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Job Satisfaction, Work Environment and Relations with Managers in Britain

Şaziye Gaziöglu

Department of Economics, University of Aberdeen, Aberdeen AB24 3HQ,UK
and
Middle East Technical University
e-mail: s.gazioglu@abdn.ac.uk

Aysıt Tansel

Department of Economics, Middle East Technical University, 06531 Ankara, Turkey
e-mail: atansel@metu.edu.tr

Abstract

Little empirical work has been done on the relationship of job satisfaction to work environment and the managerial attitudes towards employees. Employees' well being is important to the firm. Analysis of job satisfaction may give insight into various aspect of labor market behavior, such as worker productivity, absenteeism and job turn over. This paper investigates the relationship of worker satisfaction, to the work environment and the worker relationship to managers. We use a unique data of 28 240 British employees, Workplace Employee Relations Survey (**WERS97**). In this data set the employee questionnaire is matched with the employer questionnaire. Four measures of job satisfaction are negatively related to the establishment size. Establishment size in return is related to the degree of flexibility in the work environment and the relationship with the supervisors. We find that, contrary to the previous results lower levels of job satisfaction in larger establishments can not necessarily be attributed to the inflexibility in the work environment. However, the weak employee-manager relationships may be a major source of the observed lower levels of job satisfaction in larger establishments

Key Words: Job Satisfactions, Establishment Size, Structure of Work Environment, Employee-Manager Relations,

JEL Classifications: L20, L29, J50

1. Introduction:

Recently there have been several studies on the relationship between work structure, establishment size and job satisfaction of employees. Scherer's (1976) work was one of the earliest studies in this area. Using 1973 Quality of Employment Survey (QES), he found that low levels of job satisfaction were associated with large establishments. Since then other studies such as Kwoka (1980) and Idson (1990) gave credence to this result. Kwoka used 1977 QES data and multivariate estimation techniques. Idson (1990) also used 1977 QES survey and examined the relationship between the establishment size, work structure and job satisfaction. He found that regimentation in the work environment of the larger establishments leads to lower levels of job satisfaction. Studies by Dunn (1980, 1986) also indicated less worker satisfaction in larger firms¹. Stafford (1980) and Oi (1983) developed models with the outcome of greater rigidity² in the work structure of larger firms. Association of lower levels of job satisfaction with larger establishment sizes was also reported in the UK. Clark (1996) used 5 000 British employees from British Household Panel Survey(BHPS) 1991 and investigated job satisfaction with various individual and firm characteristics. However, Clark (1996) was not able to investigate the nature of the work environment and the establishment size. This is an important contribution of this paper.

This study uses the UK data from the 1997 Workplace Employee Relations Survey (**WERS97**) of the Department of Trade and Industry. This unique data includes a matched Employer Survey, rich set of questions on work conditions and worker's relationship with managers. In this data set the number of observations is larger and it includes larger size establishments than in the Clark's(1996) study. We investigate the relationship of job satisfaction, establishment size, the structure of the work environment and the quality of employee-manager relationship. Our conclusions are the following: The organisation of production in large establishments is more regimented than in small establishments. Similarly, in large establishments employee relationships with the management are less satisfactory than in smaller establishments. We also observed lower levels of job satisfaction in larger establishments. Further, we find that lower levels of job satisfaction in larger establishments cannot necessarily be attributed to the

¹Kwoka (1980) explains higher wages in larger establishments to be the compensation for the lower worker satisfaction. However, Dunn (1980, 1986) suggest that higher pay in larger establishments could not be fully explained by lower worker satisfaction. Brown and Medoff (1989) gave other possible explanations of the positive relationship between wages and employer size. These include the possibility that larger firms may hire higher quality workers, may use higher wages to preclude unionization and are less able to monitor their workers.

² Since mobility cost are higher in large establishments, optimal amount of job search is lower for workers in large establishments (Oi, 1983). Oi developed a model that endogenously generates a more regimented working environment in larger firms. He contends that in the larger firms the production is organized in a regimented environment, since large firms attempt to minimize the opportunity cost of the talented managers that they attract.

inflexibility in the work environment. However, less satisfactory human relationships in the large establishments may be a major source of the observed lower level of job satisfaction there.

We organize the paper in the following manner. In Section 2A we discuss the establishment size and the structure of work environment. In Section 2B we investigate the establishment size and the employee-manager relationships. In Sections 3A and 3B job satisfaction is related to the structure of work environment and employee relations with management, respectively. Concluding remarks are presented in Section 4.

2A. Establishment Size and the Structure of Work Environment

A number of researchers postulated that structure of work environment is more rigid in larger establishments than in smaller establishments. Rigidity in the structure of work environment has implications for worker satisfaction. In this section we estimate maximum likelihood probit regressions that relate various measures of work rigidity to the establishments size. Establishment size indicator is the number of employees, which is included in logarithmic form in order to allow for nonlinearities in the relationship between of structure of work environment and the establishment size. The regressions also controlled for worker characteristics and job characteristics. Tables 1 and 2 report our estimation results using various measures of the structure of work environment. In Table 1, the dependent variables are binary variables, which indicate some or a lot of influence workers have a) about the range of tasks they do in their jobs; b) about the pace at which they work; c) about how they do their work. The results in this table confirm the conclusion reached by Idson (1990) with the US data. In the estimation results, we consistently find that the establishment size is negatively related to the amount of influence the workers have over the range of tasks they do, over the pace at which they work and over how they do their work. Thus in larger establishments employees face greater rigidity in organization of the work than in the smaller establishments. There are other interesting results in this table. It is of interest to note that those employees with health problems have consistently less influence over what they do and how they do their job.

Table 2 reports probit results in relation to the flexibility of hours, days and the place of work. The question asks if flexible working hours, job sharing, parental leave or working from home would be available if needed. The coefficient estimates of the establishment size show positive relationship in all cases except in the case of flexible working hours. As the establishment size increases flexible working hours are less likely to be available, implying more rigidity. Whereas job sharing, parental leave and working from home could be considered as characteristics of the larger establishments.

2B. Establishment Size and Employee - Manager Relations

In this section we investigate the relationship of the establishment size to the employee-manager relations. To our knowledge this relationship has not been investigated before. Tables 3 and 4 report the results of the unique questions in this survey. In these questions workers are requested to indicate whether they are frequently asked on a) staffing issues b) pay issues and c) health and safety at work. These variables are consistently negatively related to the establishment size. In passing, we note that those employees who are in the managerial and/or professional positions indicated that they were frequently asked about staffing issues, pay issues and health and safety at work.

Table 4 reports on another aspect of the employee relations with managers. The question asks if the employee has discussed any of the indicated issues during the past twelve months. These issues include how the employee is getting on with her/his job, his or her chances of promotion, training needs and pay. Among these variables, only the first one is negatively related to the establishment size, indicating that in the larger establishments the employees are less likely to be asked on how they are getting on with their job. This is expected because the issue is personal in nature and more likely to be asked in small establishments.

However, in large establishments promotion prospects, training needs and pay issues are more likely to be discussed routinely. We also note that more educated employees are more likely to discuss chances of promotion, training needs and pay issues with their supervisors. Similarly, employees in managerial and/or professional positions, and in clerical occupations are more likely to discuss promotion, training and pay issues with their supervisors compared to the sales employees.

3A. Job Satisfaction and Structure of Work Environment³

In this section we examine the effect of the work structure environment to the job satisfaction. Table 5 reports the means for the four measures of job satisfaction at different establishment sizes. While the satisfaction with influence over job declines steadily as establishment size increases, the other satisfaction measures indicate a nonlinear relationship to the establishment size. Taking this into account we introduced a variable in the logarithm of the establishment size in the job satisfaction regressions reported in Table 6. The regressions in Table 6 are estimated with a maximum likelihood ordered probit technique. Table 7 reports the ordered probit job satisfaction regressions, which additionally include work structure variables.

³ In this study four job satisfaction measures are used: Satisfaction with influence over job, satisfaction with amount of pay, satisfaction with sense of achievement and satisfaction with respect from supervisors. Further information about our data and distribution of these job satisfaction measures are provided in Gazioglu and Tansel. (2002)

From these two tables we can assess the extent to which work structure differences can account for the effect of the establishment size in the job satisfaction regressions. Our aim is to investigate whether the work structure variables can account for the lower levels of job satisfaction in larger establishments. We observe that in Table 6, the log establishment size has a negative and statistically significant coefficient estimate in all four measures of the job satisfaction regressions. When work structure variables are introduced as in Table 7, we observe that the coefficient estimates of log establishment size are either the same or slightly smaller and still highly statistically significant. This implies that observed lower levels of job satisfaction in larger establishments can not necessarily be attributed to the greater rigidity in the work structure. This result is contrary to the findings of Idson (1990) with the US data. Idson found that the introduction of the work structure variables drove the estimated coefficient on the log establishment size to zero. This led him to conclude that observed lower levels of worker satisfaction in larger establishments may be attributed to the greater rigidity in the work structure (Idson, 1990: 1016). The difference in our results and those of Idson may be due to the difference in the work structure and job satisfaction variables we are using. Both sets of work structure variables are expected to measure rigidity in the work environment. This difference may also be due to the difference in the size of the firms in our study and that in the study of Idson. In his study the firm sizes are much smaller than in ours. In our study 34.5 percent of all establishments have 200 and more employees. There may also be differences in this respect in the two countries studied: Idson uses US data and our study pertains to the British employees. These results indicate that autonomy over various aspect of work consistently increases job satisfaction in all four measures considered.

In our study, the first set of work structure variables relate to what work employees do and how they do it. As it is observed in Table 7 the coefficient estimates on those workers who have some or a lot of influence over the range of tasks they do in their job are all positive and statistically significant in all four measures of job satisfaction. Similarly, the coefficient estimates on those employees who have some or a lot of influence over the pace at which they work are all positive and statistically significant in all four measures of job satisfaction. The coefficient estimates on those employees who have some or a lot of influence over how they do their work are all positive and statistically significant in all four measures of job satisfaction. In the same table the second set of work structure variables relate to the availability of a number of alternative work environments such as flexible working hours, job sharing, parental leave and working from home. The coefficient estimates on all these variables are statistically insignificant except for the availability of the flexible working hours which is found to reduce various measures of job satisfaction contrary to our expectations. A likelihood ratio test of the joint significance of the two sets of work structure variables indicate that they are jointly statistically significant at the 5 percent level.

3B. Job Satisfaction and Employee Relations with Management

In this section we examine the job satisfaction and the quality of employee relations with management. Table 6 is the basic regression and is to be compared with Table 8. The regressions in Table 8 are estimated with Maximum likelihood probit technique and additionally include variables, which reflect the quality of the employee relations with the managers. Comparing Tables 6 and 8 we can assess the extent to which employee- manager relationship variables can account for the effect of the establishment size in job satisfaction regressions. We would like to see whether managerial relation variables can account for the lower levels of job satisfaction in larger establishments. We note the negative and statistically significant coefficient estimates of log establishment size in Table 6 for all of the four measures of job satisfaction. When managerial relation variables are introduced as in Table 8 the coefficient estimates of log establishment size in the job satisfaction regressions were driven to zero. We conclude that observed lower level of job satisfaction in large establishments can be attributed to the poor employee- manager relations in larger establishments. There are several sets of variables, which give the quality of the employee relations with the managers. In Table 8, the coefficient estimates of those workers who were frequently asked their views on staffing issues, pay issues, and health and safety at work were all positive and statistically significant in the four job satisfaction regressions. The coefficient estimates of the discussions with managers (during the past year) on how the employee is getting on with his/ her job, his/ her promotion, training needs and pay are all statistically insignificant. Furthermore, in these regressions the coefficient estimates of the managers treating employees fairly are all positive and statistically significant. The coefficient estimates of the description of the relations between employees and managers as “very good” are all positive and statistically significant also.

4. Conclusions:

When we explored the relationship between establishment size and the structure of work environment we found that in the larger establishments workers face greater rigidity in the organization of the work than in the smaller establishments. We found consistently negative relationships between establishment size and the influence workers have on the range of tasks, the pace of the work and how the work is done. Furthermore, we found that although flexible working hours were more likely to be not available, job sharing, parental leave and working from home were more likely to be available in the large establishments.

On exploring the employee relationship with the managers we found the following: In large establishments employees were less likely to be asked their views on staffing issues, pay issues, and health and safety at work. The variables on employee manager relations such as how the worker is getting on with her/his job, his/her chances of promotion, training needs and pay are also examined in relation to the establishment size. Among these variables, only the question on how the employee is getting on with his/her job is negatively related to the establishment size. However, the promotion prospects, training needs and pay issues are more likely to be discussed routinely in larger establishments.

Employees are less satisfied with their jobs in larger establishments even after we control for the nature of the work structure. Introducing various control measures for work structure environment does not drive the effect of establishment size on various measures of job satisfaction to zero. This is contrary to the findings of Idson (1990). Idson found that lower levels of job satisfaction in larger establishments is due to their highly regimented environment. Whereas we found that lower levels of job satisfaction in larger establishments is not necessarily due to the higher levels of rigidity in the work structure. Employees are less satisfied with their jobs in larger establishments in the absence of control for the quality of employee-manager relationships. However, when control for employee manager relationships is introduced the effects of establishment size on various measures of job satisfaction disappeared completely.

The results in this paper support the following propositions. 1) There is greater rigidity in the structure of work environment in the larger establishments. However there is also evidence that the large establishments are making efforts to overcome the regimentation by providing job sharing, parental leave and working from home. 2) The employee manager relationships are less satisfactory in larger establishments. However, there is also evidence that large establishments are trying to compensate for their size by providing regular discussions of promotion possibilities, training needs and pay. 3) Observed lower levels of job satisfaction in larger establishments may not necessarily be due to greater regimentation in the structure of work environments. 4) Observed lower levels of job satisfaction in the larger establishments may be due to poor employee- manager relationships.

Table 1 : Maximum Likelihood Probit Estimates of the Structure of Work Environment

	<u>Some or a Lot of Influence Workers Have</u>					
	<u>About the Range of Tasks They Do in Their Job</u>		<u>About the Pace At Which They Work</u>		<u>About How They do Their Work</u>	
	<u>Coefficient</u>	<u>t-Ratio^a</u>	<u>Coefficient</u>	<u>t-Ratio^a</u>	<u>Coefficient</u>	<u>t-Ratio^a</u>
Log Establishment Size	-0.031	4.36	-0.017	2.30	-0.019	2.22
Male	-0.013	0.65	-0.047	2.25	-0.015	0.63
Age (x10 ⁻²)	-0.843	1.58	-1.188	3.46	-0.272	0.45
Age Square (x10 ⁻³)	0.169	2.59	0.284	4.27	0.081	1.07
<u>Level of Education:</u>						
Degree+Post Graduate	-0.127	3.81	-0.113	3.38	-0.080	2.01
A Level+O Level	-0.095	3.81	-0.049	1.94	-0.082	2.86
Married	-0.073	3.65	-0.042	2.06	-0.051	2.14
Health Problems	-0.167	4.54	-0.170	4.62	-0.188	4.56
<u>Race:</u>						
White	-0.081	1.47	-0.063	1.13	0.049	0.79
Black	0.098	1.09	-0.011	0.12	0.073	0.70
<u>Job Characteristics:</u>						
Log Weekly Income	0.284	11.92	0.198	8.23	0.316	11.38
Log Hours of Work	-0.062	2.09	-0.059	1.97	-0.120	3.46
Union Member	-0.248	13.10	-0.254	13.34	-0.222	9.89
<u>Occupation:</u>						
Managerial/Professional	0.461	14.94	0.215	6.92	0.458	12.56
Clerical	-0.018	0.77	0.083	3.45	0.148	5.60
<u>Gender Concentration:</u>						
Mostly Men (x10 ⁻²)	-0.689	0.30	1.138	0.59	3.267	1.20
<u>Industrial Composition:</u>						
Manufacturing	-0.023	0.80	0.016	0.54	-0.061	1.80
Electricity+Gas+Water	0.020	0.42	-0.026	0.56	-0.038	0.68
Construction	-0.013	0.30	-0.036	0.83	-0.066	1.22
Transportation	-0.276	7.29	0.225	5.92	-0.317	7.51
Financial Services	-0.178	6.45	-0.084	2.99	-0.153	4.68
Education Sector (x10 ⁻²)	0.112	0.04	-0.093	2.89	0.029	0.74
Health Sector	0.054	1.69	0.041	1.28	0.063	1.66
<u>Training:</u>						
Less Than 5 Days	0.106	5.40	0.080	4.02	0.071	3.11
5 Days or More	0.223	8.68	0.180	6.95	0.135	4.40
Constant	-0.588	4.52	0.149	1.13	-0.274	1.86
-Log Likelihood	14 891		14 572		10 089	
Chi-Squared	2 057		715		1 347	
Number of Observations	24 814		24 737		24 704	

Notes: a: Absolute value of the asymptotic t-ratio.

The critical values at 5 and 1 percent levels of significance are 1.65 and 1.99 respectively.

Table 2: Maximum Likelihood Probit Estimates of the Structure of Work: Flexibility of Hours, Days and Place of Work

	<u>If you Needed Would the Following be Available</u>							
	<u>Flexible Working Hours</u>		<u>Job Sharing</u>		<u>Parental Leave</u>		<u>Working from Home</u>	
	<u>Coefficient</u>	<u>t-Ratio^a</u>	<u>Coefficient</u>	<u>t-Ratio^a</u>	<u>Coefficient</u>	<u>t-Ratio^a</u>	<u>Coefficient</u>	<u>t-Ratio^a</u>
Log Establishment Size	-0.081	10.80	0.032	3.95	0.075	7.40	0.103	6.75
Male	0.256	11.73	-0.167	7.01	-0.245	7.17	-0.124	2.77
Age (x10 ⁻²)	-0.476	0.79	-0.391	0.60	0.689	0.79	0.037	2.52
Age Square (x10 ⁻³)	0.100	1.35	0.006	0.08	-0.134	1.24	-0.395	2.20
<u>Level of Education:</u>								
Degree + Postgraduate	-0.499	13.76	0.277	7.02	0.443	7.99	0.826	7.51
A level+O level	-0.334	11.19	0.235	7.30	0.299	6.52	0.576	5.49
Married	0.050	2.28	-0.048	2.00	-0.078	2.59	0.109	2.46
Health Problems	-0.759	1.86	0.077	1.74	0.030	0.53	-0.037	0.40
<u>Race:</u>								
White	-0.100	1.72	0.088	1.36	0.013	0.17	0.660	0.55
Black	-0.088	0.94	0.062	0.60	0.049	0.39	0.053	0.28
<u>Job Characteristics:</u>								
Log Weekly Income	-0.296	11.43	0.146	5.25	0.241	6.60	0.343	5.86
Log Hours of Work	0.299	9.32	-0.160	4.64	-0.256	5.76	-0.269	3.92
Union Member	-0.100	5.00	0.043	1.98	0.093	3.39	0.066	1.61
<u>Occupation:</u>								
Managerial/Professional	-0.353	10.19	0.176	4.74	0.149	8.02	0.686	6.10
Clerical	-0.307	10.83	0.133	4.37	0.451	10.27	0.595	5.67
<u>Gender Concentration:</u>								
Mostly Men	0.184	7.60	-0.074	2.80	-0.168	5.12	-0.233	4.65
<u>Industrial Composition:</u>								
Manufacturing	0.520	15.14	-0.225	6.16	-0.608	11.07	-0.772	7.23
Electricity+Gas+Water	0.074	1.62	0.044	0.88	-0.096	1.62	-0.194	2.26
Construction	0.297	6.08	-0.168	3.12	-0.263	3.71	-0.276	2.46
Transportation	0.262	5.97	-0.161	3.33	-0.207	3.32	-0.115	1.27
Financial Services	0.088	3.11	0.023	0.56	-0.074	2.02	-0.307	5.26
Education Sector	0.503	14.73	-0.140	3.82	-0.585	11.85	-0.594	8.34
Health Sector	0.191	5.80	-0.062	1.72	-0.198	4.53	-0.227	3.52
<u>Training:</u>								
Less than 5 Days	-0.207	9.46	0.170	7.10	0.175	5.53	0.110	2.45
5 Days or More	-0.304	11.31	0.205	7.00	0.238	6.32	0.233	4.03
Constant	2.092	14.38	-0.626	10.35	-2.739	13.10	-5.311	14.17
- Log Likelihood	12 608		10 214		5 951		2 364	
Chi-Squared (25)	2 942		803		1 252		802	
Number of Observations	24 585		24 585		24 585		24 586	

Notes: See Table 1.

**Table 3: Maximum Likelihood Probit Estimates of the Relationship with the Management I :
Workers' View**

Were You Frequently Asked Your Views on the Following

	<u>Staffing Issues</u>		<u>Pay Issues</u>		<u>Health and Safety at Work</u>	
	<u>Coefficient</u>	<u>t-Ratio^a</u>	<u>Coefficient</u>	<u>t-Ratio^a</u>	<u>Coefficient</u>	<u>t-Ratio^a</u>
Log Establishment Size	-0.081	7.95	-0.060	5.23	-0.026	3.40
Male	0.023	0.79	-0.031	0.96	0.113	5.09
Age (x10 ⁻²)	1.552	1.86	-2.950	3.34	-1.912	3.30
Age Square (x10 ⁻³)	-0.119	1.19	0.380	3.62	0.300	4.22
<u>Level of Education:</u>						
Degree+Post Graduate	-0.690	1.52	-0.049	0.98	-0.353	10.17
A Level+O Level	-0.056	1.46	-0.106	2.58	-0.299	8.67
Married	-0.044	1.54	-0.044	1.35	-0.052	2.36
Health Problems	-0.099	1.76	-0.004	0.06	0.020	0.50
<u>Race:</u>						
White	0.166	1.98	-0.003	0.03	0.010	0.18
Black	0.057	0.42	-0.129	0.84	0.151	1.56
<u>Job Characteristics:</u>						
Log Weekly Income	0.332	9.33	0.215	5.53	-0.056	2.17
Log Hours of Work	0.037	0.82	0.044	0.88	0.069	2.14
Union Member	-0.143	5.41	-0.209	6.87	-0.015	0.73
<u>Occupation:</u>						
Managerial/Professional	0.481	10.63	0.175	3.66	0.149	4.59
Clerical	0.053	1.32	-0.173	4.19	-0.085	3.23
<u>Gender Concentration:</u>						
Mostly Men (x10 ⁻²)	-0.181	5.55	-0.032	0.89	-0.034	1.36
<u>Industrial Composition:</u>						
Manufacturing	-0.121	2.84	0.058	1.32	0.117	3.79
Electricity+Gas+Water	-0.130	2.10	-0.091	1.23	0.344	7.43
Construction	-0.202	3.22	-0.083	1.24	0.238	5.38
Transportation	-0.025	0.46	0.016	0.27	-0.117	2.73
Financial Services	-0.204	5.29	0.060	1.41	-0.232	7.35
Education Sector (x10 ⁻²)	0.175	3.94	-0.251	4.62	-0.074	2.10
Health Sector	0.035	0.82	-0.053	1.05	0.228	6.92
<u>Training:</u>						
Less Than 5 Days	0.207	6.89	0.072	2.24	0.324	14.65
5 Days or More	0.370	10.54	0.198	5.10	0.553	20.42
Constant	-0.647	16.84	1.990	9.05	-0.454	3.18
-Log Likelihood	6 743		5 072		12 450	
Chi-Squared	1 489		504		1 152	
Number of Observations	24 400		24 355		24 579	

Notes: See Table 1.

Table 4: Maximum Likelihood Probit Estimates of the Relationship with the Management II: Workers' View

During the Last Twelve Months
Have You Discussed Any of the Following with Your Supervisors

	How Are You Getting on With Your Job		Your Chances of Promotion		Your Training Needs		Your Pay	
	Coefficient	t-Ratio ^a	Coefficient	t-Ratio ^a	Coefficient	t-Ratio ^a	Coefficient	t-Ratio ^a
Log Establishment Size	-0.048	6.69	0.016	2.17	0.022	2.68	0.028	2.82
Male	0.086	4.17	-0.100	4.64	-0.024	1.04	0.023	0.82
Age (x10 ⁻²)	0.615	1.14	-0.578	1.04	0.500	0.76	0.948	1.13
Age Square (x10 ⁻³)	0.073	1.10	0.059	0.87	-0.016	2.00	-0.033	3.14
<u>Level of Education:</u>								
Degree + Postgraduate	-0.166	5.08	0.075	2.22	0.184	4.69	0.094	1.91
A level+O level	-0.178	7.11	0.106	4.02	0.194	6.08	0.105	2.50
Married	0.004	0.22	0.014	0.69	0.004	0.15	-0.176	0.63
Health Problems	-0.102	2.71	0.124	3.28	0.008	0.19	-0.486	0.83
<u>Race:</u>								
White	-0.100	1.84	0.079	1.40	-0.100	1.66	0.226	2.69
Black	0.018	0.20	0.118	1.29	-0.143	1.41	-0.521	0.38
<u>Job Characteristics:</u>								
Log Weekly Income	-0.210	8.80	0.072	2.93	0.118	4.18	0.219	6.09
Log Hours of Work	-0.062	2.07	-0.040	1.30	0.139	3.73	-0.229	4.58
Union Member	0.101	5.33	0.090	4.45	-0.550	2.30	-0.292	10.74
<u>Occupation:</u>								
Managerial/Professional	-0.373	12.18	0.120	3.78	0.180	4.99	0.331	7.56
Clerical	-0.210	8.73	0.145	5.73	0.134	4.53	0.085	2.20
<u>Gender Concentration:</u>								
Mostly Men	0.100	4.12	0.016	2.17	-0.052	2.01	-0.050	1.62
<u>Industrial Composition:</u>								
Manufacturing	0.150	5.10	-0.056	2.37	-0.041	1.23	0.015	0.38
Electricity+Gas+Water	0.702	1.53	-0.047	1.04	0.133	2.62	0.119	2.09
Construction	0.211	4.98	-0.099	2.22	-0.142	2.79	-0.830	1.37
Transportation	0.151	3.89	-0.183	4.47	-0.031	0.68	0.009	0.17
Financial Services	-0.160	5.69	-0.085	3.05	0.086	2.88	0.206	5.93
Education Sector	0.423	13.15	-0.135	4.13	-0.286	7.28	-0.372	7.13
Health Sector	0.169	5.38	0.078	2.47	-0.229	6.05	-0.260	5.25
<u>Training:</u>								
Less than 5 Days	-0.593	30.45	0.343	16.58	0.352	14.51	0.341	11.08
5 Days or More	-0.910	35.46	0.375	14.55	0.530	18.50	0.514	14.76
Constant	1.815	13.65	-1.211	8.90	-2.500	15.42	-3.980	17.85
- Log Likelihood	14 859		14 103		10 533		6 752	
Chi-Squared (25)	4 701		902		1 341		1 823	
Number of Observations	24 894		24 894		24 894		24 894	

Notes: See Table 1.

Table 5: Variable Means for Job Satisfaction, Establishment Size and Managerial Relations (%)

	<u>Satisfaction with Influence Over Job</u>		<u>Satisfaction with Amount of Pay</u>		<u>Satisfaction with Sense of Achievement</u>		<u>Satisfaction with Respect from Supervisors</u>	
	<u>Satisfied</u>	<u>Very Satisfied</u>	<u>Satisfied</u>	<u>Very Satisfied</u>	<u>Satisfied</u>	<u>Very Satisfied</u>	<u>Satisfied</u>	<u>Very Satisfied</u>
<u>Establishment Size:</u>								
Less than 25 employees	49.9	14.4	33.1	3.3	51.9	18.1	44.4	19.0
25-99 employees	47.9	11.8	31.9	3.4	49.9	16.0	44.5	15.5
100-199 employees	46.1	11.9	31.1	3.7	47.9	14.0	43.6	12.6
200-499 employees	46.5	11.2	33.4	3.3	47.7	13.7	43.7	12.6
500 or more employees	47.0	10.4	32.7	3.7	48.3	14.1	43.3	13.3
<u>Relations with Supervisors/Line Managers:</u>								
During the Past Year Have You Discussed the Following with Your Managers:								
How You are Getting on with your job	43.4	10.9	30.4	3.4	46.2	13.7	39.8	12.1
Your Chances of Promotion	49.3	11.0	34.6	3.5	50.8	15.8	47.8	14.9
Your Training Needs	51.4	13.1	33.6	3.5	52.4	16.4	48.9	16.7
Your Pay	53.8	15.1	32.4	3.6	52.5	18.4	48.0	19.4
Were You Frequently Asked Your Views on the Following?								
Staffing Issues	54.8	26.9	44.5	8.3	51.6	28.2	52.2	28.7
Pay Issues	52.6	29.5	47.4	9.9	50.4	29.4	51.1	29.5
Health/Safety at Work	55.2	20.1	38.9	6.6	52.2	25.8	50.7	25.4
Would You Say that the Managers Here are very Good at								
Treating Employees Fairly	54.0	30.6	45.5	10.6	48.5	37.8	42.3	49.4
How would You Describe the Relations Between Managers and Employees Here?								
Very Good	55.5	28.2	44.1	9.1	52.2	34.9	47.0	45.7

Table 6: Maximum Likelihood Ordered Probit Estimates of Job Satisfaction when Work Structure and Relations with Managers Variables are not Included

	<u>Satisfaction with Influence Over Job</u>		<u>Satisfaction with Amount of Pay</u>		<u>Satisfaction with Sense of Achievement</u>		<u>Satisfaction with Respect from Superv.</u>	
	<u>Coefficient</u>	<u>t-Ratio^a</u>	<u>Coefficient</u>	<u>t-Ratio^a</u>	<u>Coefficient</u>	<u>t-Ratio^a</u>	<u>Coefficient</u>	<u>t-Ratio^a</u>
Log Estab. Size(x10 ⁻²)	-2.537	4.37	-1.614	2.84	-3.648	6.31	-2.366	4.07
Male	-0.077	4.66	-0.250	15.20	-0.105	6.31	-0.129	7.80
Age	-0.031	7.02	-0.040	8.37	-0.021	4.73	-0.037	8.47
Age Square (x10 ⁻³)	0.448	8.29	0.478	9.12	0.359	6.66	0.542	10.32
<u>Level of Education:</u>								
Degree + Postgraduate	-0.275	10.63	-0.204	7.85	-0.300	11.40	-0.205	7.86
A level+O level	-0.160	7.93	-0.066	3.32	-0.188	9.21	-0.131	6.59
Married	-0.088	5.41	-0.048	2.95	-0.075	4.63	-0.029	1.76
Health Problems	-0.216	7.29	-0.150	5.05	-0.169	5.87	-0.156	5.32
<u>Race:</u>								
White	-0.150	1.19	0.142	3.32	0.044	1.01	-0.038	0.87
Black	-0.047	0.70	-0.153	2.06	-0.068	0.96	-0.117	1.61
<u>Job Characteristics:</u>								
Log Weekly Income	0.124	6.56	0.615	37.07	0.021	1.08	0.037	1.95
Log Hours of Work	-0.150	6.30	-0.845	44.79	-0.040	1.62	-0.175	7.49
Union Member	-0.271	17.95	-0.171	11.23	-0.193	12.65	-0.241	16.01
<u>Occupation:</u>								
Managerial/Professional	0.244	9.89	-0.077	3.14	0.326	12.92	0.223	9.01
Clerical	0.031	1.54	-0.187	9.57	0.134	6.72	0.065	3.37
<u>Gender Concentration:</u>								
Mostly Men	0.010	0.56	-0.031	1.67	0.073	3.83	-0.027	1.41
<u>Industrial Composition:</u>								
Manufacturing	0.013	0.56	0.018	0.79	-0.016	0.69	-0.036	1.52
Electricity+Gas+Water	0.043	1.18	0.298	8.35	-0.026	0.72	0.039	1.04
Construction	0.075	2.14	0.036	1.01	0.042	1.21	0.048	1.38
Transportation	-0.173	5.71	-0.085	2.71	-0.134	4.78	-0.115	3.68
Financial Services	-0.019	0.83	-0.008	0.36	-0.038	1.65	0.033	1.44
Education Sector	0.028	1.09	-0.124	4.80	0.245	11.36	0.161	6.24
Health Sector	-0.046	1.77	-0.135	5.41	0.191	7.44	-0.012	0.48
<u>Training:</u>								
Less Than 5 Days	0.085	5.32	0.108	6.72	0.132	8.17	0.174	10.95
5 Days or More	0.259	12.52	0.213	10.47	0.365	17.73	0.395	19.05

	<u>Satisfaction with Influence Over Job</u>		<u>Satisfaction with Amount of Pay</u>		<u>Satisfaction with Sense of Achievement</u>		<u>Satisfaction with Respect from Superv.</u>	
	<u>Coefficient</u>	<u>t-Ratio^a</u>	<u>Coefficient</u>	<u>t-Ratio^a</u>	<u>Coefficient</u>	<u>t-Ratio^a</u>	<u>Coefficient</u>	<u>t-Ratio^a</u>
Constant	2.570	23.10	1.782	17.26	2.101	19.00	2.577	24.16
Threshold Parameters:								
M (1)	0.880	58.01	0.973	94.12	0.694	53.96	0.600	59.04
M (2)	1.670	100.35	1.607	135.73	1.396	95.13	1.226	101.11
M (3)	3.133	165.38	3.142	169.50	2.853	166.71	2.563	170.69
- Log Likelihood	31 928		34 003		31 806		33 807	
Chi-Squared (25)	1 175		2 299		1 614		1 540	
Number of Observations	24 575		24 480		24 364		24 208	

Notes: See Table 1.

Table 7: Maximum Likelihood Ordered Probit Estimates of Job Satisfaction when Work Structure Variables are Included

	<u>Satisfaction with Influence Over Job</u>		<u>Satisfaction with Amount of Pay</u>		<u>Satisfaction with Sense of Achievement</u>		<u>Satisfaction with Respect from Superv.</u>	
	<u>Coefficient</u>	<u>t-Ratio^a</u>	<u>Coefficient</u>	<u>t-Ratio^a</u>	<u>Coefficient</u>	<u>t-Ratio^a</u>	<u>Coefficient</u>	<u>t-Ratio^a</u>
Log Estab. Size(x10 ⁻²)	-2.030	3.34	-1.676	2.88	-3.330	5.61	-2.455	4.13
Male	-0.068	3.95	-0.244	14.54	-0.096	5.62	-0.109	6.48
Age	-0.031	6.69	-0.342	7.76	-0.019	4.26	-0.036	8.15
Age Square (x10 ⁻³)	0.428	7.58	0.446	8.31	0.331	6.00	0.527	9.85
<u>Level of Education:</u>								
Degree+Postgraduate	-0.265	9.71	-0.199	7.45	-0.277	10.20	-0.204	7.65
A Level + O Level	-0.144	6.76	-0.638	3.11	-0.171	8.06	-0.123	6.04
Married	-0.078	4.58	-0.047	2.84	-0.071	4.27	-0.018	1.07
Health Problems	-0.154	5.01	-0.120	3.96	-0.119	4.00	-0.107	3.56
<u>Race:</u>								
White	-0.025	0.58	0.137	3.14	0.056	1.26	-0.036	0.81
Black	-0.066	0.92	-0.171	2.25	-0.066	0.89	-0.133	0.79
<u>Job Characteristics:</u>								
Log Weekly Income	-0.013	0.63	0.585	34.60	-0.067	3.34	-0.057	2.89
Log Hours of Work	-0.124	4.96	-0.848	43.73	-0.011	0.45	-0.151	6.29
Union Member	-0.200	12.41	-0.136	8.70	-0.140	8.89	-0.194	12.46
<u>Occupation:</u>								
Managerial/Professional	0.048	1.97	-0.143	5.72	0.224	8.64	0.107	4.22
Clerical	0.634	1.68	-0.207	10.30	0.124	6.02	0.035	1.75
<u>Gender Concentration:</u>								
Mostly Men	0.013	0.69	-0.029	1.52	0.074	3.83	-0.023	1.21
<u>Industrial Composition:</u>								
Manufacturing	0.048	1.97	0.034	1.42	-0.002	0.08	0.207	0.01
Electricity+Gas+Water	0.063	1.68	0.308	8.53	-0.023	0.62	0.057	1.48
Construction	0.106	2.86	0.053	1.47	0.047	1.32	0.070	1.96
Transportation	-0.025	0.77	-0.038	1.18	-0.053	1.62	-0.024	0.74
Financial Services	0.055	2.36	0.098	0.42	0.001	0.03	0.079	3.33
Education Sector	0.050	1.84	-0.117	4.38	0.307	11.42	0.200	7.56
Health Sector	-0.075	2.85	-0.144	5.68	0.189	7.18	-0.020	0.78
<u>Training:</u>								
Less Than 5 Days	0.048	2.88	0.097	5.91	0.113	6.81	0.145	8.97
5 Days or More	0.187	8.74	0.182	8.79	0.324	15.43	0.341	16.21
<u>Work Structure Variables:</u>								
1) <u>The Workers have some or a Lot Influence Over:</u>								
The Range of Tasks They								
Do In Their Job	0.820	44.97	0.208	11.99	0.451	26.00	0.406	23.42
Pace at which They Work	0.403	21.63	0.181	10.02	0.172	9.63	0.197	10.93
How They do Their Work	0.439	18.28	0.094	4.09	0.301	13.32	0.322	14.23

	<u>Satisfaction with Influence Over Job</u>		<u>Satisfaction with Amount of Pay</u>		<u>Satisfaction with Sense of Achievement</u>		<u>Satisfaction with Respect from Superv.</u>	
	<u>Coefficient</u>	<u>t-Ratio^a</u>	<u>Coefficient</u>	<u>t-Ratio^a</u>	<u>Coefficient</u>	<u>t-Ratio^a</u>	<u>Coefficient</u>	<u>t-Ratio^a</u>
<u>2) If Needed Would the Following be Available:</u>								
Flexible Working Hours	-0.242	2.49	-0.185	1.81	-0.191	2.18	-0.313	2.91
Job Sharing	-0.087	0.89	-0.100	0.98	-0.073	0.83	-0.113	1.04
Parental leave	-0.081	0.81	-0.065	0.62	-0.184	2.04	-0.075	0.69
Working From Home	-0.573	0.55	-0.148	1.35	-0.938	0.96	-0.062	0.53
Constant	2.550	16.64	1.794	12.02	2.020	13.95	2.660	17.11
<u>Threshold Parameters:</u>								
M (1)	1.029	58.05	0.989	92.43	0.739	53.18	0.639	58.70
M (2)	1.975	100.70	1.633	133.30	1.482	93.32	1.301	100.45
M (3)	3.639	163.01	3.191	165.58	3.000	162.15	2.700	167.97
- Log Likelihood	27 715		32 498		29 861		31 976	
Chi-Squared (32)	7 122		2 863		3 576		3 642	
Likelihood Ratio Test	1 882		1 692		1 460		1 148	
Number of Observations	23 634		23 634		23 634		23 634	

Notes: See Table 1.

The likelihood ratio test tests for the joint significance of the work structure variables included. In each case, the statistic is distributed as a chi-square with seven degrees of freedom and is significant at the one percent level. The null hypothesis that the work structure variables are jointly zero is rejected in each case.

Table 8 : Maximum Likelihood Ordered Probit Estimates of Job Satisfaction when Managerial Relations Variables are Included

	Satisfaction with <u>Influence Over Job</u>		Satisfaction with Amount of Pay		Satisfaction with Sense of Achievement		Satisfaction with Respect from Superv.	
	<u>Coefficient</u>	<u>t-Ratio^a</u>	<u>Coefficient</u>	<u>t-Ratio^a</u>	<u>Coefficient</u>	<u>t-Ratio^a</u>	<u>Coefficient</u>	<u>t-Ratio^a</u>
Log Estab. Size ($\times 10^{-2}$)	-0.146	0.24	0.474	0.80	-0.016	2.75	0.900	1.46
Male	-0.102	5.91	-0.277	16.23	-0.122	7.15	-0.167	9.64
Age	-0.024	5.13	-0.030	6.55	-0.011	2.48	-0.024	5.34
Age Square ($\times 10^{-3}$)	0.356	6.24	0.383	7.00	0.242	4.37	0.410	7.35
<u>Level of Education:</u>								
Degree+Postgraduate	-0.229	8.39	-0.159	5.87	-0.258	9.51	-0.147	5.35
A Level+0 Level	-0.132	6.16	-0.029	1.41	-0.158	7.46	-0.100	4.68
Married	-0.887	5.23	-0.047	2.78	-0.072	4.33	-0.026	1.50
Health Problems	-0.219	7.06	-0.148	4.83	-0.173	5.84	-0.158	5.17
<u>Race:</u>								
White	-0.063	1.43	0.154	3.51	0.029	0.66	-0.056	1.22
Black	-0.073	1.03	-0.163	2.12	-0.077	1.05	-0.124	1.61
<u>Job Characteristics:</u>								
Log Weekly Income	0.143	7.11	0.665	38.06	0.035	1.75	0.051	5.52
Log Hours of Work	-0.155	6.10	-0.875	45.07	-0.043	1.71	-0.191	7.62
Union Member	-0.239	15.07	-0.146	9.23	-0.152	9.69	-0.190	11.83
<u>Occupation:</u>								
Managerial/Professional	0.176	6.77	-0.116	4.56	0.278	10.72	0.150	5.72
Clerical	0.036	1.72	-0.193	9.46	0.144	7.02	0.079	3.86
<u>Gender Concentration:</u>								
Mostly Men	0.023	1.21	-0.032	1.65	0.081	4.18	-0.015	0.78
<u>Industrial Composition:</u>								
Manufacturing	0.035	1.43	0.044	1.81	0.008	0.31	0.015	0.60
Electricity+Gas+Water	0.053	1.41	0.327	8.93	-0.030	0.79	0.061	1.54
Construction	0.068	1.84	0.041	1.13	0.336	0.94	0.050	1.36
Transportation	-0.145	4.60	-0.600	1.75	-0.109	3.46	-0.075	2.33
Financial Services	-0.007	0.29	0.012	0.49	-0.030	1.29	0.037	1.56
Education Sector	0.008	0.31	-0.171	6.34	0.293	10.95	0.153	5.57
Health Sector	-0.081	2.97	-0.183	7.05	0.173	6.54	-0.038	1.41
<u>Training:</u>								
Less Than 5 Days	0.019	1.14	0.086	5.08	0.067	3.95	0.061	3.54
5 Days or More	0.274	9.42	0.144	6.60	0.222	10.20	0.175	7.83
<u>Relations with Managers:</u>								
Were You Frequently Asked Your Views on the Following:								
Staffing Issues	0.274	9.42	0.143	5.10	0.104	3.62	0.220	7.41
Pay Issues	0.240	6.68	0.275	8.00	0.133	3.81	0.119	3.31
Health/Safety at Work	0.261	13.36	0.146	7.92	0.271	14.18	0.287	14.73

	<u>Satisfaction with Influence Over Job</u>		<u>Satisfaction with Amount of Pay</u>		<u>Satisfaction with Sense of Achievement</u>		<u>Satisfaction with Respect from Superv.</u>	
	<u>Coefficient</u>	<u>t-Ratio^a</u>	<u>Coefficient</u>	<u>t-Ratio^a</u>	<u>Coefficient</u>	<u>t-Ratio^a</u>	<u>Coefficient</u>	<u>t-Ratio^a</u>

During the Past Year Have You Discussed the Following with Your Manager:

How You are Getting on with Your Job	0.169	0.64	-0.008	0.02	-0.326	1.17	0.233	0.54
Your Chances of Promotion	0.246	0.94	0.040	0.12	-0.234	0.84	0.467	1.08
Your Training Needs	0.295	1.13	-0.039	0.14	-0.192	0.69	0.528	1.22
Your Pay	0.303	1.16	-0.190	0.55	-0.145	0.52	0.550	1.27

Would You Say that the Managers are very Good at

Treating Employees Fairly	0.420	15.35	0.364	14.09	0.435	16.41	0.716	25.32
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How Would You Describe The Relations Between Managers and Employees Here

Very Good	0.488	18.39	0.331	13.56	0.474	18.41	0.836	30.32
Constant	1.950	6.79	1.325	3.68	1.932	6.43	1.710	3.83

Threshold Parameters:

M (1)	0.908	56.69	1.000	92.28	0.709	53.74	0.635	
58.03								
M (2)	1.737	98.34	1.654	132.92	1.442	95.39	1.317	100.14
M (3)	3.301	161.60	3.269	159.68	2.981	166.00	2.866	167.14
- Log Likelihood	28 632		31 396		30 027		29 588	
Chi-Squared (34)	3 383		3 539		3 539		5 966	
Likelihood Ratio Test	3 350		2 742		1 856		2 878	
Number of Observations	22 900		23 109		23 706		22 769	

Notes: See Table 1.

The likelihood ratio test tests for the joint significance of the variables describing employee-manager relationships. In each case, the statistic is distributed as a chi-square with nine degrees of freedom and is significant at the one percent level. The null hypothesis that the variables describing employee-manager relationships are jointly zero is rejected in each case.

References:

- Brown C and J Medoff (1989) 'The employers size –wage effect' **Journal of Political Economy**, 97, pp. 1027-1059.
- Clark, A. (1996): 'Job Satisfaction in Britain' **British Journal of Industrial Relations**, 34:2 June, pp.189-217.
- Dunn, L. F. (1980): 'The Effects of Firm and Plant Size on Employee Well-Being', in **The Economics of Firm Size, Market Structure and Social Performance** (Ed.) J. J. Siegfried, Federal Trade Commission, Washington DC.
- Dunn, L. F. (1986): 'Work Disutility and Compensating Differentials: Estimation of Factors in The Link Between Wages and Firm Size', **Review of Economics and Statistics**, 68, pp. 67-73.
- Gazioglu, S. and A. Tansel (2002): 'Job Satisfaction in Britain: Individual and Job Related Factors' mimeograph, Department of Economics, Middle East Technical University, Ankara.
- Idson, T. L. (1990): 'Establishment size, job satisfaction and the structure of work' **Applied Economics**, 22, pp.1007-1018.
- Kwoka, J. E. Jr (1980): Establishment Size, Wages, and Job Satisfaction: the Tradeoffs, in **The Economics of Firm Size, Market Structure and Social Performance**, (Ed.) J. J. Siegfried, Federal Trade Commission, Washington, DC.
- Oi, W. (1983): 'Heterogeneous Firms and the Organization of Production' **Economics of Inquiry**, 70, pp.538-55.
- Scherer, F. M. (1976): Industrial Structure, Scale Economies and Worker Alienation, in **Essays in Honor of Joe S. Bain**, (Eds.) R. T Masson and P. D. Qualls, Ballinger.
- Stafford, F. P. (1980): 'Firm Size, Workplace Public Goods, and Worker Welfare', in **The Economics of Firm Size, Market Structure and Social Performance** (Ed.) J. J. Siegfried, Federal Trade Commission, Washington DC.