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Peer salaries and employee satisfaction in the workplace

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Peer Salaries and Employee Satisfaction in the Workplace

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June 2012

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ABSTRACT

Peer Salaries and Employee Satisfaction in the Workplace

We explore the relationship between reported job satisfaction and own wage, relative wage and average comparison group wage; allowing for asymmetry in these responses across genders. We find that the choice of relevant comparison group is affected by gender in Britain; men display behaviour characteristic of competitiveness whilst women do not.

JEL Classification: J3, J7, J28

Keywords: job satisfaction, earnings, gender, segregation, workplace

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1. Introduction.

A substantial and persistent earnings gap exists between male and female employees in Britain (see Table 1). Despite this sizable earnings gap, British women typically report higher levels of job satisfaction than do men.

Table 1. Employee earnings by gender, Britain 2004.

	Male	Female	All
Average hourly wages	£10.55	£8.76	£9.70
Average log hourly wages	2.243	2.056	2.154
Job satisfaction (index 0-6)	3.318	3.606	3.453

Source: WERS 2004.

This paper considers this apparent contradiction by asking whether the higher job satisfaction reported by female employees is due to their being less concerned by the level of co-worker wages.

Employees appear to have a good understanding of their wage relative to their fellow employees, male or female, (Hampton and Heywood, 1993). This is not to say that they care equally about the gap between their own wage and the salaries of all other employees. It has long been recognised that workers compare their wages to other workers they consider to be similar to themselves by custom (Mill, 1867:236; Phelps Brown, 1979:134). Recently, Card et al (2012) have shown that the response of an employee to their relative wage is perhaps not obvious *a priori*. Workers may care about the absolute size of the gap between their own wage and the comparison group (Phelps Brown, 1979:141). Or they may distinguish between an increase in their own wage and a reduction in the average wage in the comparison group (Easterlin, 1995:36-37). Furthermore, the behavioural responses are not clearly established in the literature. Card et al (2012) propose a comparison between two approaches as between a model of relative utility where an employee may be dissatisfied if their wage is lower than other workers (see also Zizzo and Oswald, 2001) and a model of co-worker wage as a signal of future wages (see also Clark et al, 2009). Employees may also react asymmetrically to co-worker wages depending on whether they are being paid relatively higher or lower than their comparison group (Duesenberry, 1949; Clark et al, 2009; Ferrer-i-Carbonell, 2005).

This paper explores gender differences in the relationship between job satisfaction and relative wages amongst co-workers at the establishment level using linked employee and workplace data for Britain (WERS04). In particular, we address the possibility that that the relevant comparison group for individual workers is affected by gender.

2. Data and methodology

Following Clark and Senik (2010) we model job satisfaction as:

$$S_i = S_i(W_i, W_i - \bar{W}_i, X_i, \dots) \quad (1)$$

Where S_i is the job satisfaction of worker i ; W_i is the wage of that worker; \bar{W}_i is the average wage of their reference group and X_i is a vector of observable employee and workplace characteristics correlated with job satisfaction.

The matched employee-workplace data used in this study are drawn from the British Workplace Employee Relations Survey 2004 (WERS04). WERS04 is a stratified random sample of workplaces with 5 or more employees; larger workplaces and some industries are over-represented. The data have been weighted throughout the paper to allow for the (stratified and clustered) survey design and thus represent the sampling population.

An aggregate measure of job satisfaction is calculated from six satisfaction measures for the individual employee. These measures are satisfaction with: influence over job; sense of achievement; scope for using own initiative; pay; job security; and work. In each case a binary measure is constructed for positive responses ('satisfied' or 'very satisfied') and then these binary measures are summed to form the aggregate scaled job satisfaction index measure taking values from 0 to 6.

The employee characteristics included as determinants of job satisfaction are human capital related characteristics; demographic variables; and individual job characteristics. Workplace characteristics are physical and market conditions at the

workplace including measures of high performance workplace practices (Lynch 2012).¹

3. Estimation and results

The model for the scaled measure of job satisfaction is estimated using the ordered probit estimation method. It is assumed that the measured satisfaction reflects a latent welfare variable (s^*) dependent on observed characteristics (Z), which includes wage measures W and control variables X , and an unobserved component (ε) for employee i in workplace k .

$$s_{ik}^* = \beta Z_{ik} + \varepsilon_{ik} \quad (2)$$

where $S_i = \lambda(s_{ik}^*)$ is a step function taking the category values 0-6 for job satisfaction according to s_{ik}^* crossing a set of threshold levels.

We are interested in the impact of alternative measures of wage relativity on job satisfaction for different comparison groups: the workplace average wage; and separately, the workplace average male and female wages. We begin with the individuals' own wage relative to the comparison group average: the *relative wage* ($= \log(W_i) - \log(\text{workplace comparison group average})$) as part of the model for job satisfaction discussed above. The results for relative wages (Table 2) reveal that employees have higher job satisfaction levels if their relative wage is above the workplace comparison group average (see panel 1 of Table 2). This is true for both males and females, although male job satisfaction is substantially more sensitive (the effect is almost twice as large) to relative wages than is female job satisfaction.

Next, the restriction that the own and the relative wage measure have an equal and opposite effect is removed (see panel 2). These results suggest that employees' job satisfaction is raised by increases in their own wage level (especially for males) and is significantly affected by an average comparison wage measure in their workplace, be it the average of male or female or all employees. However, we find a significant asymmetric comparison effect, especially for women.

¹ Variable definitions and full results are provided in the Online Appendix.

We examine the possibility that employees respond differently to their wage being relatively higher or relatively lower than the comparison group in panel 3. Both male and female employees show a positive relationship between reported job satisfaction and their own wage. These estimates are significant and positive, and are not significantly different between the two genders. However, the results show that male employees also gain satisfaction from having a wage rate higher than the average for the workplace comparison group: more so if the comparison group is the males in the workplace (but not significantly so). In contrast, the reported job satisfaction of female employees is not significantly related to the average wages of their workplace co-workers, male or female.

Our results contrast in terms of relative significance with those of Card et al (2012) who find that job satisfaction is lower for those below median earners whilst those above the median show no higher satisfaction. Card et al (2012) do not report any differences in responses between males and females. Clark et al (2009) examine job satisfaction in Danish workplaces and report results that contrast with ours and Card et al (2012). Whilst they find that higher wages raises job satisfaction for all workers, they find that below median wage workers have higher satisfaction if they work in higher wage establishments. They show a somewhat less significant effect for females than males.

Our results show a clearly significant difference in the response of males and females to earnings comparisons. This chimes with studies that examine broader income comparisons, for instance with friends and neighbours. Mayraz et al (2010) find substantial gender differences with income comparisons being much better predictors of well-being in males than in females.

4. Conclusions

Relative earnings is found to be an important determinant of job satisfaction for men; men care about their own wage level and the higher their wage is above the average wage (especially of other males) in their workplace. In contrast, women appear to be indifferent to the average wages of other men or women in their workplace. Their job

satisfaction is sensitive only to their own wage level. Our evidence favours the relative utility model over a signalling explanation.

Our results suggest that the large earnings gap between men and women in British workplaces is not associated with lower job satisfaction levels for women whilst it is positively associated with higher job satisfaction levels for males. Consequently, it may be that little pressure is being exerted by either male or female employees to have the gender earnings gap reduced within their workplaces.

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Table 2. Job satisfaction and wage relativity.

	all		males		females	
	coeff	s.error	coeff	s.error	coeff	s.error
relative to average workplace wage	0.258	0.032	0.387	0.047	0.187	0.043
relative to average male workplace wage	0.246	0.032	0.359	0.047	0.191	0.041
relative to average female workplace wage	0.222	0.034	0.326	0.051	0.167	0.042
own wage	0.329	0.033	0.439	0.048	0.280	0.045
average workplace wage	0.031	0.072	-0.113	0.099	0.111	0.086
own wage	0.336	0.033	0.431	0.048	0.295	0.045
average male workplace wage	-0.012	0.063	-0.063	0.091	-0.002	0.071
own wage	0.325	0.033	0.424	0.048	0.279	0.045
average female workplace wage	0.062	0.071	-0.041	0.103	0.116	0.078
own wage	0.341	0.074	0.315	0.098	0.396	0.091
above average workplace wage	0.190	0.094	0.457	0.123	-0.161	0.139
below average workplace wage	-0.115	0.080	-0.070	0.114	-0.097	0.093
own wage	0.303	0.067	0.364	0.092	0.290	0.079
above average male workplace wage	0.280	0.093	0.416	0.124	0.033	0.140
below average male workplace wage	-0.066	0.069	-0.103	0.104	-0.004	0.076
own wage	0.377	0.075	0.389	0.106	0.397	0.085
above average female workplace wage	0.092	0.097	0.275	0.133	-0.132	0.121
below average female workplace wage	-0.149	0.078	-0.156	0.121	-0.111	0.087
number observations		17810		8606		9183

Source: WERS 2004. The models include the full set of explanatory variables discussed above: individual characteristics; occupations; job characteristics; industry; workplace characteristics; regions; and measures of gender segregation at the workplace and the occupational level. (Full results are provided in the Online Appendix.) Italics significant at the 95% or bold 99% confidence level or above.

Online Appendix for
Peer salaries and employee satisfaction in the workplace.

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Appendix Table A1. Variable definitions.

Variable name	Variable definition
job satisfaction index	Index of six job satisfaction measures for the individual employee: satisfaction with influence over job; satisfaction with pay; satisfaction with sense of achievement; satisfaction with scope for using own initiative; satisfaction with job security; satisfaction with work itself.
employee measures;	
log hourly pay	The natural log of average hourly pay
age	Age
training	Days of employer provided training in previous year
education measures;	
other	Has other academic qualifications but doesn't have a listed recognised qualification
none	Doesn't have a recognised academic qualification
minimal	Education 'none' or 'other' above.
cse25	Has GCSE grades D-G; CSE grades 2-5 SCE; O grades D-; SCE Standard grades 4-7
cse1	Has GCSE grades A-C; GCE O-level passes; CSE grade 1 SCE; O grades A-C; or SCE Standard 1-3
gceae	Has GCE A-level grades A-E; 1-2 SCE; Higher grades A-C, AS levels
gce2ae	Has 2 or more GCE; A-levels grades A-E; 3 or more SCE; or Higher grades A-C
degree	Has a first degree, eg BSc, BA, HND, HNC Ma at first degree level
postgraduate	Has a higher degree, eg MSc, MA, PGCE, PhD
female	Female
child 0-18	Has a dependent child aged below 18
child 0-4	Youngest dependent child aged 0-4
child 5-11	Youngest dependent child aged 5-11
child 12-18	Youngest dependent child aged 12-18
married	Married or living with a partner
disabled	Has a long term (>1 year) illness/disability
ethnic	Employee considers they are white and black Caribbean; white and black African; white and Asian; any other mixed background; Indian; Pakistani; Bangladeshi; any other Asian background; Caribbean; African; any other black background; Chinese; or other ethnic group.
fixed contract	Employed on a fixed term contract.
hours	Usual hours worked per week (includes over time)
standard hours	Usual hours worked per week minus over time
overtime hours	Usual overtime hours per Week
part time	Working part time, if usual working hours is less than 30 per week
tenure	Years at this workplace
union	Employee is a current trade union member
occupation categories;	
managerial	Managerial
professional	Professional
technical	Technical
clerical	Clerical
craft	Craft service
personal	Personal service
sales	Sales and customer services
operative	Operative and assembly workers
unskilled	Unskilled

Variable name	Variable definition
industry categories;	
manufacturing	manufacturing
utilities	electricity, gas, and water supply
construction	construction
whole/retail	Wholesale and retail
hotels	hotels and restaurants
transport	transport and communication
financial services	financial services
other business	other business services
public admin	public administration
education	education
health	health and social work
other community	other community services
workplace measures;	
workplace age	Establishment age
workplace size	Total number of employees at the workplace
multi site	Firm has multiple UK work sites
foreign owned	Foreign-controlled
increasing market	Market for workplace main product or service is growing
family friendly index	Index of Six Family Friendly Policies: paternity leave; maternity leave; home working; job sharing; child care; paid leave.
paternity leave	If employees on paternity leave receives the normal, full rate of pay
maternity leave	If employees on maternity leave receives the normal, full rate of pay
home working	If employees can work at home
job sharing	If a job sharing scheme exists in the workplace
child care	If a workplace nursery or child care subsidy is available at the workplace
employee interaction index	Index of five employee-employer interaction measures at the workplace: employee has a lot of discretion over work; quality circles exists; team working exists; employees consulted over targets; employee briefing system exists
IR index	Index of three industrial relations measures at the workplace: union membership presence; human resources representative; collective grievance procedure present
equal opportunities	Workplace has a formal written equal opportunity policy
relative female workplace	Percentage of the workplace employees who are female
relative female occupation	Percentage of the occupation who are female
Regions;	
north east of England	north east of England
north west of England	north west of England
Yorkshire & Humberside	Yorkshire & the Humberside
east midlands of England	east midlands of England
west midlands of England	west midlands of England
east of England	east of England
London	London
south east of England	south east of England
south west of England	south west of England
Scotland	Scotland
Wales	Wales

Source: WERS 2004.

Table A2. Summary statistics.

	all		male		female	
	mean	s.error	mean	s.error	mean	s.error
average hourly pay (£)	9.70	0.097	10.55	0.129	8.76	0.096
log average hourly pay	2.154	0.010	2.243	0.012	2.056	0.010
job satisfaction (index 0-6)	3.453	0.024	3.318	0.033	3.606	0.028
age	40.77	0.166	41.30	0.200	40.15	0.215
training	2.539	0.045	2.544	0.060	2.536	0.053
education:						
minimal	0.231	0.005	0.257	0.007	0.203	0.006
cse25	0.096	0.003	0.102	0.005	0.090	0.004
cse1	0.253	0.005	0.217	0.006	0.293	0.007
ceae	0.054	0.002	0.046	0.003	0.062	0.003
ce2ae	0.088	0.003	0.083	0.004	0.094	0.004
degree	0.197	0.005	0.210	0.007	0.182	0.006
postgraduate	0.066	0.003	0.071	0.005	0.060	0.004
child 0-4	0.121	0.003	0.147	0.005	0.093	0.004
child 5-11	0.135	0.003	0.138	0.005	0.132	0.005
child 12-18	0.120	0.003	0.113	0.004	0.128	0.004
married	0.671	0.005	0.686	0.007	0.655	0.007
disabled	0.117	0.003	0.127	0.004	0.106	0.004
ethnic	0.058	0.004	0.059	0.005	0.057	0.005
fixed term contract	0.031	0.002	0.029	0.003	0.034	0.003
part-time	0.222	0.006	0.087	0.005	0.372	0.009
job tenure	5.082	0.059	5.317	0.076	4.817	0.066
trade union member	0.303	0.009	0.311	0.012	0.295	0.010
female	0.472	0.008	0.000	0.000	1.000	0.000
occupation:						
managerial	0.129	0.004	0.165	0.006	0.088	0.004
professional	0.113	0.005	0.122	0.007	0.103	0.006
technical	0.148	0.005	0.135	0.006	0.163	0.007
clerical	0.174	0.006	0.083	0.005	0.276	0.009
craft	0.080	0.005	0.139	0.009	0.013	0.002
personal	0.067	0.004	0.029	0.003	0.110	0.006
sales	0.077	0.005	0.046	0.004	0.111	0.008
operative	0.092	0.005	0.147	0.008	0.032	0.005
unskilled	0.120	0.006	0.134	0.008	0.105	0.006
industry:						
manufacturing	0.186	0.008	0.267	0.012	0.097	0.007
utilities	0.005	0.001	0.006	0.001	0.003	0.001
construction	0.047	0.005	0.073	0.009	0.018	0.002
whole/retail	0.137	0.007	0.134	0.010	0.140	0.009
hotels	0.038	0.004	0.030	0.004	0.047	0.005
transport	0.065	0.004	0.088	0.006	0.038	0.004
financial services	0.059	0.005	0.052	0.005	0.067	0.007
other business	0.151	0.009	0.152	0.012	0.150	0.011
public admin	0.051	0.004	0.048	0.005	0.054	0.005
education	0.092	0.004	0.049	0.003	0.141	0.007

	all		male		female	
	mean	s.error	mean	s.error	mean	s.error
health	0.123	0.006	0.054	0.005	0.199	0.010
other community	0.046	0.005	0.047	0.006	0.045	0.005
workplace age	44.53	1.833	45.59	2.153	43.36	1.943
workplace size	420.1	21.83	420.8	27.27	419.8	28.21
multi site	0.747	0.014	0.729	0.017	0.767	0.014
foreign owned	0.153	0.012	0.194	0.016	0.108	0.011
increasing market	0.331	0.015	0.344	0.018	0.316	0.016
family friendly index	3.071	0.044	2.924	0.055	3.234	0.048
IR index	2.608	0.035	2.565	0.043	2.657	0.039
HP practices	1.190	0.027	1.178	0.032	1.204	0.030
equal opportunity policy	0.856	0.010	0.839	0.013	0.875	0.011
relative female workplace	49.15	0.800	33.37	0.787	66.75	0.609
relative female occupation	51.01	0.394	41.70	0.481	61.39	0.384
regions:						
north east of England	0.042	0.007	0.045	0.009	0.038	0.006
north west of England	0.146	0.012	0.150	0.014	0.141	0.013
Yorkshire & Humberside	0.090	0.010	0.090	0.012	0.091	0.011
east midlands of England	0.094	0.009	0.091	0.011	0.097	0.011
west midlands of England	0.090	0.009	0.093	0.011	0.087	0.010
east of England	0.106	0.009	0.100	0.011	0.112	0.011
London	0.131	0.011	0.128	0.013	0.133	0.013
south east of England	0.079	0.008	0.074	0.009	0.086	0.010
south west of England	0.118	0.011	0.119	0.014	0.117	0.012
Scotland	0.037	0.005	0.039	0.006	0.035	0.006
Wales	3.453	0.024	3.318	0.033	3.606	0.028
number of observations		17810		8606		9183

Source: WERS 2004.

Table A3. Job satisfaction, ordered probits.

	all			males			females		
	coeff	s.error	z val	coeff	s.error	z val	coeff	s.error	z val
age	-0.029	0.007	***	-0.029	0.009	***	-0.028	0.009	***
age squared	0.431	0.079	***	0.429	0.106	***	0.409	0.112	***
training	0.072	0.004	***	0.077	0.005	***	0.066	0.005	***
education (education minimal omitted)									
cse25	-0.066	0.040		-0.140	0.055	**	0.027	0.057	
cse1	-0.168	0.030	***	-0.227	0.043	***	-0.103	0.043	**
ceae	-0.229	0.045	***	-0.230	0.070	***	-0.216	0.062	***
ce2ae	-0.189	0.044	***	-0.231	0.064	***	-0.155	0.057	***
degree	-0.232	0.039	***	-0.260	0.052	***	-0.187	0.053	***
postgraduate	-0.234	0.048	***	-0.215	0.067	***	-0.271	0.065	***
child 0-4	0.013	0.034		-0.009	0.043		0.038	0.053	
child 5-11	0.098	0.032	***	0.123	0.044	***	0.064	0.046	
child 12-18	0.052	0.030		0.026	0.046		0.072	0.041	
married	0.105	0.024	***	0.159	0.035	***	0.054	0.030	
disabled	-0.188	0.029	***	-0.199	0.039	***	-0.192	0.041	***
ethnic	-0.022	0.043		0.078	0.060		-0.126	0.065	**
fixed contract	-0.151	0.052	***	-0.115	0.074		-0.167	0.075	**
part-time	0.138	0.028	***	0.144	0.054	***	0.128	0.033	***
tenure	0.002	0.003		-0.004	0.005		0.009	0.004	**
union	-0.132	0.026	***	-0.132	0.036	***	-0.114	0.034	***
occupation (craft/personal services omitted)									
managerial	0.319	0.044	***	0.363	0.055	***	0.198	0.086	**
professional	0.178	0.044	***	0.129	0.066		0.256	0.070	***
technical	0.105	0.039	***	0.153	0.067	**	0.045	0.055	
clerical	0.051	0.045		0.077	0.090		0.019	0.050	
sales	-0.064	0.061		-0.033	0.098		-0.076	0.072	
operative	-0.077	0.052		-0.062	0.055		-0.149	0.130	
unskilled	0.004	0.047		-0.016	0.067		0.056	0.075	
industry (manufacturing omitted)									
utilities	0.033	0.111		-0.004	0.130		0.065	0.230	
construction	0.245	0.062	***	0.220	0.070	***	0.297	0.136	**
whole/retail	0.207	0.053	***	0.235	0.062	***	0.166	0.077	**
hotels	0.171	0.073	**	0.245	0.109	**	0.061	0.092	
transport	-0.013	0.065		-0.059	0.078		0.072	0.088	
financial services	-0.078	0.067		-0.112	0.084		-0.077	0.082	

	all			males			females		
	coeff	s.error	z val	coeff	s.error	z val	coeff	s.error	z val
other business	0.089	0.052		0.088	0.063		0.091	0.074	
public admin	0.063	0.066		-0.005	0.075		0.109	0.095	
education	0.231	0.057	***	0.151	0.081	**	0.267	0.080	***
health	0.251	0.057	***	0.136	0.097		0.336	0.076	***
other community	0.172	0.068	***	0.208	0.077	***	0.128	0.095	
workplace age	0.000	0.000		0.000	0.000		0.000	0.000	
workplace size	0.000	0.000		0.000	0.000		0.000	0.000	
multi site	-0.110	0.034	***	-0.146	0.047	***	-0.077	0.040	**
foreign owned	-0.027	0.039		-0.080	0.047	**	0.075	0.055	
increasing market	0.054	0.028	**	0.049	0.038		0.064	0.034	**
family friendly index	-0.016	0.010		-0.006	0.013		-0.028	0.012	**
IR index	-0.011	0.012		0.001	0.015		-0.021	0.015	
employee interaction	-0.022	0.015		-0.019	0.020		-0.020	0.020	
equal opp	-0.114	0.047	**	-0.128	0.061	**	-0.110	0.057	**
rel female workplace	0.000	0.001		0.001	0.001		-0.001	0.001	
rel female occupation	0.000	0.001		-0.001	0.001		-0.001	0.002	
Region (east Midlands omitted):									
north east of England	-0.086	0.089		0.053	0.102		-0.246	0.113	**
north west of England	-0.064	0.059		-0.048	0.072		-0.076	0.072	
Yorkshire & Humber	-0.043	0.066		0.045	0.084		-0.127	0.077	
west Midland England	-0.072	0.063		-0.085	0.084		-0.069	0.073	
east of England	-0.096	0.070		-0.032	0.097		-0.162	0.079	**
London	-0.060	0.067		0.035	0.086		-0.159	0.080	**
south east of England	-0.081	0.059		-0.028	0.073		-0.146	0.072	**
south west of England	-0.033	0.065		0.034	0.086		-0.106	0.078	
Scotland	-0.093	0.061		-0.032	0.078		-0.174	0.075	**
Wales	-0.020	0.071		0.063	0.094		-0.131	0.100	
female	0.117	0.024	***						
number observations		17810			8606			9183	
	F(59,1294)	19.090		F(58,1182)	12.830		F(58,1209)	9.790	

Source: WERS 2004. ** Significant at the 95% or *** 99% confidence level or above.