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ENRICHED JOB DESIGN, HIGH INVOLVEMENT MANAGEMENT AND ORGANIZATIONAL PERFORMANCE: THE MEDIATING ROLES OF JOB SATISFACTION AND WELL-BEING

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Abstract

The relationship between organizational performance and two dimensions of the widely known 'high performance work system' – enriched job design and high involvement management (HIM) – is assumed to be mediated by worker well-being. We outline the basis for three models: mutual-gains in which employee involvement increases well-being and this mediates its positive relationship with performance; conflicting outcomes which associates involvement with increased stress for workers that accounts for its positive performance effects; and counteracting effects which associates involvement with increased stress and dissatisfaction, and reduces its positive performance effects. These are tested using the UK's Workplace Employment Relations Survey 2004 (WERS2004). Results show that job satisfaction mediates the relationship between enriched job design and four performance indicators, supporting the mutual gains model; but HIM is negatively related to job satisfaction and this depresses a positive relationship between HIM and the economic performance measures, supporting a counteracting effects model. Finally, HIM is negatively related to job-related anxiety–comfort but this plays no mediating role in the link to performance. It is also unrelated to enriched job design.

Keywords High involvement management Enriched job design Well-being Stress Job satisfaction Financial performance Labour Productivity Quality Absenteeism Multi-level analysis

Enriched job design, high involvement management and organizational performance: The mediating roles of job satisfaction and well-being

Direct employee participation is one of the most widely advocated interventions for influencing organizational performance and worker well-being (Humphrey et al., 2007; Parker et al., 2001). It is central to modern organizational concepts such as Lawler's (1986) high involvement management (HIM), human resource management (HRM) (Guest, 1987), the mutual gains enterprise (Kochan and Osterman, 1994), and the high performance work system (Appelbaum et al., 2000; Benson and Lawler, 2003; Cappelli and Neumark, 2001).

Two types of opportunity for direct participation are associated with these management models: a) the design of jobs that give their holders discretion, variety and high levels of responsibility; and b) organizational involvement methods that extend beyond the narrow confines of the job, such as teamworking, idea-capturing schemes and functional flexibility. Type a) is associated with the job redesign movement and the concept of job enrichment. Type b) is associated with the high involvement or commitment model that emerged out of this movement, particularly through its popularization by Lawler (1986) and Walton (1985). It is widely expected that these forms of employee involvement enhance the quality of individuals' working lives and their well-being and performance, and consequently the performance of organizations.

Originating in the 1990s, following the emergence of high-involvement or high-commitment management, much of the research on workplace employment systems or HRM has concentrated on the performance effects of organization-level practices (e.g. Batt, 2002; Cappelli and Neumark, 2001; Huselid, 1995; MacDuffie, 1995; Wood and De Menezes, 2008). Involvement at the job level has, however, been increasingly neglected in this high performance work systems (HPWS) literature (Wood and Wall, 2007). Gibson et al.

(2007:1468) even concluded that this literature has become discrete from that on employee involvement or empowerment.

Yet, job design is included in recent studies on the implications of HPWS for employee well-being and job satisfaction (Appelbaum et al., 2000; Barling et al., 2003; Berg, 1999; Harley et al., 2007; Macky and Boxall, 2007, 2008; Mohr and Zoghi, 2008; Takeuchi et al., 2009). Whilst testing for the positive effects of such systems on well-being, these studies have also considered their possible negative effects on workers' stress levels (Thompson and Harley, 2007:157). The evidence, nonetheless, has predominantly shown positive associations with well-being.

As yet, no study has assessed the role of employee well-being in explaining the association between involvement-centred HRM and economic performance. This paper reports assessment of the extent to which enriched job design and HIM are associated with employee well-being and four measures of organizational performance, and whether links to organizational performance are mediated by well-being; and if so, is the relationship between involvement and well-being positive as predicted by the orthodox high performance theory, or negative as in the critical management-by-stress perspective. As the theories underlying the employee involvement–well-being–performance nexus remain underdeveloped, we first outline various ways in which involvement may affect (positively and negatively) well-being and mediate the relationships between involvement and organizational performance. We investigate the extent and nature of any mediation using the Workplace Employment Relations Survey 2004 (WERS2004), which covers the British economy and measures job satisfaction and anxiety–comfort. They thus cover two out of three of the commonly considered dimensions of well-being, the third being depression–enthusiasm (Warr, 1990, 2007). [1]

High involvement management and enriched job design

We differentiate high involvement management and enriched job design on the basis of Wall et al.'s (2004a) distinction between role and organizational involvement. Enriched job design is concerned with role involvement, which concentrates on the employee's core job, while HIM is about organizational involvement, which entails workers participating in decision-making beyond the narrow confines of the job. Consequently, under HIM, workers are involved in work organization decisions and other immediate aspects of their environment, as well as in the 'business as a whole' (Benson and Lawler, 2003:156).

Since all jobs are designed, we adopt the term enriched job design to refer to an approach (Arthur, 1994) or orientation (Wood and De Menezes, 2008) to the design of high-quality jobs that allows employees an element of discretion and flexibility over how they execute and manage their primary tasks (Walton, 1985:79). HIM, in contrast, is an approach to management that encourages greater pro-activity, flexibility and collaboration from workers. It is manifested in the use of practices that offer opportunities for organizational involvement either directly – through idea-capturing schemes, teamwork and flexible job descriptions – or indirectly, through information dissemination or specific training for involvement (Lawler, 1986). HIM aims to induce the adaptation and pro-activity that Griffin et al. (2007) see as increasingly characterizing the requirements of a continuous improvement culture. It is thus concerned with the development of broader horizons amongst all workers, so that they can think of better ways of doing their jobs, connect what they do with what others do, and react effectively to novel problems.

Whilst Lawler's and others' prescriptions imply that enriched job design and HIM should be part of a unified approach to management, it is by no means certain that all, or even many,

managements follow such a unified approach. Presently, this remains an empirical question. Nonetheless, the evidence from De Menezes and Wood's (2006) analysis of UK data (Workplace Industrial Relations Survey 1998) shows that enriched job design and HIM are discrete: they reflect two distinct orientations whose correlation is weak (r=0.07). This finding supports observations from case studies on involvement practices, many of which were set in traditional assembly-line production systems, where the design of core jobs had typically been largely unaffected by them (Rinehart et al., 1997; Wickens, 1988; Womack et al., 1990; Wood, 1988). Organizational involvement may thus change the nature of work by increasing demands on employees, for example when they are encouraged to participate in idea-capturing schemes, while the level of autonomy or variety when carrying out core functions is unaffected. Such an imposition of HIM on low autonomy jobs is consistent with the prescriptive writing that emphasizes its applicability to all production regimes (e.g. Kanter, 1989; Walton, 1985; Wickens, 1995).

Mutual gains: well-being as mediator of positive association between HIM and enriched job design and performance

In the HRM–performance literature, role and organizational involvement are typically not differentiated when measuring the HRM element, and theories on the link between performance and HIM, or more generally HRM, tend to concentrate on the intrinsic satisfaction derived from increased autonomy. The mediating role of job satisfaction is embedded in much of the HPWS literature, as it is assumed such systems create 'better work environments for employees' (Barling et al., 2003:277) and enhance job satisfaction, which in turn contributes to superior organizational performance. It is thus a mutual gains perspective on job design, which rests on the 'happy workers being productive' thesis

(Wright and Cropanzano, 2007): employers and employees can simultaneously benefit from increased involvement.

Discussion specifically about why HIM might enhance well-being has, however, been limited as past assumptions about job design have been extended to HIM. Enriched jobs have long been associated with increased autonomy, meaningfulness of work and skill utilization, which are welcomed rewards that lead to a pleasurable and emotional state, and job satisfaction (Hackman and Oldman, 1980). In keeping with the latest developments in job design theory, we might add that job autonomy also gives greater scope for individuals to shape or craft their own jobs (Daniels, 2011:14) and hence enhance further their person–job fit, variety and well-being.

It may be that the greater role breadth and opportunities for generating ideas and making suggestions that HIM similarly increases in the variety of work, skill utilization and the meaningfulness of work, even if there is no concomitant increase in job discretion. But, since it is about encouraging adaptive and pro-active behaviour from workers, extending theories at the job level to organizational involvement may be insufficient.

Indeed, we envisage that there are several additional routes through which HIM impacts on employee outcomes. First, teamwork, functional flexibility, and group methods of capturing ideas may increase social contact, another source of job satisfaction (Warr, 2007:86–7) that also can reduce job anxiety. Second, information-sharing and workers' greater understanding of the organization's objectives and their role in the achievement of goals may reduce uncertainty in the work environment. Third, insofar as HIM produces positive outcomes or perceptions of organizational success, workers may perceive their jobs as more secure or their career prospects as more promising. Fourth, the encouragement to be involved in the organization that is implicit in HIM may signal to employees that they are respected and acknowledged, which may increase their self-esteem, particularly as their

learning rate and trust in management increases (Macky and Boxall, 2007). Work is more likely to be seen as a career, and there is evidence that those for whom work is a career or calling are more satisfied (Warr, 2007:125). Finally, Mackie et al. (2001:1070–1) argue that the increased meaningfulness, manageability, and comprehensibility of work and organizational life associated with HIM enhances individuals' sense of coherence, which in turn improves their coping mechanisms and ability to withstand stress.

If we formulate our hypotheses in terms of the two measures of well-being we have in our data set – job satisfaction and anxiety–comfort – we can summarize the mutual gains model thus:

> ***Hypothesis 1***: *(a) enriched job design and (b) high involvement management are positively associated with job satisfaction and anxiety–comfort, and these mediate their positive relationships with organizational performance.*

Even if enriched job design and HIM are discrete and differently affect well-being, they may have joint effects. On the one hand, under HIM, workers may be more knowledgeable and confident; hence they may take more advantage of the discretion they have in their core job or of any opportunities that might arise to reduce constraints on achieving high levels of satisfaction or performance. The feeling of being more valued, when HIM is practiced, may amplify any similar emotions generated by enriched job design. In addition, some of the problems that have been associated with explicit work enrichment programmes may be less common in a HIM regime; for example, it may reduce the chances of supervisors constraining subordinates' use of discretion, as they did in Lawler et al.'s (1973) study of job enrichment for telephone operators. On the other hand, the effect of HIM may be less when individuals are in highly constrained jobs. In such a context, employees may react cynically if management encourages their involvement in organizational decisions; given their continued

low level of job discretion, workers may reason that their suggestions will not be taken seriously or will not be fairly rewarded.

Conflicting outcomes: mediating effect of negative well-being on association between HIM and enriched job design and performance

One of the impetuses behind critical management studies was that job design is largely a form of intensifying work, and subsequently this argument has also been applied to HIM. It was argued that any gains for workers from job redesigns were largely in the form of real wage increases (Kelly, 1992), and insofar as these were seen as just rewards for increased effort, they would not have a significant effect on satisfaction. Similarly, HIM may simply increase the demands on workers and will not change the nature or level of intrinsic satisfaction.

Nonetheless, people have associated the intensification of work resulting from enriched job design and HIM with stress. Furthermore, stress is taken to be more than a derivative of the increased demands, as it contributes to the extra effort that this theory associates with job design and HIM. Parker and Slaughter (1988) reflected this sentiment by their umbrella term 'management by stress'. In a similar vein, Ramsey et al. (2000:505) presented their thesis as the 'labour process theory of high performance work systems' (HPWS), according to which, whilst HPWS may enhance discretion, their work practices and 'the added responsibility associated with enhanced discretion, insecurity and work intensification' may increase stress. The work intensification and job strain is then 'a key explanatory factor in improved organizational theory'.

The core element of this theory is Braverman's (1974) interpretation that labour intensification and managerial controls are imperatives in capitalism. Yet, diverging from Braverman, it is not assumed that 'Taylorism' is the only method of control (Edwards, 1979;

Wood and Kelly, 1982). Thus, innovations in job design or involvement can be means of overcoming pressures generated by Taylorism (Wood, 1993). Consistent with this, Barker (1993) has highlighted the way teamworking and practices associated with HIM may entail peer control and thus provide a form of control over workers (concertive in Barker's terms). This and other forms of coercion that have been associated with modern HRM may undermine expectations that HIM generates the kinds of positive effects we outlined in our presentation of the mutual-gains mediation theory.

Rather, in the critical management theory outlined above, stress is the dominant concomitant of the types of coercion entailed in modern HRM, and this may generate conflicting outcomes for employers and employees and not the mutual gains assumed in the mainstream HRM literature. The negative effect on well-being mediates the relationship between job design or HIM and organizational performance.

The term stress has been used in critical management literature, often with little precision, to capture these negative effects. Adopting the circumplex approach, we expect that anxiety–comfort is the key dimension of well-being that plays the mediating role in the 'management-by-stress' theory, as this is associated with increased arousal and activated performance, whereas depression is associated with lower arousal. Since management-by-stress theorists do not distinguish between the two forms of involvement, we apply their theory to both enriched job designs and HIM. Depending on the extent to which anxiety contributes to any general level of dissatisfaction, we might expect this to have less of a positive association with performance. We can thus summarize this management by stress or labour process theory in the following hypothesis:

Hypothesis 2: *(a) enriched job design and (b) high involvement management are negatively associated with job satisfaction and anxiety–comfort, and these, particularly*

anxiety–comfort, mediate a positive relationship between the two forms of involvement and organizational performance.

We might also expect an interaction effect between enriched job design and HIM as, on the one hand, anxiety in one domain may amplify that in another, and their effect on any outcome.

Counteracting effects: effect of HIM and enriched job design on negative well-being

Both within and outside of the critical management debate, there has been some questioning of the extent to which HPWS deliver the associated performance effects or at least in any sustainable way. It may be that any dissatisfaction surrounding involvement, and particularly HIM, may play a role in this. Godard (2004), noting that not all studies of HRM systems have strong performance effects, focuses on how conflict and distrust derived from the nature of the employment relationship may undermine such initiatives. A history of distrust coupled with a tendency for managements to use involvement and HPWS to intensify work, Godard argues, mean that they only have limited or short-term impacts. In a similar vein, Thompson (2011) argues that such human resource innovations may be undermined by the failure of employers to reciprocate their increased demands for involvement from workers with job security, wage increases, and we could add genuine development and promotion opportunities. Instead, he states, there has been an associated increase in numerical flexibility and job insecurity as they have sought to shift 'the burden of risk from capital to labour' which gels with its policy of increasing the 'full utilization of employee labour power' (Thompson, 2011:8). Such reasoning is especially applicable, it has been argued, in liberal market systems such as the UK and USA, in contrast to coordinated economies such as Germany and Sweden where there may be higher levels of trust and employers are less prone to use innovations without reciprocation (Godard, 2004).

Taking our lead from such arguments, we generate an alternative to both the mutual gains and conflicting outcomes mediation arguments, which posits that the effect of involvement management-induced worker outcomes will be to reduce performance gains. Involvement approaches can have positive effects on organizational performance but any dissatisfaction, reduced enthusiasm, or increased anxiety resulting from work intensification may reduce, but not totally undermine, such benefits. The effect of employee dissatisfaction and negative well-being is then analogous to the side effect of treatment. The direct effect of involvement on performance may be positive, even in the case of absence and other human resource outcomes, as for example teamworking puts more pressure on employees to be present, but the indirect effect on worker outcomes (the side effect) is negative and this may cancel out or reduce any advantage that the involvement (treatment) may have. We can formulate this thesis thus:

> ***Hypothesis 3***: *(a) enriched job design and (b) high involvement management are positively associated with organizational performance and negatively associated with job satisfaction and job-related anxiety–comfort, and the latter relationships reduce the overall benefit of the two forms of involvement for organization performance.*

Again, we might expect the outcomes to be greater as HIM and enriched job designs are used in combination.

The evidence for well-being's mediating role

As yet, no study has tested well-being as a positive or negative mediator of enriched job design and HIM's association with organizational performance. The only study that considered job satisfaction as a mediator (Barling et al., 2003) concentrated on occupational injuries, and found that job design (in Barling et al.'s terms, 'high quality jobs') did reduce these and the relationship was partially mediated by job satisfaction, but it did not consider

organizational involvement. Evidence for links between different elements in the mediation chain, for example between employee involvement and organizational performance, and between these and well-being, does, however, exist and looks most promising for the mutual gains theory.

First, HRM–performance studies are widely credited as showing a positive link, if not causal relationship (Wall and Wood, 2005), between HRM and valued organizational outcomes (Barling et al., 2003:277; Becker and Gerhart, 1996; Guest, 1997). This has been confirmed by a meta-analysis of HRM–performance studies (Combs et al., 2006) that reported an average uncorrected correlation of 0.11 across the relationships between single practices and organizational performance. Despite the increasing neglect of involvement, most of these studies included some practices connected to either one or both enriched job design and HIM; so they suggest that there is a positive relationship between involvement and performance to be mediated. Nonetheless three practices out of a total of 12 in Combs et al.'s meta-analysis, that are in our terms high involvement practices – teams, appraisal and information-sharing – were found to be unrelated to performance.

Second, studies on the link between HRM systems and well-being that included involvement have produced promising results, but have concentrated on job satisfaction and used divergent measures of HRM systems (e.g. Appelbaum et al., 2000; Harley et al., 2007). Mohr and Zoghi's (2008) study came the closest to measuring our concept of HIM, as they used an index of participation in practices such as suggestion schemes and quality circles, and found that it was associated with job satisfaction. Macky and Boxall (2007) also found, in a New Zealand sample, that an index covering a broad spectrum of high performance work practices was associated with job satisfaction.

The studies that include measures of stress have produced mixed results. Godard's (2010) study, which included both job satisfaction and stress, found in a sample of Canadian workers

a similar positive relationship between satisfaction and what he calls: a) alternative work practices, and b) new human resource practices. However, stress was positively related to the new human resource practices but not alternative work practices, the latter being about the team, functional flexibility and idea-capturing elements of high involvement management, the former being more about the supports for this, for example the use of appraisal and development. A replication of this study on a smaller English sample did not, however, produce similar results, suggesting that national institutional differences may be important. No measure of enriched job design is included in the analysis.

Another study in Finland (Kalmi and Kauhanen, 2008), with a limited number of high-involvement practices, found that self-managed teams and disclosure of information positively related to job satisfaction and information disclosure (but not teams) was negatively related to stress. A Dutch study (Kroon et al., 2009) found that a measure of HPWS was positively related to emotional exhaustion and this was mediated by job demands, as HPWS were correlated with high demands.

There is also a longer tradition of studies focused just on job design (Cotton, 1993:141–72; Fried and Ferris, 1987; Humphrey et al., 2007; Parker and Ohly, 2008) or on testing the Karasek (1979) model of strain, in which job discretion is a determinant (De Lange et al., 2003; Van Der Doef and Maes, 1999). Both types have tended to show either a positive relationship between employees' job discretion and job satisfaction or a negative relationship with measures of strain such as burn-out, anxiety, or depression.

Finally, Judge et al.'s (2001) review of the studies on the link between job satisfaction and performance showed that the uncorrected average correlation was 0.18, which increases to 0.30 after correction for unreliability, and might even be larger when jobs are complex (Schleicher et al., 2004). In addition, the few studies that tested the relationship between the levels of job satisfaction and organizational performance found a significant association

(Koys, 2001; Ostroff, 1992; Patterson et al., 2004; Schneider et al., 2003). Harter et al.'s (2002) meta-analysis yielded an average uncorrected correlation between job satisfaction and productivity of 0.12, and an average between job satisfaction and profitability of 0.09.

Warr's (2007:415–417) review of studies of anxiety, depression or emotional exhaustion on performance, all at the individual level, shows that they are invariably linked with lower performance. Anxiety particularly inhibits learning and sustained effective working. Absence is related to job dissatisfaction, and stress is related to absence (Johns, 2008). Hardy et al.'s (2003) unique study found that all three of job satisfaction, anxiety and depression were related to absence but that job-related depression was more strongly related to absenteeism than was job-related anxiety, which reflects the association of anxiety with high arousal, and depression with low levels of arousal.

Overall, there is sufficient evidence on each path in the mediation chain – from employee involvement practices to performance via well-being – to suggest that a study of management's approaches towards involvement could support the positive mediation thesis. Nevertheless, the evidence on the well-being–performance association might suggest there may also be support for the critical management studies argument that stress and/or dissatisfaction may be counterproductive for the effects of involvement.

The study

The study aims to test the three competing hypotheses using a single model to assess: a) whether the association between enriched job design and HIM and well-being is positive or negative; and b) the role it plays in explaining or reducing a positive association between enriched job design and HIM and organizational performance. The model for testing the hypotheses is depicted in Figure 1. Since we have both employer and employee data, it is a

two-level mediation model. Given our conjectures about the joint effects of enriched job designs and HIM, we also test for their interaction.

The data

The data used are from two elements of the UK's WERS2004. Workplace data were collected by interviewing a manager in each workplace – known as the management survey – and employee data through a survey of employees in workplaces that were included in the management survey.

The management survey interviews were face-to-face with the senior person at the workplace with day-to-day responsibility for industrial relations, employee relations or personnel matters, the majority of whom were not personnel specialists. Interviews were conducted with managers in 2,295 workplaces from an in-scope sample of 3,587 addresses, representing a response rate of 64%. The sample covers the private and public sector, and all industries with establishments engaged in primary industries and private households with domestic staff (7% of all workplaces). Establishments with fewer than five employees were excluded. The sample was taken from the Inter-Departmental Business Register, maintained by the UK's Office for National Statistics.

The employee data were collected via an eight-page, self-completion questionnaire that was distributed within workplaces where WERS surveyors had conducted the management interviews. The survey within WERS2004 produced a sample of 22,451 employees, which represented a response rate of 61%. In each workplace, the aim was for up to 25 employees, selected on a random basis, to complete the questionnaire. After selecting workplaces and individual employees with complete information on all variables for the analysis, the final sample in this study covers 14,127 employees and 1,177 workplaces. The median number of employees per workplace completing the questionnaire is 12, with the most frequent (in 74

workplaces) being 18 employees. The number of responding employees per workplace ranged from 1 to 25 (mean: 12.21; standard deviation: 6.14).

The measures

The management practice measures

Enriched job design The following three job design practices are used, based on information from the management survey on a typical employee in the largest occupational group within the workplace: 1) task variety: variety in the work; 2) method control: discretion over how the work is done; 3) timing control: control over the pace at which the work is carried out. Originally ordinal, the distributions of the variables are skewed and thus we followed De Menezes and Wood (2006:115–6) and recoded them into binary variables, using the median proportion of usage as the cut-off point. A latent trait model (see appendix in Wood and De Menezes, 1998:411–414 for details) confirmed that job design practices are reducible to a unidimensional scale [70% of the log-likelihood ratio statistic (G^2) is explained]. The scores from this model are used as our measure of enriched job design.

High involvement management Following De Menezes and Wood's (2006) analysis of the 1998 WERS data the high involvement items are: functional flexibility (20% or more of the core occupational group are formally trained to do jobs other than their own); quality circles ('Do you have groups at this workplace that solve specific problems or discuss aspects of performance or quality? They are sometimes known as quality circles or problem-solving or continuous improvement groups.'); suggestion schemes (management uses suggestion schemes to consult with employees); teamwork (60% or more of the core occupational group work in formally designated teams); induction (a standard induction programme designed to introduce new employees in the largest occupational group to the workplace); interpersonal skills training (employees in the largest occupational group have received off-the-job training

on one or both of improving communication and teamworking in the past year); team briefing (the workplace has briefing groups or team briefing for all workers in a section that includes discussion of work organization); information disclosure (management gives regular information on one or more of: the financial position of the establishment, internal investment plans or staffing plans); and appraisal (80% or more of the non-managerial staff in the workplace have their performance formally appraised). The majority of these practices are measured as binary in WERS2004; the exceptions are appraisal, functional flexibility and teamwork, whose distributions are either skewed or bimodal and thus were recoded as binary variables using the median proportion of usage as a cut-off point. A one-factor latent trait model fits the data well [63% of the log-likelihood ratio (G^2) is explained]. The measure of high involvement management is based on the scores from this model.

A one-factor model of the combined set of enriched job design and high involvement practices could not fit the data (35% of G^2 was explained), which confirms that they are separate constructs. The correlation between our measures of enriched job design and latent variables is insignificant (r=-0.03, P= 0.18), thus reconfirming their independence.

The well-being measures

Job satisfaction The measure is based on respondents' satisfaction with eight facets of work: the amount of influence the person has over their job, the amount of pay they received, the sense of achievement they get from their work, the scope for using initiative, the training they received, their job security, involvement in decision-making, and the work itself. Respondents rated their satisfaction on a five-point scale: 'very satisfied', 'satisfied', 'neither satisfied nor dissatisfied', 'dissatisfied' or 'very dissatisfied'. Principal component analysis confirmed a single dimension that explains 50% of the variance, whose factor loadings ranged from 0.51 to 0.82. Job satisfaction is measured by the mean scores on all eight-items,

but when five or more of these items were missing, it was coded as missing. The scale has a reliability statistic of 0.85, measured by Cronbach's alpha.

Job-related anxiety–comfort This is measured by Warr's anxiety–comfort scale (1990), which is based on answers to the question: 'Thinking of the past few weeks, how much of the time has your job made you feel...?', for each of six emotional states, these being three positive states – relaxed, calm, and contented – and three negative ones – tense, worried, and uneasy. The survey adopted a five-point scale: 'all of the time', 'most of the time', 'some of the time', 'occasionally' or 'never'. Anxiety–comfort is measured by the mean scores on the six emotional states (Cronbach's alpha = 0.85).[2]

The performance measures

Financial performance, labour productivity and quality Each measure is based on a rating made by the managerial respondent during the interview according to a five-point scale that ranged from 'a lot better than average for our branch of industry' to 'a lot below average'.

Absenteeism The percentage of work days lost through employee sickness or absence is available for every workplace. Since the distribution of this measure is skewed and long-tailed we took its logarithm and adjusted the few workplaces that had zero percentage.

Control variables

In testing our hypotheses, we included control variables at the workplace level and at the individual employee level, selected in light of previous studies based on the WERS series (e.g. Bryson et al., 2005; Gazioglu, and Tansel, 2006; Wood and De Menezes, 2011, on well-being; Wood and De Menezes, 1998, 2008, on economic performance).

At the workplace level we considered:

Employment size of workplace The logarithm of the total number of employees in the workplace.

Part of a larger organization Where the workplace is part of a larger organization equals 1, and is a single site organization equals 0.

Private sector workplace Where the workplace is in the private sector equals 1, and if in the public or voluntary sector equals 0.

Trade union recognition In workplaces where at least one trade union is recognized by management for collective bargaining equals 1, otherwise it equals 0.

Industry Eleven industry dummy variables using the Standard Industrial Classification, with wholesale and retail as the reference category.

The following controls were included at the employee level: gender (where woman equals 0 and man equals 1), whether the respondent is a manager (equals 1) or not (equals 0), whether the respondent has a degree (equals 1) or not (equals 0), age, tenure, hours worked, and weekly wages.

The analyses

The model for testing our three hypotheses is a two-level mediation model, as set out in Figure 1. Since employees are nested within workplaces, observations at the employee level are not statistically independent and multilevel analysis is mandatory. Aggregating the individual-level variables to workplace-level mean scores is not adequate since the variances of the aggregated variables and their covariances reflect both between-group variation and within-group variability. An analysis of the aggregated data would confound both sources of variability. We need then to take the multilevel nature of our data into account when testing for mediation.

– INSERT FIGURE 1 ABOUT HERE –

In recent methods literature, this type of model is referred to as a 2-1-2 multilevel mediation model (MacKinnon 2008; Preacher et al., 2010), where the employee (level 1) data are a mediator in a linkage between workplace (level 2) antecedents and outcomes. We estimate the model using Mplus (version 5.1; Muthen and Muthen, 2010) and follow the one-stage procedure developed by Croon and Van Veldhoven (2007) which estimates simultaneously the unique contributions of direct and indirect pathways (via job related well-being) in explaining the performance outcomes. This procedure is similar to the traditional Baron and Kenny (1986) mediation test, but omits their increasingly questioned first step of establishing that the initial variable is significantly related to the outcome variable, since a non-significant outcome of the first step may be misleading because indirect and direct effects may cancel each other out (James et al., 2006), as might be the case if hypothesis 3 were supported.

Results

Modelling the relationships amongst enriched job designs, HIM, well-being and performance

The Pearson coefficient between the measures of job satisfaction and job-related anxiety–comfort at the individual employee level is equal to 0.45. The workplace economic performance variables are moderately positively correlated with each other: the coefficients are 0.43 between financial performance and labour productivity, 0.30 between financial performance and quality, 0.35 between labour productivity and quality. The employee behaviour outcome absenteeism is weakly correlated with the other outcomes, the highest is -0.09 with labour productivity.

The need for multilevel models is confirmed by the intra-class correlation, which measures the extent to which the well-being of individuals in the same workplace is different compared to those of individuals in other workplaces (ICC1). The workplace variables explain 12% of the variance in job satisfaction, and 7% in job-related anxiety–comfort. The amount of ICC1

is comparable to what one would expect in work and organizational research (Klein et al., 2000:517–8). Another vital statistic concerns the reliability of between-workplace comparisons in well-being (ICC2). This coefficient is 0.53 for anxiety–comfort and 0.66 for job satisfaction, which are adequate according to standards proposed by Klein et al.

The core results are presented in Table 1, where Part A summarizes the direct effects of high involvement management, enriched job design, job satisfaction and anxiety–comfort on the performance measures. These standardized direct effects are corrected for all other paths in the model, including indirect.

The results are also summarized in Figure 2. We find that one of the hypothesized mediators, job satisfaction, is directly related to all four indicators of organizational performance. That is, higher job satisfaction is associated with higher financial performance, higher labour productivity, lower absenteeism, and better quality. Yet, job-related anxiety–comfort is not directly associated with any performance outcome.

– INSERT TABLE 1 ABOUT HERE –

– INSERT FIGURE 2 ABOUT HERE –

High involvement management is directly and positively related to labour productivity, financial performance, and quality, but not to absenteeism. HIM is also related to job satisfaction and job-related anxiety–comfort. These relationships are, however, negative, suggesting that HIM may be a source of dissatisfaction with the job as well as anxiety. In contrast, enriched job design is only positively related with quality and job satisfaction. It is also independent of job-related anxiety–comfort.

The lower part of Table 1 (Part B) reports the standardized, mediated or indirect effects of HIM and enriched job design on the four performance measures through job satisfaction and job-related anxiety–comfort. Those of enriched job design through job

satisfaction are significant on three performance measures: financial performance, labour productivity, and quality. All these mediated effects are positive.

For HIM, there are significant indirect effects through job satisfaction on the same three outcomes; however, these effects are all negative. The negative effect of HIM on job satisfaction depresses its overall positive effects on organizational performance. None of the hypothesized indirect effects for either enriched jobs or HIM through job-related anxiety–comfort are significant.

No control variables affected all four performance outcomes and none is associated with labour productivity. Some do, however, have effects on a performance measure. Workplace size (0.07) and industry sector (0.08 for transport sector and financial services sector) are positively associated with financial performance at the 5% significance level, while union representation (-0.08) is negatively associated with it at the same level. Workplace size (0.16) and being part of a larger organization (0.10) are positively related to absenteeism, while industry sector (-0.05 for the electricity and public utilities sector) is negatively related to it, all at the 1% level. Being in the public sector (-0.06, $p<0.05$) and part of a larger organization (-0.21, $p<0.01$) both correlate negatively with quality, while two industry sectors are positively related to it (0.11, $p<0.01$ for manufacturing, and 0.12, $p<0.01$ for other business).

At the employee level, being a woman (-0.25), age (0.12), tenure (-0.24), and being a manager (0.13) are all positively associated with job satisfaction at the 1% level, while hours/week (-0.15) is negatively associated with it. Being a woman (0.28), age (0.18), and being a manager (0.11) are positively associated with job-related anxiety–comfort, while wage (-0.38) and hours/week (-0.19) are both negatively related to it, all at the 1% level. The relative strength of the negative path coefficient of wage level on job-related anxiety–comfort is particularly high, but with this exception, the size of the coefficients of enriched job design and HIM compare favourably with those of significant control variables.

The well-being measures are better captured by the model than the organizational performance measures (the variances explained are respectively 25% of job satisfaction and 35% in job-related anxiety–comfort, while R^2 for financial performance is 10%, for labour productivity 7%, for absenteeism 14% and for quality 12%). When taken in combination, the control variables are important, as they make the largest contribution for financial productivity, quality, job satisfaction and job-related anxiety–comfort. However, HIM and enriched job designs are more significant in explaining labour productivity and absenteeism. The former is largely unrelated to the controls.

Adding the interaction between enriched job design and HIM to the model presented in Table 1 did not increase its explanatory power nor was the interaction term associated with performance or well-being. Enriched job design and HIM thus have distinctive, independent relationships with organizational performance and occupational well-being.

Hypothesis 1 is thus supported for enriched job design with job satisfaction as a mediator, for all economic outcomes but not for absenteeism, the human resource outcome. The results for HIM offer support for Hypothesis 3, again with job satisfaction as the mediating link. HIM is associated with increased dissatisfaction at the expense of some of its overall positive link with performance; without this dissatisfaction these would be greater.

These results support the mutual gains perspective for one managerial approach, enriched job design, with job satisfaction as the mediator. So hypothesis 1 is supported in this case. However, the counteracting outcomes thesis is supported in the case of HIM and job satisfaction. Hypothesis 2 is not supported by our results.

Nor are there any mediated linkages – positive or negative – involving job-related anxiety–comfort. Yet HIM does appear to reduce job-related anxiety–comfort (or increase anxiety), but the effect is not strong. HIM thus has a direct effect on financial performance and productivity and to a lesser extent on quality, while decreasing the comfort of workers,

though unlike the effect of job satisfaction this effect does not attenuate the performance gains from high involvement.

The combined direct and indirect effect of enriched job design on financial performance and productivity is strongly positive and mediated by job satisfaction (see Table 2). For quality, both direct and indirect effects explain its strong link with enriched job design, which has a significant overall negative effect on absenteeism.

In contrast, the two competing effects of HIM – its positive direct effect on economic performance and negative effect on satisfaction – cancel each other out: on quality and productivity the overall effect is insignificant, while for financial performance the overall effect is considerably less strong than the direct effects. Whilst there is a significant indirect positive effect of HIM on absenteeism, the overall effect is insignificant.

– INSERT TABLE 2 ABOUT HERE –

Discussion

Our study shows different relationships between enriched job design and HIM and organizational performance, and between the two measures of worker well-being and organizational performance. This diversity vindicates our emphasis on differentiating the two types of involvement orientations and treating well-being as multi-dimensional.

In terms of our central concern, the mediating role of well-being, the results are strong for both types of involvement and job satisfaction, as the relationship between involvement and the three economic outcomes – financial performance, productivity, and quality – is mediated by job satisfaction. However, in the case of enriched job design the relationship between satisfaction and performance is positive whereas it is negative for HIM.

The enriched job design result is consistent with the mutual gains well-being perspective. Enriched job design has significantly positive total effects on financial performance, productivity, as well as quality. In addition, its total negative effect on absenteeism is also

significant. In the case of quality, the indirect relationships do not solely explain enriched job design's relationship to it, as a direct effect remains, when we control for mediation through job satisfaction. Quality is perhaps the outcome variable that we might expect to be most affected by other mediators, such as employees' learning orientation and role breadth, which have been broached in recent job design literature (Parker et al., 1997; Parker and Ohly, 2008). The lack of a strong mediation effect for absenteeism is consistent with the research that places justice perceptions as a far more significant social factor behind absence than job satisfaction (Johns, 2009).

In the association between HIM and job satisfaction, the relationships are consistently negative: dissatisfaction reduces the overall performance–HIM relationship, which is consistent with hypothesis 3. There are counteracting outcomes for employers and not simply between them and employees.

In addition, there are direct positive relationships between HIM and the economic outcomes, and the total effect on absenteeism is significant. The uniformity of the HIM–performance results across the three economic outcomes (in contrast to those for enriched job design where the relationship with quality was greater), chimes with our association of HIM with flexibility, pro-activity and teamworking. Such qualities in the workforce may mediate the relationship between HIM and performance.

The tests involving anxiety–comfort do not support any mediation hypothesis. On average, any increase in anxiety resulting from HIM is having neither a positive effect on performance, for example through reducing any complacency associated with calmness or raising the challenge employees feel, nor a negative effect, for example by reducing their concentration, effort or ability of learn.

However, there is a relationship between HIM and comfort, which is negative. This is however not particularly strong. In the average workplace, workers are typically not anxious

and any increase in HIM is likely to have only a slight adverse effect. Nonetheless, for some workers and in some workplaces its effects may be sufficiently great that outcomes for workers and employers may conflict; in extreme cases, HIM may move individuals closer to any critical tipping point in their anxiety, so their health and performance may be affected or they may leave the organization.

The differences in the results between job satisfaction and anxiety–comfort across both HIM and enriched job design suggest that the pleasure derived from work is more significant for performance than the level of arousal, or at least the anxiety–comfort dimension of well-being as identified in the circumflex model of emotions (Remington et al., 2000; Warr, 2007:19–49; Watson and Tellegen, 1985).

An explanation for a link between HIM and anxiety as well as dissatisfaction might follow from the management-by-stress theory thus: workers increase their effort levels in the core components of their jobs and this intensification accounts for increased dissatisfaction and anxiety. It may be that the mediating role of job satisfaction is higher than for anxiety–comfort as the correlation between high demands and satisfaction is higher. However, this was not borne out by an additional analysis we conducted that examined the relationship between HIM and workers' reported job demands (based on respondents' agreement with two statements: 'My job requires that I work very hard', 'I never seem to have enough time to get my work done'). The correlation between HIM and job demands is positive but not strong (0.19), suggesting that the effect of HIM is explained by other factors such as improvements in methods based on workers' suggestions, workers approaching their work flexibly, and helping each other out when problems arise.

Consistent with this, HIM entails a qualitative change in demands not a simple quantitative change in effort levels, and an explanation for the negative HIM–well-being relationship may be that management's approach towards encouraging employees to be

proactive and flexible creates anxieties and dissatisfaction. First, because its use may imply or be accompanied by pressures to improve employee performance. These may in turn raise concerns amongst employees about their competencies, their relationships with others, and psychological (and not just job) security. High involvement management may enhance worker's perceived obligations and in so doing jar with any sense of increased self-determination that thus far has been associated with the mutual gains model, or might even have been implied by management when promoting it or describing their personnel policies. It may be thought that such processes may be especially pronounced in cases where the effort levels are perceived as not too high or effects on non-work demands or working time are not onerous, but when we tested to see if demands moderated any of the relationships we found in the main analysis they did not.

Following Thompson (2011) we might connect these psychological states to the wider political economy, in that people perceive themselves as surrounded by a pressured environment which inhibits the creation of the irenic ambience in which HIM may need to thrive. Rather than HIM creating an increased sense of coherency or a feeling of being valued by the organization, as we suggested in our rendering of a mutual gains model, its introduction and on-going demands leads workers to question the organization's valuation of them and the comprehensibility and meaningfulness of what surrounds them. Finally, significant numbers of people may overtly perceive HIM as a stressor, which would be consistent with the importance some have placed on individuals' *perceptions* of job and organizational factors as stressors or not, as the case may be, as a determinant of actual stress levels (De Jonge et al., 1999:116).

To complete our attempted explanation, the design of enriched jobs, we conjecture, is less affected by these pressures, and individuals' increasing responsibility and autonomy has been a part of the neo-liberal political agenda. Moreover, enriched job designs may create a sense

of personal space for individuals, thus offering pleasurable experiences that contrast with feelings evoked by a pressured environment. It may even provide them with psychological protection from it; but the fact that there were no interaction effects between enriched job designs and HIM suggests that their psychological effects are largely independent.

This research has several strengths. First, it is based on a large dataset that covers all sectors of the British economy, with the exception for practical reasons of mining and agriculture. Furthermore, the data have a two-level nested structure, for which we used a new statistical method designed specifically for estimating multiple level models where the ultimate dependent variable is at a higher level than some of the independent variables or mediators. We controlled for the evident effects of five important variables at the workplace level and of seven at the individual level.

The strength of the results compares favourably with the estimates in meta-analyses reported earlier. Our findings for satisfaction and performance are somewhat stronger than those of, for instance, Harter et al.'s (2002), as they range from -0.14 for absenteeism to 0.26 for financial performance, compared with their 0.12 average.

Nonetheless, the study has some of the limitations of the majority of research on the HRM–performance link, in particular its reliance on cross-sectional data and a single management respondent for the practices and performance data, which may be a source of common method bias. The varied nature of the results for enriched job design and HIM, however, suggests that common-method variance may not strongly affect our measures or their link to performance. The measure of HIM has been validated elsewhere (De Menezes and Wood, 2006) and the items constituting it were taken from a wide range of questions in the survey which reduced the potential for response sets or effects of the ordering of questions (cf Conway and Lance, 2010).

In fact the associations between both measures of well-being and either management-rated practices or performance in our study are higher than the associations between practices and performance that are both rated by managers. Moreover, information on practices is thought (e.g. by Gerhart et al., 2000) to be more reliable if, as in our study, they are collected at the workplace level; and Wall et al. (2004b) have shown that in three UK studies, the self-reported performance data measured were consistent with the assumed more objective audited accounting data, which offers some support for the validity of these types of measures.

Further work might include another measure of well-being, depression–enthusiasm, which like the anxiety–comfort dimension moves from low pleasure to high pleasure, but in contrast the arousal is low for depression and high for enthusiasm. We might expect that depression–enthusiasm will either play a similar role to job satisfaction in mediating the relationship between enriched job design and performance, or at least to have a positive or neutral relationship with enriched job design. . Had we found simply that HIM adversely affected comfort but not satisfaction then it might anticipate neutral or even positive effects on enthusiasm since HIM is concerned with creating a level of high arousal in workers. Given, however, we did not, we suspect that enthusiasm will be affected by the same forces that we conjecture are affecting job satisfaction and comfort levels, though it may be that any adverse effect on depression–enthusiasm may have a greater effect on absence than does the adverse effect on anxiety–comfort.

Replication of the study in other institutional contexts is particularly necessary given the emphasis Godard (2010) places on the institutional context. Further analysis showed that union recognition did not substantially alter the results, which suggests that industrial

relations institutions do not account for intra-country variation within Britain.[3] But this result also needs testing elsewhere.

Finally, whilst results supporting hypothesized mediation add support to theories based on a particular direction of causality, a statistical model such as the one we test on cross-sectional data could be consistent with a path model that reversed the direction of the paths, i.e. performance leads to satisfaction, and satisfied workers consequently encourages managers to give autonomy and participation opportunities to workers. However, the limited evidence from job redesign case studies does not suggest that managements introduce job design or only tend to design jobs with high levels of autonomy when workers are satisfied. Similarly, the evidence that we have on the reasons for increasing the extent of high involvement management suggests that the adoption of new production methods is more important than a desire to arrest worker dissatisfaction (e.g. Wood and Bryson, 2010).

Treating enriched job design and HIM as discrete has certainly been vindicated by our findings, as has taking a multi-dimensional approach to well-being. We need, as Ledford (1999) also concluded, more sophisticated theories on the dimensions of worker well-being, as well as on how to connect these to multiple organizational performance indicators. In particular, we need to explore the mechanisms that explain the link between HIM and productivity, particularly the role of pro-activity, flexibility and effective teamwork on the part of workers, which were not measured in WERS2004. Also, we need to examine mechanisms other than job satisfaction that link enriched job design to performance, especially in the case of quality.

For organizational policy, this study implies, firstly, that we need to understand why enriched job design is not followed more widely than it is; indeed, in the UK there is evidence of a decline in the level of job autonomy, which may have stabilized recently, but

nonetheless at a not particularly high level (Green and Whitfield, 2009). Secondly, we need to think about ways of reducing any negative effects of HIM so that job dissatisfaction does not depress its positive effects on performance and the anxiety levels of some are not increased too strongly.

For the policies towards modern management practices of unions and other representative groups, the study offers further grounds for encouraging policy makers and managers to put job quality high on their agendas. The results do not imply that they should oppose HIM on the grounds of its negative association with job satisfaction and to a lesser extent comfort, rather that they might work with employees and managers to think of ways of benefiting from HIM, including from its productivity yield, without adversely affecting well-being.

Conclusion

The study demonstrates, at least for Britain, that both mutual gains (positive mediation) and counteracting (inconsistent mediation) theses are relevant for understanding the impact of involvement-centred HRM on job satisfaction and organizational performance. The relevance of the various theories depends on the dimension of involvement: the mutual gains model fits enriched job design, the counteracting model fits HIM. No theory is relevant for understanding either types of involvement management on anxiety–comfort.

We cannot then associate direct employee involvement with a mutual gains model of employment relations in general. For some workplaces, or for some workers, the achievement of HIM's performance benefits may be at the expense of a degree of satisfaction and comfort, which in the case of satisfaction may detract from its positive performance effects.

Endnotes

1. The three dimensions of well-being can be identified on the basis of Russell's (1980) circumplex model of affect which describes it in terms of two orthogonal dimensions of pleasure and arousal. Pleasure relates to emotional feelings about whether one is feeling good or bad about one's job or aspects of it. Job satisfaction, where traditionally emphasis in the involvement literature has been placed, focuses only on the pleasure dimension. As such, it is independent of arousal, which may provoke positive or negative feelings. Mental arousal ranges from activation to deactivation and includes varying states, from feeling alert to sluggish, calm to tense, contented to anxious, depressed to enthusiastic. Positive ends of the continuum in both the anxiety–comfort and depression–enthusiasm dimensions are identified by a state of high pleasure or positive affect. But their negative ends are differently related to arousal. That is, anxiety entails high arousal and depression entails low arousal.

2. A principal component analysis of the six anxiety–comfort items (with items coded so that the scale is in the direction anxiety to comfort) revealed two discrete components: the negative items are placed on one factor and the positive on the other. However, following Segura and González-Romá (2003), we tested whether this two-factor model reflected a non-linear relationship between positive and negative items by applying the Mokken model (using STATA). This is a non-linear scaling method similar to Guttman scaling, in which scalability is evaluated by Loevinger's H coefficient (1948). The overall coefficient is 0.55 (i.e. over the acceptable 0.5 level identified by González-Romá et al. (2006:170), and thus the items are scalable on one underlying (bipolar) dimension.

3. In light of the arguments that mutual gains are perhaps more likely in unionized workplaces (Danford et al., 2008; Kochan and Osterman, 1994), we assessed whether unionism affected the relationships we tested. Unionism, measured through whether management in the workplace recognized a trade union for collective bargaining purposes,

did not moderate any of the relationships in the models. However, job-related anxiety–comfort may have more positive impact in unionized settings on two out of three of our economic outcomes, financial performance and quality. This suggests that unions are able to ensure a greater pay-off to HIM in the case of quality, but this is not accountable by their increasing job satisfaction or anxiety–comfort. This is consistent with an agency-role theory of unionism (Kaufman, 2004).

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Table 1. Two-level mediation model: paths, coefficients and their significance

Part A: Direct effects (standardized estimates)	**Coefficient**	**SE**	**T-value**[1]
High involvement management → financial performance	.126	.034	3.70***
High involvement management → labour productivity	.099	.035	2.82**
High involvement management → absenteeism	-.018	.036	-0.50
High involvement management → quality	.078	.034	2.27*
High involvement management → job satisfaction	-.229	.036	-6.36***
High involvement management → job anxiety-comfort	-.207	.043	-4.82***
Enriched job design → financial performance	.049	.031	1.61
Enriched job design → labour productivity	.052	.031	1.69
Enriched job design → absenteeism	-.056	.033	-1.69
Enriched job design → quality	.061	.030	2.04*
Enriched job design → job satisfaction	.119	.037	3.23**
Enriched job design → job anxiety-comfort	.014	.042	0.34
Job satisfaction → financial performance	.257	.056	4.56***
Job satisfaction → labour productivity	.245	.058	4.22***
Job satisfaction → absenteeism	-.140	.067	-2.10*
Job satisfaction → quality	.189	.058	3.28**
Job anxiety-comfort → financial performance	-.078	.063	-1.24
Job anxiety-comfort → labour productivity	-.045	.066	-0.68
Job anxiety-comfort → absenteeism	-.114	.077	-1.48
Job anxiety-comfort → quality	.004	.063	0.07
Part B: Indirect effects (standardized estimates)			
High involvement mgt → job satisfaction → financial performance	-.059	.016	-3.75***
High involvement mgt → job satisfaction → labour productivity	-.056	.016	-3.50***
High involvement mgt → job satisfaction → absenteeism	.032	.016	1.95
High involvement mgt → job satisfaction → quality	-.043	.015	-2.94**
High involvement mgt → job anxiety-comfort → financial performance	.016	.014	1.18
High involvement mgt → job anxiety-comfort → labour productivity	.009	.014	0.67
High involvement mgt → job anxiety-comfort → absenteeism	.024	.017	1.42
High involvement mgt → job anxiety-comfort → quality	-.001	.013	-0.07
Enriched job design → job satisfaction → financial performance	.031	.012	2.64**
Enriched job design → job satisfaction → labour productivity	.029	.011	2.59*
Enriched job design → job satisfaction → absenteeism	-.017	.010	-1.73
Enriched job design → job satisfaction → quality	.023	.010	2.34*
Enriched job design → job anxiety-comfort → financial performance	-.001	.003	-0.33
Enriched job design → job anxiety-comfort → labour productivity	-.001	.002	-0.30
Enriched job design → job anxiety-comfort → absenteeism	-.002	.005	-0.34
Enriched job design → job anxiety-comfort → quality	.000	.001	0.07

SE=standard error of estimate

N=1,177 workplaces; N=14,127 employees

[1]Significance:*= p<0.05 **= p<0.01 ***= p<0.001

Table 2. Total, direct, and total indirect effects of high involvement management and enriched job design on outcomes

	High Involvement Management			Enriched Job Design		
	Total	Direct	Indirect	Total	Direct	Indirect
Financial performance	.084*	.126***	-.043**	.079**	.049	.030**
Productivity	.052	.099**	-.047**	.081**	.052	.029**
Absenteeism	.037	-.018	.056***	-.075*	-.056	-.018
Quality	.034	.078*	-.044**	.083**	.061*	.023*

N=1,177 workplaces; N=14,127 employees

[1]Significance:*= p<0.05 **= p<0.01 ***= p<0.001

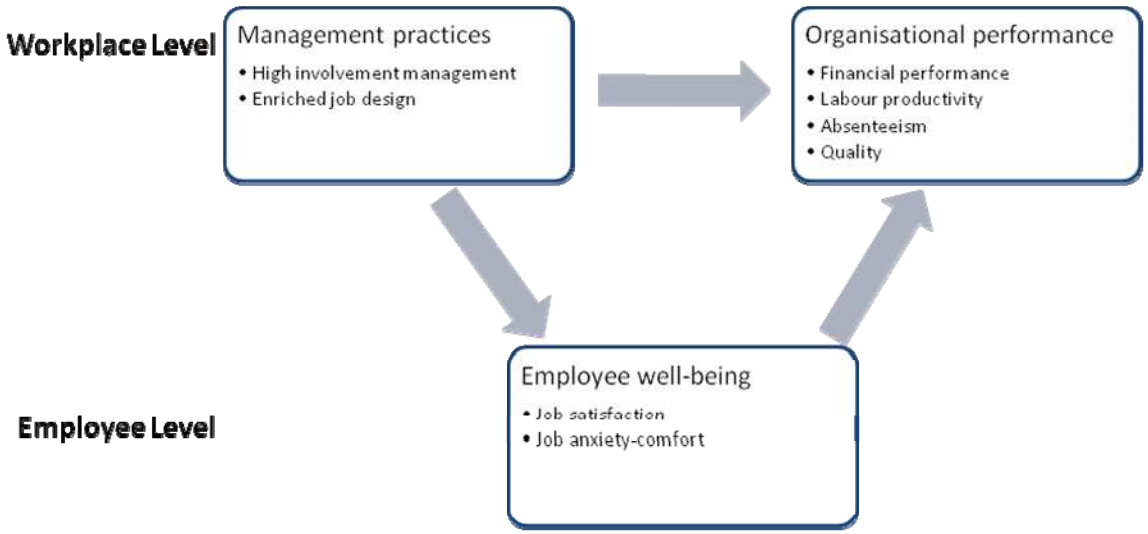

Figure 1 A multi-level model of well-being as a mediator of the management practices - performance relationship

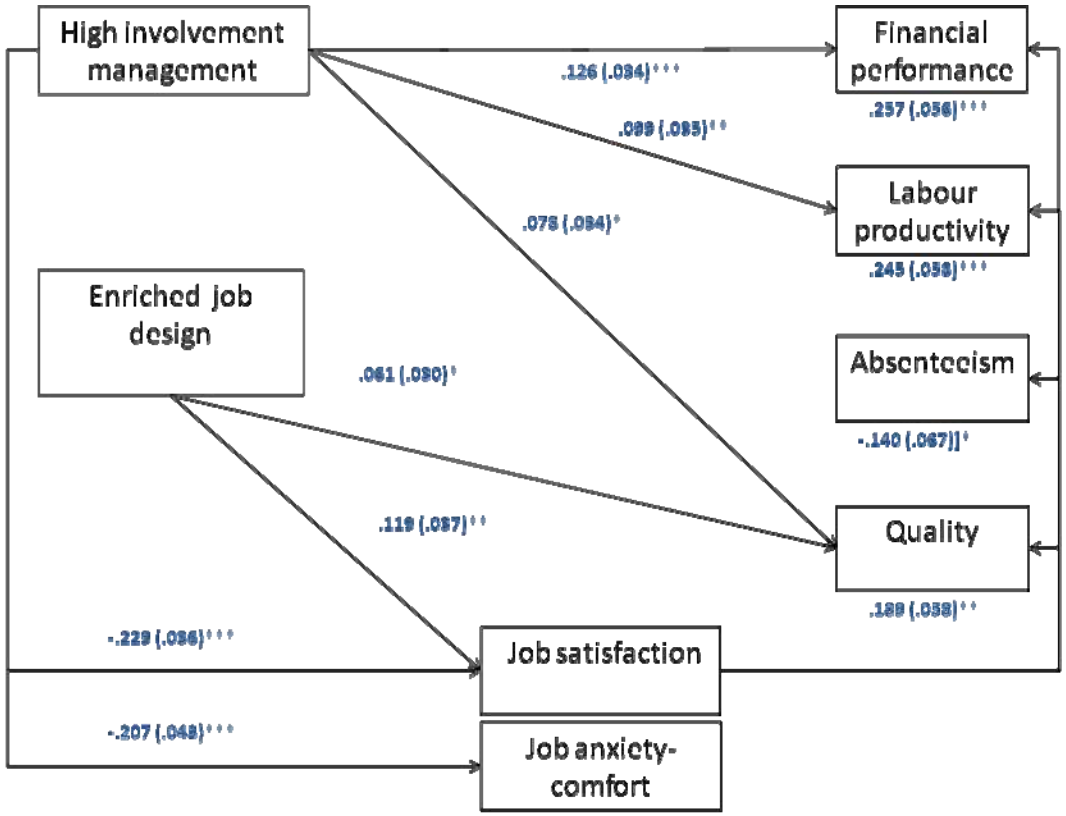

Figure 2 The two multi-level mediation model using WERS2004 data: Standardized parameters and their standard errors