a continuum from low- to high-quality jobs.

At the lower end of this continuum are jobs in which workers are exposed to low workplace involvement, low job demands and low performance management practices. Individual workers in these kinds of jobs are neither involved in workplace decision-making nor allowed to directly influence the nature of their jobs. Another set of workers with lower quality work have less latitude to directly influence workplace decisions and the nature of their jobs; however, the use of performance management strategies such as performance appraisal and training is considerably high. Demands are also high.

In the middle of the continuum are jobs with high-moderate workplace involvement, high job security and low performance management.

At the higher end of the continuum are two categories of high-quality jobs that are associated with the highest wellbeing and most positive attitudes to work. Workers in these types of jobs have high involvement in decisions, use their skills, are more likely to work in teams and have higher levels of performance management. The main difference between the two types of high-quality jobs relates to higher prevalence of performance contingent pay in one category compared to the other: The implication of this result is that performance related pay does not seem to matter for wellbeing, provided other features of good quality work and employment practices are in place. Workers in these types of high quality jobs also experienced higher work demands: It seems that good work and employment practices can offset the detrimental effects of work demands (cf. Karasek & Theorell, 1990).

There seem to be considerable differences across Great Britain in terms of workers' experience of job quality and wellbeing, with the South of England having a higher proportion of high quality jobs, whereas the North West, Wales, East of England, Yorkshire and Humberside, East Midlands and North East have lower proportion of high quality jobs.

Those found in lower quality jobs tended to be younger workers (aged 20-29) or older workers (aged 50 or over), with 30-39 year olds tending to have better quality jobs. There was not much difference between the genders.

There was a lower proportion of better quality jobs to lower quality jobs in the private sector compared to the public and not-for-profit sectors. To some extent, this pattern might reflect wide spread outsourcing of non-professional services in the public sector.

Although managers, directors, senior officials, professionals, associate professionals and technicians tended to report the highest quality jobs, the results show that all occupational groups had representation in each of the Categories, indicating that it can be possible to design high quality work and employment systems for many if not all occupational types.

Our results do not demonstrate causality, and so we cannot infer that the characteristics of certain regions or individuals causes higher or lower quality jobs. However, with respect to wellbeing, the differences between the higher and lower quality jobs are consistent with large-scale prospective studies (for a summary, see Daniels et al, in press).

Our conclusions are restricted by the nature of the sample. Although a relatively large sample (3200) when making comparisons across some regions and sectors in particular, cell sizes may be especially small (e.g. the number of responses from the North East of England is less than 150) and a sample of over 3000 could not cover sufficient numbers of jobs in all parts of Great Britain to provide representative data. Therefore, in relation to demographic differences, the findings should be regarded as more tentative and only indicative of areas that may require further, detailed investigation. For example, finding that Northern England tends to have lower quality jobs than Southern England might lead to investigation centred on migration of qualified workers south or lack of investment in Northern infrastructure or businesses.

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