

**EMPLOYMENT RELATIONS
OCCASIONAL PAPER**

How does the workplace affect
quality of employment?

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About this publication

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Executive summary

The issue of the quality of employment has been receiving more attention in policy and academic circles in recent years as prior concerns regarding employment focused more on its quantity and financial rewards. This paper explored the association of workplace characteristics with four aspects of employment quality – job satisfaction, stress from work, the degree of discretion at work, and perception of job security – using employer-employee matched data. This paper finds that the workplace is a crucial mediating factor in determining the quality of employment – independent of occupation and other observed individual characteristics.

Overall, there were a number of interesting findings. High Involvement Management task practices had a positive effect with employees reporting higher quality where they were in place, but other HIM practices such as welfare had no such association. Working in a single establishment seemed to have a strong and positive effect on all measures of employment quality whereas workplace size was associated with lower reported job quality.

In terms of workplace performance, only financial performance seemed to have an effect – although superior financial performance was associated with higher levels of job security but with less control over work.

Background

There is a growing literature on the quality of employment. It commonly plots trends in factors such as skill-use in the job, job satisfaction, the degree of autonomy in the job, stress derived from work, and job security. The quality of employment has become an ever more important issue during the 2000s.

Yet little is known as to what determines the quality of work. Previous studies have examined the quality of employment in a comparative perspective across European countries in terms of different ‘employment regimes’ (eg Gallie 2007) or more commonly examined the correlation of individual-level characteristics as determinants. Few have explored how characteristics of the workplace are associated with the the quality of employment.

Aims and objectives

This paper examines the workplace as a mediating factor in determining four main features of the subjective experience of work quality: job satisfaction, stress, the degree of perceived discretion, and perceived job security. This study used the 2004 Workplace Employment Relations Survey (WERS). WERS is a unique dataset containing detailed information from a representative sample of workplaces with five or more employees in Britain. An innovation in the survey since 1998 has been to include an employee

component where employees can report their perceptions of the quality of work in their workplace.

Using detailed information from WERS 2004 on individuals working within workplaces, it is possible to control for individual characteristics which may be correlated with the rating of the four work quality measures used, isolating the influence of workplace characteristics on these measures. Multilevel modelling is used to take into account the nested structure of the data.

Summary of findings

Satisfaction

- High involvement management (HIM) task practices were found to be generally associated with higher levels of employment quality, but had no significant association with stress levels.
- Only in one industry had a negative association with satisfaction – financial services.
- Workplace size was found to be negatively associated with satisfaction – the larger the workplace, the lower the reported satisfaction.
- Working in a single establishment was found to be associated with higher levels of job satisfaction as was working in an establishment operating in a growing product market.

Discretion

- As with satisfaction there was a positive association with HIM task practices and flexitime and as with satisfaction, there was a negative workplace size association.
- The financial services and transport industries were found to have lower discretion levels whereas hotels and restaurant, education, and health industries were found to be associated with higher levels of discretion.
- Employees reported less discretion in workplaces with superior financial performance whereas working in a single establishment was associated with greater autonomy at work.
- Public sector employees felt they have higher levels of discretion than private sector employees.

Stress

- Stress was not as well predicted by workplace-level characteristics as the other measures of employment quality, implying that is perhaps more to do with individual-level factors.
- Financial services and hotels and restaurants were associated with higher levels of stress.

Security

- Industry and years in operation were best predictors of security – having a positive association.

- Employees reported feeling less secure in workplaces with a union voice.
- Whether an employees' establishment is in the public or private sector seemed to have no association with security.

About this project

This research was prepared for the Department for Business innovation and Skills (BIS) as part of the Postgraduate Employment Research Scholarships initiative.

About the author

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CHAPTER ONE: Introduction

What do we mean when we talk about quality of employment? One way is to equate quality with desirability of jobs (eg Jencks et al. 1988). Another way – the approach taken in this report – is to use direct assessments of the quality of work by employees themselves. This latter approach is more appropriate for the purposes of this paper as the focus is on the impact of the workplace on the quality of employment. There are many facets to the quality of employment. Four of the most commonly studied facets are used in this report. Perhaps surprisingly, little empirical work has investigated the links between workplace characteristics and the quality of employment.

Interest in the quality of employment has been revived in recent years for two main reasons. First, there appears to be a ‘paradox’ in labour market trends (Green 2006). Wages have risen, on average, by around 2¼ to 2½ percent a year over the past decade (adjusted for inflation), at every level of the distribution (Fitzner 2006). Moreover, employment has been at record levels in the 2000s. Attention therefore had turned to quality.

Second, there has been an increase in the recognition of the quality of employment in both policy and academic circles. In terms of policy, employment quality is now on the agenda of many governments and supranational institutions such as the ILO’s notion of ‘decent work’; and within the EU where the quality of employment has become an explicit objective at the Lisbon, Nice and Stockholm summits. One aspiration of the current government’s labour market policy is ‘full and fulfilling employment’ (DTI 2002; Hewitt 2004).

The study of the quality of employment can be seen as an extension of the well-being literature (Blanchflower and Oswald 2004; Layard 2005; Offer 2006). Much attention has been given to changes in wages and their distribution, but there are many other important aspects of work that are of importance for policy. As with well-being research, looking at just wages is not enough to give a rounded picture. Research by psychologists and epidemiologists pointed to links between job characteristics such as the level of control one has with serious effects such as stress, risk of coronary heart disease, and mortality (Bosma 1998; Davey Smith and Harding 1997; Karesek and Theorell 1990; van Rossum et al. 2000).

CHAPTER TWO: Trends in the quality of employment

At the aggregate level, the evidence seems to suggest divergent trends in the quality of employment. On the one hand, the performance of the labour market had been relatively favourable over the last decade or so (Fitzner 2006): there has been real earnings growth of around 2½ percent since 1996. Employment rates rose in Britain, at a time when there were falling employment rates for Japan, US, and Germany. Employment had been generally more secure with fewer employees being made redundant and turnover being relatively stable compared to the early 1990s. Average hours worked had fallen for all workers, part-time and full-time.

On the other hand, job satisfaction seemed to be stable or deteriorating in the UK and other OECD countries over the last three decades according to several data sources (Clark, 2005; Gallie, 2005; Green, 2006). More recent evidence shows there may have been a slight increase in job satisfaction between 1998 and 2004 stemming from a recent improvement in the perception of employee relations and job security (Brown et al. 2006).

How can we explain the long term decline in satisfaction? Green and Tsitsianis (2005) found that changing job insecurity does not explain the fall in job satisfaction in the 1990s. They showed that intensification of work effort and declining task discretion accounted for the fall in numbers who reported being completely satisfied. Indeed, evidence shows that from 1998 to 2004 perceived job security improved slightly (Brown et al. 2006).

Another key facet of employment is the amount of discretion one has over what work is done, and how it is done. Evidence points to a fall in perceived discretion since the 1980s and 1990s (Gallie et al. 2004; Green 2006). Moreover, the trend towards declining discretion is more marked in Britain than it is for other OECD countries (Gallie et al. 2004). More recent evidence shows there have been slight improvements in the influence over work, with men reporting a slight increase in control over the pace at which work is done, and women reporting a slight increase in the influence over the way in which they do their work and there has also been a stabilisation in the amount of job stress for both men and women between 1998-2004 (Brown et al. 2006). Green (2006:86-9) examines some workplace determinants of intensity in effort and found that technological change had a significant positive impact on the change in effort in workplaces between 1987-1990 and 1993-1998. However, technological change might make work more intense as the introduction of new technologies can make monitoring of work more pervasive.

These literatures identify both positive and negative trends in job quality. It is less well known why these trends have been observed, especially given the generally favourable labour market conditions during the period in question. Rose (2007) found that job satisfaction and job stress varied between occupations using a detailed measure of 81 occupations. Once 'bundles' of aspects of different jobs

were taken into account, the 'occupation' effect on overall satisfaction/stress disappeared. Thus it is not occupations in themselves that influence the subjective job quality, but actual aspects of the job for which occupation is a marker. A key hypothesis of this paper is that characteristics of the workplace may also be key determinants of the quality of employment.

The impact of workplace characteristics on economic outcomes has been investigated (Bryson et al. 2005; Bryson et al. 2006), but their impact upon employees' well-being is less well known. The workplace determinants of job quality have rarely been studied. Most studies use other individual-level subjective ratings as independent variables (e.g. perception of work intensity) to try and account for variations in facets of job quality, mainly job satisfaction. One study looked at the impact of workplace characteristics on the intensity of work (Green 2004) but this study used a rating of effort by managers and not employees themselves as the dependent variable. Managers are not in as good a position as employees to judge effort change. Moreover, even if managers are accurate, it is effectively an aggregated measure and could conceal variation within a workplace. Thus, a niche exists in looking at the workplace determinants of job quality, where the rating of job quality is made by the employees themselves.

Multilevel modelling is used to take into account the nested nature of the data (see Technical Appendix for more information on this method). Only one study employing multilevel modelling to analyse the Workplace Employment Relations Survey exists (Haile 2007), but this mainly looks at the individual fixed effects on various facets of job satisfaction rather than workplace fixed effects. Little is known on workplace effects.

As indicated above, a key hypothesis of this paper is that characteristics of the workplace may also be key determinants of the quality of employment.

CHAPTER THREE: *Data and method*

3.1 Data

The data used in this paper is from the Workplace Employment Relations 2004 (WERS).¹ It is a workplace-level survey that has been providing a picture of employment relations in Britain through a series of surveys since the 1980s. Its content has changed greatly since then, as the context of employment relations has changed.² There have been innovations in the survey design. One recent innovation is the inclusion of a component in which employee data within the workplace sample is collected. In the 2004 survey, the workplace sample is drawn from workplaces in Britain with five employees or more. The WERS sample is stratified by workplace size and industry, deliberately over-sampling larger workplaces as they are fewer in number than smaller workplaces. With weights applied to correct for the sampling procedure, it provides a representative view of British workplaces in 2004 with five or more employees. It is considered the most authoritative survey of its kind.

The response rate for the workplace component was fairly high (64 per cent) giving a usable sample of $n = 2295$ workplaces. Managers at workplaces in the final workplace sample were asked to randomly distribute (up to) 25 self-completion employee questionnaires (SEQs) to employees in their workplace. SEQs were successfully distributed in 76 per cent of the workplaces and 61 per cent of employees that received the SEQ, successfully returned it, yielding an employee sample of $n = 22451$ from 1733 workplaces. Given the sampling procedure and response rates, accordingly, weights are used to give reliable estimates.

3.2 Multilevel analysis

Since the data is clustered, multilevel modelling is the most appropriate method for the questions to be addressed. Multilevel analysis is one way to try and account for nested sources of variability that could lead to an underestimation bias in the variance of the estimated coefficients. For more details see Technical Appendix.

Multi-level modelling tries to account for statistical problems associated with 'nested' or 'clustered' data where sources of variability in an outcome can be attributed to different levels. The standard example used to illustrate multilevel modelling as a statistical technique is the school impact on student test scores, which typically has three levels of variability: students (level one) nested within classes (level two), in turn nested within schools (level three). In this example,

¹ See Kersley *et al.* (2005) and <http://www.wers2004.info> for more details.

² For a detailed treatment of the changes in WIRS/WERS and shifts in employment relations mapped by these surveys the reader is referred to Blanchflower, Bryson and Forth (2007).

there are multiple sources of variability eg between students, between classes, and between schools. Outcomes within a cluster (students within classes or classes within schools) are likely to be correlated. If the variability at each level is not taken into account, the wrong conclusions might be drawn had the unobserved cluster effect not been considered. In this paper, multilevel modelling is used to take into account the clustered nature of WERS ie employees nested within workplaces.

3.3 Dependent variables

The dependent variables come from the Survey of Employees Questionnaire of WERS (SEQ). The dependent variables are level-one since they are from responses filled out by individual employees. Four distinct dependent variables were used, each relating to one dimension of work quality: job satisfaction, stress, autonomy and perception of job security. The first three are composite scores derived from the possible answers to the relevant questions in the SEQ. The last one is derived from a single-item measure.

Overall satisfaction is a 1-5 index score and is the averaged scores of responses across eight items relating to satisfaction with various aspects of work. Stress is the averaged score across three stress items and ranges from 0-4. Discretion is the averaged score across five discretion items and ranges from 0-4. All the composite items meet the standard internal consistency requirements. More details on the construction of these variables can be found in the Annex A. Basic descriptive statistics for each of the four composite measures and their constituent items are reported in Table 1 below.

3.4 Independent variables

The interest of this paper is to examine the impact of workplace characteristics and workplace practices on the quality of employment. A wide range of individual-level variables were used as controls to isolate the effect of workplace characteristics on employment quality. The most important individual-level control is probably occupation. Controlling for occupation allows us to see the effect of workplace practices on perceptions of work quality, controlling for the job itself. In other words, the analysis can give an indication of the impact of the kind of workplace on the quality of employment, eliminating the impact of the kind of **job** on the quality of employment.

The workplace variables that might influence work quality can be put into five categories or 'bundles': voice regime, high commitment management practices, 'structural' workplace characteristics, product market, and relative workplace performance. Similar categorisations have been used elsewhere to look at workplace level outcomes such as labour productivity and work intensity (Bryson et al. 2005; 2006; Green 2004). Not much is known about their links with the four measures of employment quality used in this paper. Descriptive statistics of the workplace-level variables can be found in Table 2.

Table 1: Mean employment quality scores

| Employment quality measure | Mean score | Number of observations |
|-----------------------------------|-------------------|-------------------------------|
| Overall Satisfaction Index | 3.486 | 22426 |
| Achievement | 3.759 | 22223 |
| Scope for using initiative | 3.797 | 22145 |
| Influence over job | 3.530 | 22020 |
| Training | 3.314 | 22000 |
| Pay | 2.861 | 22146 |
| Job security | 3.560 | 21798 |
| Work itself | 3.722 | 22166 |
| Involvement | 3.180 | 22277 |
| Stress Index | 1.460 | 22286 |
| Tense | 1.732 | 22207 |
| Worried | 1.421 | 22146 |
| Uneasy | 1.214 | 22109 |
| Discretion Index | 1.993 | 22305 |
| Tasks | 1.968 | 22173 |
| Pace | 1.983 | 22028 |
| How do work | 2.971 | 22092 |
| Order of tasks | 2.256 | 22032 |
| Start/finish time | 1.414 | 21988 |
| Security | 3.625 | 21518 |

3.4.1 Voice regime

Voice regime refers to the type of channels through which workers let management know about any grievances that they may have. Four voice regimes can be identified: union voice, non-union representative voice, both union and non-union representative voice and direct non-union voice (see Bryson et al. 2006). In nearly all workplaces, some form of voice is found and they are almost mutually exclusive, apart from direct voice which is found in nearly all workplaces (87 percent). A workplace has a union voice by the presence of a union recognition agreement with management, but also if a union representative sits on a joint consultative committee or there is an on or offsite union representative at the workplace. Union voice was found in 16 per cent of establishments. A workplace has a non-union voice if one of the following is present: a non-union employee representative; a works council; joint consultative committee (other than those with wholly union representatives). Non-union representative voice mechanisms were found in 10 per cent of workplaces. Workplace has a direct voice if any meetings between senior management and the workforce with opportunities for two-way communication; any team briefings with opportunities for two-way communication; problem-solving groups with non-managerial employees participating; formal surveys of employees' views or opinions in the last two years; and finally, suggestion schemes.

3.4.2 High involvement management practices

High involvement management practices are designed to increase employee participation with in the workplace and with each other to improve employee commitment, and ultimately, labour productivity. It is likely therefore that such practices have implications for workplace performance, and so this must be controlled for too (see 3.4.5 below). HIM can be broken down into five bundles or practices: task practices, financial participation, recruitment appraisal and development, welfare practices, and the availability of flexitime. The first four practices are following Bryson et al. (2005).

The first kinds of practices are task practices. They are designed to maintain a high degree of teamworking. For workplace to have high involvement task practices it must have exhibited one or more of the following: at least 60 percent of the largest occupational group work in teams; team members depend on each other to do their job; team members decide how work is done; teams are given responsibility for specific products or services; at least 60 percent of employees are formally trained to do jobs other than their own; at least 60 percent of non-managerial employees are in problem-solving groups; and management use suggestion schemes to communicate with employees. An establishment scores one point for each practice it exhibits creating a 0-7 index.

Another way of involving employees more deeply within an establishment is through financial participation. For a workplace to have financial participation it must have more than one of the following: 60 per cent of non-managerial employees got profit-related payments in the last 12 months; at least 60 per cent of non-managerial employees were eligible for share ownership schemes; and at least 60 per cent of non-managerial employees get payments-by-results or merit pay. Workplaces are scored a one if they exhibit any of these. One in five workplaces uses this method of participation.

HIM can be facilitated through recruitment, appraisal and development (Bryson et al. 2005 term these as 'organisational supports' for HRM). These occurred where at least one of the following were present: internal applicants given preference over external applicants for vacancies; performance tests are used in recruitment, except where known to be occasional; personality or attitude tests routinely used in filling vacancies for some non-managerial posts; and that there are regular formal performance appraisal for some non-managerial employees. Establishments score one point for each practice exhibited creating a 0-6 index.

Another HIM 'organisational support', following Bryson et al. (2006) is workplace exhibits welfare practices by the presence of: a job security guarantee covering non-managerial employees; managers and non-managerial employees had equal status across five terms and conditions; there was a three-step grievance procedure in place; there was a three-step disciplinary procedure in place. To this, another practice has been added – whether or not the establishment has a formal equal opportunities policy. Establishments score one point for reporting any of these practices creating an index ranging from 0-5.

Table 2 : Descriptives of workplace determinants

| | Percentage of workplaces | Percentage of employees covered |
|---|--------------------------|---------------------------------|
| <u>Voice Regime</u> | | |
| Union representative voice | 16.0 | 39.2 |
| Nonunion representative voice | 10.0 | 23.8 |
| Direct voice | 87.4 | 94.5 |
| <u>Management Practices</u> | | |
| Task practices index | | |
| 0 | 22.2 | 9.3 |
| 1 | 13.5 | 7.9 |
| 2 | 9.1 | 9.4 |
| 3 | 13.2 | 15.1 |
| 4 | 19.1 | 23.5 |
| 5 | 14.5 | 21.8 |
| 6 | 6.5 | 10.6 |
| 7 | 1.8 | 2.3 |
| Financial participation | 21.4 | 26.6 |
| Recruitment, appraisal, and development index | | |
| 0 | 17.0 | 8.6 |
| 1 | 22.8 | 16.0 |
| 2 | 23.9 | 23.6 |
| 3 | 20.3 | 26.7 |
| 4 | 11.9 | 17.2 |
| 5 | 3.9 | 6.7 |
| 6 | 2.5 | 1.3 |
| Welfare practices index | | |
| 0 | 4.4 | 1.3 |
| 1 | 8.1 | 3.0 |
| 2 | 14.3 | 7.4 |
| 3 | 52.0 | 67.2 |
| 4 | 20.1 | 20.4 |
| 5 | 1.1 | 0.7 |
| Flexitime | 24.1 | 20.7 |
| <u>Structural Establishment Characteristics</u> | | |
| Workplace size | | |
| 5-9 | 43.6 | 9.5 |
| 10-24 | 32.3 | 15.4 |
| 25-49 | 12.9 | 13.8 |
| 50-99 | 6.3 | 13.2 |
| 100-199 | 2.9 | 12.7 |
| 200-499 | 1.6 | 15.6 |
| 500+ | 0.5 | 19.6 |
| Years establishment has been in operation | | |
| Less than 5 | 14.1 | 12.1 |
| 6-10 | 17.5 | 14.2 |
| 11-20 | 22.5 | 19.7 |
| 21-50 | 28.1 | 29.7 |
| 51+ | 14.0 | 21.4 |
| Don't know | 3.9 | 2.8 |

| | Percentage of workplaces | Percentage of employees covered |
|---|--------------------------|---------------------------------|
| Industry (SIC 2003) | | |
| Manufacturing | 11.1 | 14.6 |
| Electricity, gas and Water | 1.4 | 0.4 |
| Construction | 4.9 | 3.8 |
| Wholesale and retail | 24.9 | 17.0 |
| Hotels and restaurants | 8.9 | 5.7 |
| Transport and communication | 4.8 | 7.0 |
| Financial services | 5.2 | 5.7 |
| Other business services | 14.9 | 13.4 |
| Public administration | 2.2 | 5.4 |
| Education | 4.9 | 8.3 |
| Health | 11.6 | 14.0 |
| Other community Services | 6.5 | 4.7 |
| Product Market | | |
| 'Very high' competition | 10.7 | 9.9 |
| Growing product market | 48.0 | 50.0 |
| Demand heavily depends on offering lower prices | 19.4 | 19.5 |
| Demand heavily depends on offering superior quality | 41.9 | 44.4 |
| Relative Establishment Performance | | |
| Financial performance | | |
| A lot below average | 6.1 | 0.5 |
| Below average | 9.0 | 7.0 |
| About average for industry | 40.2 | 38.1 |
| Better than average | 39.6 | 41.9 |
| A lot better than average | 10.3 | 12.4 |
| Labour productivity | | |
| A lot below average | 0.4 | 0.3 |
| Below average | 5.8 | 6.1 |
| About average for industry | 42.4 | 43.0 |
| Better than average | 41.2 | 43.6 |
| A lot better than average | 10.3 | 7.0 |
| Quality of product/service | | |
| A lot below average | 0.1 | 0.1 |
| Below average | 1.6 | 1.8 |
| About average for industry | 19.5 | 19.8 |
| Better than average | 54.8 | 56.4 |
| A lot better than average | 24.1 | 22.0 |
| Establishment Status | | |
| Single establishment | 34.5 | 23.4 |
| Foreign-owned | 11.6 | 18.0 |
| Public sector | | 18.6 30.3 |

N=2995

Weights applied

The final HIM practice under consideration is the use of flexitime. By offering employees flexible working times the organisation is widening involvement, especially for those with outside work commitments. Whether or not 60 percent of non-managerial employees have access to flexitime should they need it. This is the only workplace-level variable to be derived from the employee-level data. Workplaces were coded a 1 if 60 per cent of more of those who returned their SEQ form reported the availability of flexitime should they need it, and 0 otherwise.

3.4.3 'Structural' establishment characteristics

Factors such as voice regime or HIM practices are dependent on other factors such as the industry and especially workplace size. For instance, it is not worth small firms having representative voice mechanisms as it would be too bureaucratic and costly. Direct voice by individuals is more likely. Other factors such as the age of the establishment are likely to be negatively correlated with union presence. The following structural characteristics were included in the model (although they are of interest in themselves): workplace size (number of employees); the age of the workplace; and the industry (Standard Industrial Classification of economic activities 2003).

3.4.4 Product market

Another possible workplace determinant of the quality of employment may be found in the nature of the product market. For instance, in a very competitive labour market, employees may feel their job is less secure than in a workplace that faces little competition. Four product market variables are investigated: First, the degree of competition is based on management's rating five-point scale ranging from very low, to neither high nor low in the middle, to very high. Workplaces were coded a one if they reported a very high level of competition. Second, the state of product market – workplaces were coded a 1 if management stated that the product market for their main good or service was growing. Third, the extent to which main product or service is dependent on price – workplaces were coded a 1 if management reported that demand for their main product or services is heavily dependent on price. Fourth, whether or not the demand for the main product or service depends on offering superior quality.

3.4.5 Relative establishment performance

The performance of the workplace could influence the perception of employment quality. For instance, a workplace that is strongly performing financially might make employees feel more secure in their jobs than in workplace that is performing financially poorly. Employees in more productive workplace might be feel higher levels of stress than in less productive workplaces. Conversely, employees may feel less stressed as they are working so well. Three measures of workplace performance were used: financial performance, labour productivity, and quality of product or service at the workplace relative to other workplaces within the industry. Management were asked to rate their workplace relative to other establishments in the same industry on a five-point scale from 1 (a lot

below average), to 3 in the middle (about average for industry), to 5 (a lot above average).

The measures of financial performance, productivity and quality of product/service in WERS are subjective ones. Management's responses are likely to be skewed toward the positive end of the productivity spectrum. This is indeed the case. For all three measures, around 70 per cent of managers rated their establishment as either average or better than average. However, the ordinal nature of such subjective measures are unaffected by the bias according to a number of studies (Machin and Stewart 1996; Wall et al., 2004, cited in Bryson et al. 2006) and a comparison of the accounting measure of productivity and the subjective measure found in WERS found a modest correlation between the two (Kersley et al 2006, cited in Bryson et al. 2006).

3.4.6 Establishment status

A final group of workplace independent variables relate to the status of the establishment: whether the establishment was a single establishment, or one part of a wider organisation; whether the workplace is foreign owned or not; and ownership – whether the workplace is publicly or privately owned.

3.4.7 Individual-level variables

Individual variables were included to try and control for, as much as possible, the various aspects of the job itself that might influence the quality of work in order to isolate the workplace influences. The individual level controls used are: tenure; usual hours worked per week including over-time; age; gender; whether the employee has a health problem or disability or not; the qualifications an employee holds; whether the employee is white or not; gross weekly wages; and whether an employee is on a permanent contract or not. Estimates for the individual-level variables are not included in the Table 3 for presentational purposes.

CHAPTER FOUR: Results

In the discussion that follows, only the estimates for the workplace fixed effects are mentioned. The employee level coefficients are not reported as they are not the focus of this paper and their purpose is to serve as controls. Overall, workplace characteristics are a poor determinant of stress levels, with few significant results but a better determinant of satisfaction, discretion and security.

4.1 High involvement management practices

Research using WERS shows that there appears to be a positive link between labour productivity and high involvement task practices (Bryson, Forth and Kirby 2005). Using a similar construction of such practices, this paper investigates the efficacy of such practices for the quality of employment. Previous research by Guest (1999) found that in workplaces where human resource management (HRM) policies are present³, employees tend to report that they are generally satisfied in their job, and generally feel very secure in their job but feel fairly stressed (Guest does not use a measure of discretion however). In WERS the vast majority of workplaces reported some task practices. One in five workplaces had no task practices, and these are likely to be smaller workplaces. Table 3 shows that the more high involvement task practices are workplace has, the most satisfied and secure employees feel. However, unlike for Guest, Table 3 shows that the association between the presence of task practices and reported stress levels is not statistically significant.

The next bundle of HIM practices under consideration is financial participation. Although nearly one in four employees works in an establishment with such practices, they appear to have no significant association on any of the four measures of the employment quality. In other words, employees do not report greater job quality in workplaces where financial participation takes place compared with those where it does not. The welfare practices index is also found to have no impact.

Recruitment, appraisal and development practices do seem to have an association but only on stress. Employees reported higher levels of stress in workplaces where these practices were in place and these levels were higher, the greater the number of practices used. In other words, the more practices a workplace had, the more stressed employees felt.

Flexitime has a statistically significant and positive impact on satisfaction and discretion as would be expected. Being able to work flexitime has a positive impact on the level of discretion felt as being able it is a form of autonomy in itself – independent of the occupation. So even if an employee works in an occupation

³ It must be pointed out that HIM is not necessarily the same as HRM. Moreover Guest uses single-item measures for satisfaction and stress, whereas in this paper. Generally, multi-item measures are considered more appropriate measures of multi-dimensional concepts.

that typically does not involve much autonomy, they still feel they have more discretion relative to an employee in the same occupation but working in an establishment where flexible working arrangements are not offered.

4.2 Voice Regime

Direct voice is the most common type of voice regime, found in 87 percent of establishments, covering a total of 94 percent of all employees. The next most commonly occurring type is union voice which is found in 16 percent of establishments covering 39 percent of all employees in workplaces with five or more employees. The final type, non-union representative voice is found in 13 percent of establishments covering 24 percent of all employees in the sample.

Out of the three different voice regimes, only the presence of a union voice, irrespective of the union membership status of individuals, appears to have any significant impact on any of the four facets of work quality. The presence of a union representative voice appears to have a negative association with job satisfaction, discretion, and job security. The association with reported stress levels is statistically significant. The only other voice regime to have a statistically significant association was the presence of direct voice which has a statistically significant negative association with security.

The negative association of a union representative voice regime with job satisfaction is in line with job satisfaction research at the individual level that often finds a negative association between job satisfaction and trade union membership. Such analysis is complicated by the presence of unobservable factors that influence both worker perceptions and the decision to join the union (see Heywood et al, 2005). Previous research using matched WERS employer and employee data suggests that the satisfaction differential between members and non-members is actually due to unobserved differences associated with satisfaction and membership status, such that workers end up being sorted between union and non-union jobs in a non-random fashion. Bryson et al (2004, 2005) conclude that, once endogenous sorting is controlled for, union membership does not affect job satisfaction:

“Using a richer dataset, i.e. one that combines employer and employee characteristics and explicitly modelling the endogeneity of unionization decisions (jointly) with overall job satisfaction and satisfaction with pay, we find no evidence of a negative causal relationship between union membership and job satisfaction.” (Bryson et al., 2004, p.452)

An interesting finding is the strong association between union voice and perceived job security. Since workplace performance and industry are controlled for, it is not a spurious association driven by the fact that unions are most likely to be found in insecure industries. The finding of a negative effect of union voice on job security may seem surprising given that one of the aims of unions, other than to increase pay for their members, is to prevent job losses where possible

through demarcation and regulation of manning levels in establishments which could feed through to perceptions of security. Unions have a negative impact on employment growth (Bryson 2004; Millward et al 2001). Although there is debate over whether the link is causal (Metcalf 2003:11), the negative effect on employment growth seems to have fed through to perceptions of job security.

4.3 'Structural' establishment characteristics

Workplace size is perhaps the most important structural variable as it is correlated with nearly all the other workplace characteristics. Working in a larger workplace is associated with a negative impact on job satisfaction, discretion and job security relative to smaller workplaces. Moreover, the magnitude of the coefficient is generally larger, the bigger the workplace. Thus it appears, as workplace size increases, the quality of employment declines relative to the smallest workplaces (5-9 employees). As for stress levels, only one coefficient was significant, so it is hard to make comparisons between larger and smaller workplaces for this measure of work quality. The significant findings could be explained by the more non-direct forms of monitoring found in larger workplaces, for instance, electronic monitoring, although less likely to have direct monitoring. Roles are more likely to be specified with a more rigid division of tasks and division of labour than in smaller workplaces (5-9 employees) – as indicated by the negative coefficients for discretion.

Industry effects are a broad indicator to the type of work, employment, and economic conditions that are not picked up by the occupation controls. Employees in establishments in the financial services industry appear to report poor employment quality compared with those in other industries. Working in this sector was associated with lower satisfaction, higher stress levels and lower levels of perceived discretion. The transport and communication industry and other business services are the only other industries that showed a negative association with discretion.

The wholesale and retail industry, hotels and restaurant industry and education and health sectors appear to be associated with good quality employment. Working in an establishment in the hotels and restaurants industry is associated with more positive reporting of satisfaction and discretion. It appears to be the most secure industry to work in but also the most stressful. The education and health sectors have the strongest positive association with job satisfaction than any of the other industries. These two sectors also show strong job security, presumably due to government expansion in these sectors. In general, the number of years an establishment has existed appears to be a best predictor of reported job security, with all four bands having a statistically significant and positive impact.

Table 3 : Multilevel estimates of the quality of employment

| | Satisfaction | Stress | Discretion | Security |
|---|------------------------|------------------------|------------------------|------------------------|
| <u>Voice Regime</u> | | | | |
| Union representative voice | -0.0852*** (0.0166) | 0.0114 (0.0212) | -0.0463*** (0.0176) | -0.1473*** (0.0253) |
| Nonunion representative voice | -0.0249 (0.0154) | -0.0262 (0.0196) | 0.0013 (0.0163) | -0.0069 (0.0234) |
| Direct voice | -0.0022 (0.0154) | 0.0215 (0.0410) | -0.0272 (0.0340) | -0.0879* (0.0494) |
| <u>Management Practices</u> | | | | |
| Task practices | 0.0101** (0.0042) | 0.0044 (0.0053) | 0.0109** (0.0044) | 0.0131** (0.0063) |
| Financial participation | -0.0213 (0.0154) | 0.0305 (0.0196) | -0.0118 (0.0163) | -0.0384 (0.0234) |
| Recruitment, appraisal, and development | -0.0007 (0.0053) | 0.02667*** (0.0067) | -0.0010 (0.0056) | -0.0001 (0.0080) |
| Welfare practices | 0.0132 (0.01003) | -0.0018 (0.0128) | -0.0006 (0.0106) | 0.0204 (0.0153) |
| Flexitime | 0.0770*** (0.0187) | -0.0356 (0.0238) | 0.1967*** (0.0197) | 0.0316 (0.0283) |
| <u>Structural Establishment Characteristics</u> | | | | |
| Workplace size (ref cat 5-9 employees) | | | | |
| 10-24 | -0.0618* (0.0344) | 0.0849* (0.0438) | -0.0472 (0.0363) | -0.0333 (0.0525) |
| 25-49 | -0.1524*** (0.0350) | 0.0345 (0.0442) | -0.0821** (0.0367) | -0.0972* (0.0530) |
| 50-99 | -0.1465*** (0.0349) | 0.0170 (0.0445) | -0.0693* (0.0370) | -0.0703 (0.0534) |
| 100-199 | -0.2283*** (0.0358) | 0.0540 (0.0455) | -0.1781*** (0.0378) | -0.2064*** (0.0546) |
| 200-499 | -0.1635*** (0.0365) | -0.0325 (0.0465) | -0.1217*** (0.0386) | 0.1502*** (0.0558) |
| 500+ | -0.2340*** (0.0374) | -0.0148 (0.0475) | -0.1424*** (0.0395) | -0.2708*** (0.0569) |
| Years establishment has been in operation (ref cat less than 5) | | | | |
| 6-10 | 0.0552** (0.2689) | -0.0254 (0.0342) | -0.0084 (0.0284) | 0.1441*** (0.0408) |
| 11-20 | 0.0131 (0.0249) | 0.0272 (0.0318) | -0.0411 (0.0264) | 0.0911** (0.0378) |
| 21-50 | 0.0430* (0.0238) | 0.0164 (0.030) | -0.0050 (0.251) | 0.1577*** (0.0381) |
| 51+ | 0.0129 (0.0251) | -0.0058 (0.0320) | -0.0448* (0.0266) | 0.1306*** (0.0381) |
| Don't know | -0.0008 (0.0489) | 0.1587** (0.0622) | -0.1040** (0.0516) | 0.2222*** (0.0737) |
| Industry (ref cat manufacturing) (SIC 2003) | | | | |
| Electricity, gas and Water | 0.0081 (0.0445) | -0.0068 (0.0566) | -0.0897* (0.0470) | -0.0207 (0.0672) |
| Construction | 0.1698*** (0.0319) | -0.0464 (0.0406) | 0.0583* (0.0338) | 0.2652*** (0.0485) |
| Wholesale and retail | 0.1035*** | -0.0104 | 0.0524* | 0.3345*** |

| | Satisfaction | Stress | Discretion | Security |
|---|------------------------|--------------------------|---------------------------|------------------------|
| Hotels and restaurants | (0.0260) 0.2017*** | (0.0331) 0.2074*** | (0.0275) 0.1807*** | (0.0396) 0.4009*** |
| Transport and communication | (0.0382) 0.0368 | (0.0488) -0.0124 | (0.0404) -0.1197*** | (0.0582) 0.1083** |
| Financial services | (0.0286) -0.0824*** | (0.0377) 0.0978*** | (0.0303) -0.1856*** | (0.0436) -0.0390 |
| Other business services | (0.0296) 0.0286 | (0.0377) 0.0392 | (0.0313) -0.0533** | (0.0449) 0.0544 |
| Public administration | (0.0249) 0.2112 | (0.0318) -0.2719 | (0.0264) 0.1854 | (0.0380) 0.1894 |
| Education | (0.1356) 0.2604*** | (0.1725) -0.0484 | (0.1432) 0.1003** | (0.2109) 0.3500*** |
| Health | (0.0431) 0.2562*** | (0.0549) -0.0598 | (0.0456) 0.1563*** | (0.0650) 0.2953*** |
| Other community Services | (0.0333) 0.1185*** | (0.0424) -0.0343 | (0.0352) 0.0158 | (0.0507) 0.2135*** |
| <u>Product Market</u> | | | | |
| 'Very high' competition | 0.0109 (0.2295) | 0.0049 (0.0292) | 0.0218 (0.0243) | 0.0091 (0.0348) |
| Growing product market | 0.0367*** (0.1334) | 0.0091 (0.0170) | 0.0090 (0.0141) | 0.0701*** (0.0203) |
| Demand heavily depends on offering lower prices | -0.0172 (0.0169) | 0.0463** (0.0215) | 0.0299* (0.0178) | -0.0604** (0.0258) |
| Demand heavily depends on offering superior quality | 0.0114 (0.1336) | -0.0352** (0.0170) | 0.0060 (0.0141) | 0.0300 (0.0203) |
| <u>Relative Establishment Performance</u> | | | | |
| Financial performance | 0.0064 (0.0067) | 0.0028 (0.0085) | -0.0203*** (0.0070) | 0.0574*** (0.0102) |
| Labour productivity | 0.0112 (0.0071) | -0.0091 (0.0090) | 0.0077 (0.0075) | -0.0166 (0.0180) |
| Quality of product/service | 0.0080 (0.0081) | 0.000 (0.0104) | 0.0124 (0.0086) | 0.0177 (0.01235) |
| <u>Establishment status</u> | | | | |
| Single establishment | 0.1056*** (0.0171) | -0.0467** (0.0218) | 0.0530*** (0.0181) | 0.1342*** (0.0260) |
| Foreign-owned | -0.0105 (0.0180) | -0.0487** (0.0229) | -0.0130 (0.0190) | 0.0801*** (0.0275) |
| Public sector | 0.0062 (0.0255) | 0.0538* (0.0324) | 0.0682** (0.0269) | -0.0268 (0.0385) |
| <u>Random effects</u> | | | | |
| Workplace random effects | -3.59-10 (1.55e-07) | 1.03e-06 (2.45e-07)- | 3.79e-06*** (6.14e-07) | 0.00025** (0.0003) |
| Individual random effects | 4.94e-10 (1.69e-07) | 1.21e-06** (2.37e-07) | 3.86e-06*** (3.49e-07) | 0.00045*** (0.0003) |
| Log-likelihood | -2.4201 | -2.2041 | -1.6500 | -2.5089 |
| Number of workplaces | 1084 | 1083 | 1084 | 1082 |
| Number of employees | 11188 | 11145 | 11151 | 10768 |

Employee-level controls were applied but not reported. For details see text.

Standard errors in parentheses

Significance levels: *** 1% **5% *10%

4.4 Product market

Perhaps surprisingly, if an establishment was operating in a product market with 'very high' competition, it appears to have no association with the quality of employment as reported by employees. The other product market characteristics do however seem to be important. Establishments operating in a growing product market are associated with higher satisfaction and job security indicating that managers' and employees' rating of the product market are consistent.

Interestingly, an establishment operating in a product market where demand heavily depends on offering lower prices (low-end) was associated with higher reported stress levels whereas an establishment operating in a product market where demand depends on offering superior quality (high-end) has the opposite impact on stress. Establishments catering for the low-end of the product market are negatively associated with perceived job security.

4.5 Establishment performance

Workplace labour productivity was included as it is useful to disentangle the effects with other associated variables such as the voice regime or product market. Only financial performance seems to have an effect on the quality of employment, having a negative association on discretion and, as we would expect, if employees' perceptions of their job security are accurate, a positive impact of job security. If the negative association of a superior financial performance on discretion is causal, it may indicate that establishments perform better because employees' work is rigidly controlled.

4.6 Establishment status

In the sample, one in three of the workplaces were a single independent establishment, and the rest are one of a number of different workplaces part of a larger organisation or a sole UK establishment of a foreign organisation. About one in five employees in the sample work in a single establishment. Working in a single establishment seems to be a good thing, having a strong and positive impact on all four measures of employment quality.

Around 12 percent of workplaces are foreign-owned, covering 18 percent of all employees in the sample. Employees working in a workplace that is foreign owned report higher stress levels but a greater sense of job security.

CHAPTER FIVE: Concluding remarks

This paper was able to show that the workplace is a mediating factor in determining employees' experience at work – independent of their job and individual characteristics using an employer-employee matched dataset. The main strength of the data was the rich nature of information available for each workplace in the WERS sample. Moreover, the information about workplaces was collected from managers who will have more detailed knowledge of HR such as the workplace's recruitment practices. When workplace information is collected from the individual, it can be less detailed and less accurate. However, there are several limitations such as the use of 5 point rather than 7 point scales in the questions, and the self completion nature of the SEQ. These are discussed in detail at the end of the Technical Appendix.

How does the kind of establishment affect an employees' experience at work? Overall, there were many interesting findings. HIM task practices have a positive effect on the quality of work, but other HIM practices such as welfare have no impact. Working in a single establishment seems to have a strong and positive effect on all measures of reported employment quality whereas workplace size was associated with lower reported work quality. In terms of workplace performance, only financial performance seemed to have an effect – superior financial performance was associated with higher levels of job security but with less control over work.

The industry of the establishment had mixed effects. Employees working in establishments in the financial services industry reported lower quality employment, with a less job satisfaction, discretion and security and higher levels of stress. Employees working in the health or education sectors seemed to report higher levels of job satisfaction, discretion and job security. The kind of product market seemed to have an effect on the quality of employment too: establishments operating in growing product markets had a positive impact on satisfaction and job security. Working in an establishment operating in a low-end product market is associated with higher stress levels, whereas operating in a high-end product market was found to be associated with lower stress levels.

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Technical appendix

Multilevel analysis

Multilevel analysis differs from conventional linear regression in that it takes into account unexplained variance at different levels in the error terms and integrates them into the equation as random effects. Regression analysis aims to explain variance in the outcome variable. Given the hierarchical structure of the data – employees nested within workplaces – the variability in the outcome variable can be explained by the variability between individuals and by the explained variability between workplaces. Essentially, a separate regression model is fitted to each workplace's employees. The outcome variable is then regressed on level-one characteristics in each model.

The outcome variable of interest (i.e. satisfaction, stress, autonomy or perceived job security), Y_{ij} , has predictors at two distinct levels of analysis – at level-one, denoted by subscript i , the level of the individual, and at level-two, denoted by subscript j , the level of the workplace. The relationship between level-one predictor variables and Y_{ij} are shown in equation (1), where β_{0j} is the workplace intercept, β_{1j} is the random slope, X_{ij} are the individual-level independent variables, and r_{ij} is an error term.

$$Y_{ij} = \beta_{0j} + \beta_{1j}X_{ij} + r_{ij} \quad (1)$$

The random intercept β_{0j} is written as:

$$\beta_{0j} = \beta_{00} + \beta_{01}Z_j + u_{0j} \quad (2)$$

where β_{00} is the workplace specific mean intercept and u_{0j} is the deviation of from the workplace specific mean β_{0j} .

The random slope β_{1j} is written as:

$$\beta_{1j} = \beta_{10} + \beta_{11}Z_j + u_{1j} \quad (3)$$

Combining (2) and (3) into one linear equation gives a hierarchical linear model similar to the one used in the analysis:

$$Y_{ij} = \beta_{00} + \beta_{10}X_{ij} + \beta_{01}Z_j + \beta_{11}X_{ij}Z_j + u_{0j} + u_{1j}X_{ij} + r_{ij} \quad (4)$$

The first four terms in the model represent the fixed parts of the model whereas the latter three terms represent random parts of the model. It shows that, essentially, the random effects can be seen as the residuals (unexplained variance) at each level and a random interaction $u_{1j}X_{ij}$ between workplace and individual-level variable X .

The estimations were conducted using the `gllamm` (generalised linear latent and mixed models) and post-estimation commands in STATA. The dependent

variables were treated as interval level variables to speed up computation. The identity link function was used.

Overall job satisfaction

An overall satisfaction index was derived from the item responses to the following:

Q. How satisfied are you with the following aspects of your job?

- *The sense of achievement you get from your work*
- *The scope for using your own initiative*
- *The amount of influence you have over your job*
- *The training you receive*
- *The amount of pay you receive*
- *Your job security*
- *The work itself*
- *The amount of involvement you have in decision making at this workplace*

The possible responses for each item were: very satisfied, satisfied, neither satisfied nor dissatisfied, dissatisfied, and very dissatisfied. Responses were coded on a 1-5 scale with 'very satisfied' being coded a 5, 'satisfied' coded a 4, and so on.

The responses for each item were summed and then divided by the number of items the respondent filled out to give an overall satisfaction index. The Cronbach's alpha is 0.85.

Stress from work

A stress index was generated from three items relating to the extent which a respondent's job made them stressed:

Q. Thinking of the past few weeks, how much of the time has your job made you feel the following?

- *Tense*
- *Worried*
- *Uneasy*

There are five possible responses: all of the time (coded 4), most of the time, some of the time (coded 2), occasionally, and never (coded 0). The responses for each item were summed and then divided by the number of items the respondent filled out to give an overall stress index ranging from 0-4. The Cronbach's alpha is 0.84.

Discretion

A discretion index was generated from five items relating to the extent to which employees had influence over various aspects of work:

Q. In general, how much influence do you have over the following?

- *What tasks you do in your job*
- *The pace at which you do your work*
- *How you do your work*
- *The order in which you carry out your tasks*
- *The time you start or finish your working day*

Respondents were asked to rate each of the five items on a four-point scale: none (coded 0), a little (coded 1), some (coded 2), and a lot (coded 3). The responses for each item were summed and then divided by the number of items the respondent filled out to give an overall discretion index ranging from 0-3. The Cronbach's alpha is 0.81.

Job security

Unlike the measures of satisfaction, stress and autonomy, the measure of job security is derived from a single item measure. A score for job security was derived from the following:

- Q. Do you agree or disagree with the following statements about your job?*
- *I feel my job is secure in this workplace*

Respondents were asked to rate their perceptions of job security on a 1-5 point scale: strongly agree (coded 5), agree (coded 4), neither agree nor disagree (coded 3), disagree (coded 2) and strongly disagree (coded 1).

Limitations

There are of course weaknesses in WERS relative to other surveys that could have been used to examine the workplace determinants of job quality, other than a vastly stripped down set of workplace determinants and only one observation per workplace. These should be mentioned as they could potentially introduce several sources of bias into the findings.⁴ First, the possible responses to the questions from which the dependent variables are derived offer respondents only a simple five-point scale. In other surveys that contain variables on job quality and job satisfaction (e.g. BHPS), respondents are faced with a more detailed seven-point scale. Thus, with WERS, the measurement is cruder less sensitive and important variation in responses may be lost. Second, the SEQ component of WERS from which the dependent variables are drawn from is a self-completion questionnaire. The BHPS, for instance, is administered via a

⁴ For a detailed critique of the design of the SEQ component for WERS98, much of which still applies to the SEQ in WERS04, see Rose (2000).

professionally trained interviewer and may reduce the associated problems of a self-completion questionnaire such as inconsistent answers, reduces the number of vague or incomplete answers as the interviewer can probe the respondent, reduce the number of unrealistic responses, reduce acquiescence bias, and so on. Third, there may be a possible self-selection bias in the sample of workplaces as not all managers agreed for their workplace to participate in the SEQ. There is also the self-selection bias amongst employees that actually return the SEQ. A final problem is that there is little comparability of many of the questions in the SEQ, particularly the facets of job satisfaction used in WERS so it is difficult to check the reliability against the findings of surveys (Rose 2000:9).

In addition, there is always the problem of endogeneity. It is not accident that a particular workplace implements productivity-enhancing practices. Furthermore, since the data used is cross-sectional, it is difficult to know for sure the arrow of causation for the association reported. Nonetheless, this paper represents a first step into studying the well-being implications, using a large representative dataset, in examining the implications of HRM and workplace labour productivity for employees.

