



High-involvement work processes, work intensification and employee well-being

Work, employment and society
2014, Vol. 28(6) 963–984
© The Author(s) 2014
Reprints and permissions:
sagepub.co.uk/journalsPermissions.nav
DOI: 10.1177/0950017013512714
wes.sagepub.com



Peter Boxall

University of Auckland, New Zealand

Keith Macky

Auckland University of Technology, New Zealand

Abstract

Using a national population survey, this article examines how high-involvement work processes affect employee well-being. The analysis shows that greater experiences of autonomy and participation in decision-making have positive or neutral effects. Higher involvement is a key factor predicting higher job satisfaction and better work–life balance while it has no relationship to stress or fatigue. In contrast, higher levels of work intensity increase fatigue and stress and undermine work–life balance. If the quality of working life is a key objective in a reform based on greater employee involvement, close attention needs to be paid to the balance between processes that release human potential and those that increase the intensity of work.

Keywords

employee well-being, high-involvement work processes, high-performance work systems, work intensification

Introduction

In contrast to Taylorist forms of work organization, the high-involvement model fosters the participation of workers in decisions about their work. It aims to enhance their scope to exercise discretion and assume responsibility. Such a process holds the promise of releasing untapped human potential through greater use of workers' existing skills and greater opportunities for learning (e.g. Ashton and Sung, 2002; Felstead et al., 2010;

Corresponding author:

Peter Boxall, Department of Management and International Business, University of Auckland, Private Bag 92019, Auckland 1142, New Zealand.

Email: p.boxall@auckland.ac.nz

Gallie, 2013). It thus forms an important stream of thought within the wider literature on how to create high-performance work systems (HPWSs). As in that literature generally, a fundamental question is whether such reforms deliver what they promise (Boxall and Macky, 2009; Godard, 2004). There are both serious questions around the circumstances under which they might benefit employers (e.g. Cappelli and Neumark, 2001; Kaufman and Miller, 2011) and a line of critique that the outcomes for workers are mixed, at best, or decidedly malign, at worst (e.g. Danford et al., 2008; Ramsay et al., 2000; White et al., 2003).

Using a national population survey, our goal in this article is to address the question of how involvement processes affect worker well-being. The survey measures workers' job satisfaction, fatigue, stress and work–life balance when they experience greater levels of job autonomy and participation in decision-making, and assesses their perceptions of three related dimensions of their employment context: the quality of channels for management communication and employee voice, the strength of effort–reward linkages and the quality of training and development opportunities. The analysis compares the effects of these processes with the impacts of work intensity on employee well-being, along with a range of demographic and job-quality controls.

The article commences with the literature on high performance and high involvement. Within this body of research, it is important to include work intensification in the assessment of employee well-being. The article then undertakes an analysis of a survey of New Zealand workers, which was designed to assess the impacts of involvement processes and work intensity on a range of measures of well-being. The article finishes with our discussion and conclusions.

High performance, high involvement and work intensification

Studies of high-performance work systems continue to attract the interest of researchers, policy makers and practitioners who are concerned with how the quality of workplace relations can be improved (Lloyd and Payne, 2006; Stewart and Danford, 2008). However, efforts to reach any kind of conclusion about the outcomes of HPWSs are affected by the fact that the terminology is inherently non-descriptive. What is highly performing is not self-evident and the practices that constitute a HPWS are subject to a confusing array of definitions and assertions (e.g. Becker and Gerhart, 1996; Wood, 1999). Furthermore, when one moves away from any single national context, socio-cultural variations in employment practices have to be accommodated (e.g. Gallie, 2007; Paauwe and Boselie, 2003). Even if a set of context-delineated practices could be agreed upon as likely to enhance performance, there is the problem that data that simply count practices, or even the proportion of the workforce covered by them, do not account for variations in how the practice is implemented, which is critical from the worker perspective (e.g. Marchington and Grugulis, 2000; Purcell, 1999). The 'how' of work and employment practices is decisive, especially with complex practices such as teamwork and performance appraisal. Do workers experience genuine improvements in their autonomy as a result of the development of team-based production or do they experience these changes as increasing their work pressures without commensurate improvements

in their discretion? Do they experience the advent of a performance appraisal system as enhancing their opportunities for personal growth or do they perceive it as an increase in bureaucratic control, which reduces their chances to express themselves? Observers cannot know the answer to such questions simply by taking these practices at face value and ignoring how they are experienced by workers. The *how* question is critical to any kind of theoretical explanation of high performance and to an understanding of the impact on employees. Assuming that certain practices are inherently highly performing and/or beneficial to workers is therefore a major mistake.

There are, fortunately, two main variations on the HPWS terminology that are more descriptive of the nature of the underpinning process (Ramsay et al., 2000; Wood, 1999). One term traces back to Walton (1985) and is concerned with 'high-commitment' practices. Higher commitment, however, can be achieved through policies that improve fairness, trust and employment security without touching the design of work (Boxall and Macky, 2009). The other term traces back to Lawler (1986) and is concerned with 'high-involvement' management. This term implies efforts to redesign jobs to enhance worker responsibilities and authority, using empowerment – greater task discretion and participation in decision-making – as the gateway to higher performance (Kalleberg, 2011). It is associated with companion improvements in skill development, managerial communication and incentives to participate, as envisaged in the model developed by Appelbaum et al. (2000).

Such terms are a better way of describing workplace reforms because they indicate the dominant theme underpinning managerial action. They are not, of course, without their complexities. Involvement, for example, can vary in the levels at which it occurs. Wood et al. (2012), in an analysis of WERS 2004 data, distinguish between role-based involvement or 'enriched job design' and wider, organizational involvement, in which they include quality circles, team briefing, formal teams and appraisals, inter alia. The desired outcomes can also vary. Management may pursue greater employee involvement to enhance the quality of individual work or to improve organizational processes, including coordination among workers (e.g. Gittel et al., 2010), innovation within and across work teams (e.g. Hoyrup, 2010), or the quality of its relationships with labour (e.g. Frenkel et al., 2013). Some blend of these outcomes may be sought. Despite these complexities, terms such as 'high involvement' pick up a shift in management philosophy in a way that 'high performance' does not.

The other virtue of using such terms is that they do not *assume* that 'the particular configuration of management practices is necessarily performance-enhancing' (Bryson et al., 2005: 460). This has to be demonstrated, not treated as self-evident. In Wood et al.'s (2012) study, greater organizational involvement has a negative effect on organizational performance, via lower job satisfaction, which actually undermines its positive, direct effects. Whatever they are called, it is unwise to assume that workplace reforms will have beneficial impacts on the stakeholders they affect.

Lawler's (1986) framework has been developed further by Vandenberg et al. (1999) in a model in which high-involvement processes link to worker psychological states and organizational effectiveness through two paths: a cognitive path which takes 'greater advantage of the skills and abilities' employees possess, and a motivational path which increases 'workers' satisfaction and other affective reactions' (Vandenberg

et al., 1999: 304). Their framework operationalizes Lawler's (1986) 'PIRK' rubric: power (P), information (I), rewards (R) and knowledge (K). High-involvement processes enable workers to exercise greater control over their work and participate in those decisions that concern them (the power or autonomy dimension), enhance the quality of communication and voice supporting this involvement process (information), reward workers fairly for their contribution to success (reward) and provide the training and development they need to participate effectively (knowledge). The model can be applied to both individual and team-based forms of empowerment and, through its incorporation of communication processes and perceptions of reward fairness, goes some way towards recognizing the embeddedness of empowerment within the social context of the organization. Existing studies using this framework find that worker attitudes are more positive, and well-being is enhanced, when they experience greater levels of these involvement processes (e.g. Mackie et al. 2001; Macky and Boxall, 2008; Vandenberg et al., 1999).

It is this model, in which worker autonomy and participation in decision-making are central, that is used in this study to assess the impacts of high-involvement work processes (HIWPs) on employee well-being. As Gallie (2007: 4–9, 212–13) explains, multiple theoretical traditions see the question of autonomy or control as fundamental to the quality of working life. It is important in enabling employees 'to make use of their individual creativity in work and to develop their abilities over time' (Gallie, 2007: 212), as demonstrated in analysis of the British Skills Survey 2006 (Felstead et al., 2010; Gallie, 2013). The Lawler (1986) framework recognizes this. A weakness, however, is that it does not address the relationship between involvement processes and work intensity, which has important implications for worker well-being. In the *Employment in Britain* survey, for example, Gallie et al. (1998: 42–3, 79–80) found that up-skilling and greater levels of task discretion were associated with higher levels of work intensity, with mixed impacts on employee well-being. More recently, Kalleberg et al. (2009) and Gallie et al. (2012) report greater stress or pressure in self-managing teams. To create a more comprehensive assessment of how HPWSs affect employee well-being, then, work intensity ought to be studied alongside employee involvement, as implied by Karasek and Theorell's (1990) psychosocial model of job strain. In their framework, the physical and psychological health of workers is at greatest risk when high levels of work demand are accompanied by low levels of worker control. Intensified work puts greater demands on an individual's resources, and is associated with greater fatigue (e.g. Ono et al., 1982), physiological and psychological health deterioration (e.g. Sparks et al., 1997) and work–family conflict (e.g. Eby et al., 2005). Work overload has also been linked to lower job satisfaction (e.g. Yousef, 2002), while work under intensified pace and demands is associated with increased stress (e.g. Landsbergis et al., 1999).

Like HPWSs, the definition and measurement of work intensity poses some issues. The simplest measure relates to the hours that individuals work. In Britain, those working 48 hours or more a week report a much higher level of work strain (Gallie et al., 1998: 224–5). Working hours, however, are an ambiguous indicator of intensification because there are various reasons why employees choose to work extended hours (Drago et al., 2009). It is therefore preferable to include measures of the qualitative experience of effort demands and work overload (Gallie et al., 1998; Macky and Boxall, 2008), such

as assessments of the level of pressure workers feel during their work. Green (2006) shows this to be one of the two principal causes, along with declining task discretion, of a recent decline in British job satisfaction. Our approach, then, is to measure hours worked, as well as whether employees experience overload in what is expected of them in their work and whether they feel pressure to take work home or work longer than they desire. This can happen when greater involvement in decision-making requires greater effort through exposure to problems that are more difficult, or take longer, to solve. It can also happen in lean-production environments that are accompanied by heightened production pressure (Danford et al., 2008; Delbridge, 2007; Eurofound, 2012). However, researchers should not imagine the issue is mainly a problem in assembly-line or lean environments. In the *Employment in Britain* survey, Gallie et al. (1998: 221–3) found that the highest level of work strain was associated with ‘people-work’, for which professionals and managers have greater responsibility.

In this study, then, measurement includes the impact on employee well-being of both involvement processes and those that increase their work intensity. Based on the literature reviewed, positive outcomes are predicted from higher levels of involvement and negative outcomes from higher levels of intensity, giving the following hypotheses:

Hypothesis 1: Employees reporting greater autonomy, better two-way communication, a stronger linking of rewards to performance, and better opportunities for training and development will report better well-being in terms of satisfaction, fatigue, job-induced stress and work–life balance.

Hypothesis 2: Employees experiencing greater work intensity will report poorer well-being in terms of satisfaction, fatigue, job-induced stress and work–life balance.

Method

Our survey is based on scales that measure worker perceptions of what is happening in their work, and is not reliant on management reports of the practices that are assumed to enhance employee involvement. Management reports are frequently different from, and more positive than, those of employees (e.g. Geare et al., 2006). Employee perceptions of what is happening to them at work, rather than someone else’s statements about that environment, are the stronger influence on their attitudes, behaviour and well-being (e.g. Wood and De Menezes, 2011). For these reasons, it is appropriate that our level of measurement is the individual employee. However, the study is potentially subject to the methodological artifact of common-method variance. Following Whitener’s (2001) example, a factor analysis of all scale variables was performed (available on request) and found most items to clearly load onto the expected separate factors. For the unrotated solution, 32.3 per cent of the variance was accounted for by the first factor, which goes some way to obviating common-method concerns. In addition, following Conway and Lance (2010), only measures with well-established construct validity were used and, as outlined below, satisfactory internal reliability (see Table 1). And, finally, the questionnaire was structured such that the dependent variables were measured before the independent variables, reducing the likelihood of social desirability contributing to common-method variance (Kline et al., 2000). The questionnaire also contained

Table 1. Correlations and descriptive statistics.

Variable	Mean (SD)	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
1 Job sat.	5.95 (1.44)	–																
2 Stress	5.51 (2.20)	–.18**	–															
3 Fatigue	3.01 (1.52)	–.34**	–.38**	–.72														
4 Work-life imbalance	2.43 (0.89)	–.22**	.47**	.50**	.90													
5 Power-autonomy	6.14 (1.09)	.48**	–.14**	–.29**	–.27**	.92												
6 Information	5.33 (1.40)	.47**	–.18**	–.32**	–.33**	.52*	.94											
7 Rewards	4.58 (1.50)	.41**	–.17**	–.27**	–.29**	.48**	.61**	.89										
8 Knowledge	5.17 (1.63)	.41**	–.16**	–.23**	–.19**	.49**	.59**	.52**	.95									
9 Overload	3.56 (1.59)	–.24**	.52**	.48**	.57**	–.25**	–.33**	–.29**	–.24**	.87								
10 Time demands	3.16 (1.74)	–.28**	.32**	.39**	.58**	–.29**	–.39**	–.29**	–.24**	.48**	.82							
11 Hours worked	40.59 (12.44)	.06	.32**	.08*	.35**	.05	.01	.02	.01	.28**	.48**	–						
12 Trust in mgmt	5.33 (1.41)	.50**	–.21**	–.34**	–.32**	.58**	.75**	.56**	.46**	–.33**	–.40**	–.05	.85					
13 Co-worker trust	6.07 (0.95)	.35**	–.12**	–.21**	–.16**	.46**	.45**	.33**	.45**	–.19**	–.21**	–.07	.43**	.84				
14 Superv. support	5.79 (1.29)	.44**	–.21**	–.32**	–.34**	.60**	.65**	.49**	.46**	–.31**	–.42**	–.03	.67**	.44**	.92			
15 Job insecurity	0.76 (1.09)	–.25**	.07	.08+	.07	–.25**	–.23**	–.16**	–.18**	.08+	.12**	–.03	–.27**	–.19**	–.22**	–		
16 Gender	0.50 (0.50)	–.05	–.03	.04	–.00	.02	.05	–.09*	.03	.03	–.01	–.35**	.02	.07+	–.00	–.02	–	
17 Age in years	46.58 (11.56)	.10*	–.07+	–.16**	–.08+	.11**	.09+	–.04	.08+	–.05	–.06	.12**	.02	.07+	.06	.02	.00	–
18 Tenure (log)	1.73 (1.04)	.04	.12**	–.03	.08+	.02	–.02	–.09+	.03	.08+	.11*	.17**	–.06	.02	–.02	–.03	–.03	.35**

Note: N = 928 after deletion of missing values. Sig: ** = $p < .001$; * = $p < .01$; + = $p < .05$, all one-tailed. Coefficient alpha is shown in bold on the diagonal.

reverse-scored items in an attempt to reduce response acquiescence effects. Unless stated below, Appendix 1 shows all items for the measures used, with reverse-scored items indicated by (R).

Data collection and participants

Data were collected in 2009 using computer-assisted telephone interviewing (CATI). Random sampling with replacement for ineligible contacts and no-contacts was used, with three call-backs before a contact was replaced. To be eligible, those contacted needed to be at least 18 years of age, to have worked for their current employer for more than six months (to control for the possibility that newer employees would have too little experience of the firm's management practices) and to work in a firm with at least 10 employees.

A total of 1016 people were interviewed, giving a response rate of 31.5 per cent. Just over half of the participants were male (50.3%). The average age was 46.87 years ($SD = 11.58$), the median tenure was six years (range: six months to 52 years). Most respondents were permanent full-time (71.3%) or part-time employees (19.4%) and worked an average of 40.43 hours per week ($SD = 12.29$). Only a small number were on limited or fixed-term employment agreements, either part-time (4.7%) or full-time (4.5%). Over two-thirds (69.7%) were in a workplace with a union that they could join, with 55.5 per cent of these being a member of that union. Occupations were coded using the Australian and New Zealand Standard Classification of Occupations (ANZSCO). The majority of the respondents were either managers (21.4%) or professionals (34.6%), followed by clerical and administrative employees (16.0%), technical or trades occupations (11.7%), an aggregate group of labourers, machine operators and drivers (9.8%) and, lastly, sales workers (6.4%). Comparing these occupational codes with those of the 2006 New Zealand Census found no statistically significant differences ($\chi^2(5) = 7.66, p = .176$). Similarly, no significant differences were found for full-time/part-time status ($\chi^2(1) = 0.06, p = .812$) or respondent gender ($\chi^2(1) = 0.36, p = .548$). In these terms, the respondent sample appears broadly similar to the population to which it belongs.

Intensification and involvement variables

While participants were asked to report on the hours usually worked each week, work intensity was measured through perceived role overload and managerial demands on personal time. *Role overload*, defined as 'having too much work to do in the time available' (Beehr et al., 1976: 42), was measured using a six-item scale. *Time demands* refers to the expectations that managers place on an employee's time that might interfere with non-work activities, and was measured using a slightly modified four-item measure developed by Thompson et al. (1999) (see Appendix 1). Responses on both measures were obtained on 7-point Likert-type scales, bounded from 1 = strongly disagree to 7 = strongly agree, with higher scores therefore indicating higher levels of role overload and time demand.

Following Lawler's (1986) PIRK framework for employee involvement, the four involvement scales developed by Vandenberg et al. (1999) were used. Responses for all items (see Appendix 1) were obtained on a 7-point Likert scale bounded from 1 = strongly disagree to 7 = strongly agree, with higher scores indicating higher involvement. The

power-autonomy variable (seven items) measures the extent to which employees feel they can control how they do their job and can participate in relevant decisions, while *information* (11 items) measures the extent to which employees feel there is effective communication with management. The *rewards* variable (nine items) taps the extent to which employees feel rewarded for their effort and performance, while the *knowledge* variable (eight items) is concerned with the extent to which employees feel they are provided with the training and development opportunities they need.

Employee well-being variables

Employee well-being can usefully be thought of as encompassing happiness, health and relationship-oriented elements (Grant et al., 2007). The survey includes global job satisfaction, as an indicator of overall happiness with the job, but complements it with the health-related concepts of fatigue and stress and the relationship-oriented notion of work–life balance.

Global job satisfaction was measured using a slightly modified version of Warr et al.'s (1979) single-item measure: 'Taking everything into consideration, how satisfied do you feel with your job as a whole?' Responses were obtained on a seven-point scale bounded from 1 = very dissatisfied to 7 = very satisfied. Single-item measures of job satisfaction have been found to have adequate convergent validity with multi-item measures of satisfaction (Oshagbemi, 1999; Wanous et al., 1997).

Job-related stress was also measured using a single item (Stanton et al., 2001). The wording was: 'On a scale of 1 to 10, how would you rate the amount of stress you feel in your job, where 1 is no stress and 10 is extreme stress?' Stanton et al. (2001) found that this item correlated well with multi-item measures of job pressure, a physiological measure of work stress, and perceived threat in the experience of work, while Macky and Boxall (2008) found a correlation of 0.72 between this measure and a seven-item measure of job-induced stress. As with the job satisfaction measure, this measure helped to reduce questionnaire length.

Fatigue was measured using Beehr et al.'s (1976) three-item scale (see Appendix 1), with responses obtained on a seven-point Likert scale from 1 = strongly disagree to 7 = strongly agree. A slightly modified instrument Frone and Yardley (1996) developed to measure work–family conflict was used to measure *work–life imbalance*. The wording of the six items goes somewhat beyond family to include negative work spill-over to non-familial aspects of personal life and friendship. The response scale was 'never, seldom, sometimes, often, very often' (scored from 1 to 5), with higher scores suggesting greater work–life imbalance.

Control variables

To control for job-quality variables other than involvement and intensification, four variables were included in the analyses: trust in management, trust in co-workers, perceived supervisor support and perceived job insecurity. With the exception of job insecurity, responses were obtained on a 7-point agree–disagree Likert scale, with higher scores indicative of higher trust and perceived support.

Trust in management and *trust in co-workers* were both measured using Cook and Wall's (1980) six-item scales. In both instances, trust represents the degree of faith placed in the intentions of others and confidence in their abilities, with connotations of reliability and capability. *Perceived supervisor support* was measured using a modified version of the eight-item short form for perceived organizational support (e.g. Rhoades and Eisenberger, 2002). Where the original items referred to 'my' and 'organization', the words 'your' and 'manager' were substituted (see Appendix 1).

Job insecurity perceptions were measured using a single item where respondents were asked 'How likely do you think it is that you will be made redundant or lose your job through organizational downsizing or restructuring in the next two years?' with a response scale from 0 = not at all likely to 5 = extremely likely.

Demographic control variables included in the analyses were respondent age in years, gender (1 F, 0 M), tenure (log), unionized or not (1,0), permanent or temporary employment (1,0), full-time or part-time (1,0) and dummy variables for each occupational group. Due to its non-normal distribution, the natural log for tenure was used. While the age and hours worked variables have large standard deviations relative to the means, their distributions do not depart from the normal.

Results

Means and standard deviations for all variables, together with the simple correlations between variables, are shown in Table 1. Coefficient alphas for the scale variables are shown on the diagonal, and indicate that all have satisfactory reliability. Excluded from this table, in the interests of space, are those demographic variables (occupational category, unionization and permanent-temporary employment status) that the multivariate analyses (Tables 2 to 5) show do not predict employee well-being.

Several patterns can be observed from Table 1. First, all four PIRK involvement variables are significantly but negatively correlated with both role overload and time demand variables. In other words, higher levels of power, a better quality of information sharing, a stronger connection between effort and reward, and better development opportunities tend to be associated with reports of lower overload in the work role and lower demands by managers on personal time. This implies that involvement and intensification processes are clearly differentiated in the minds of New Zealand workers.

Secondly, the four high-involvement variables are also connected to other indicators of job quality, with higher involvement associated with greater trust in management and co-workers, higher levels of perceived support from one's supervisor and lower expectations of being involuntarily removed from employment. The relationships between involvement and the well-being variables are also informative, with, as predicted in hypothesis 1, higher involvement levels being associated with lower levels of job-related stress, lower reported fatigue, reduced levels of negative spill-over from work to non-work life and higher job satisfaction.

Consistent with hypothesis 2, role overload and work pressure are associated with lower job satisfaction, higher stress levels, greater fatigue and greater work-life imbalance. Hours usually worked in a week are also associated with higher reported stress, poorer work-life balance and, to a lesser degree, fatigue.

Table 2. Hierarchical regression: standardized coefficients for job satisfaction.

Variables	Model 1	Model 2	Model 3	Model 4	Final Model
<i>Demographics</i>					
Gender	-.076*	-.068*	-.074*	-.046	-.046
Age	.093**	.030	.036	.024	.027
Tenure (log)	.006	.032	.030	.028	.026
Unionized	-.007	.008	.032	.031	.025
Permanent	-.007	-.006	.004	-.015	-.002
Manager	.173	.166	.108	-.214	.084
Professional	.167	.182	.104	.109	.100
Technical/trades	.044	.046	.045	.108	.050
Clerical/admin	.124	.106	.087	.044	.089
Sales	.086	.073	.048	.055	.043
Operators, drivers, labourers	.040	.038	.036	.036	.029
<i>Well-being covariates</i>					
Job stress		-.077*	-.042	-.054	-.052
Job fatigue		-.264***	-.156***	-.142***	-.134***
Work-life imbalance		-.061	.035	.024	.048
<i>Job-quality controls</i>					
Trust in management			.291***	.283***	.209***
Trust in co-workers			.117***	.121***	.055
Perceived supervisor support			.123***	.112***	.034
Perceived job insecurity			-.109***	-.105***	-.091**
<i>Intensification</i>					
Usual hours worked				.087	.054
Role overload				-.018	-.003
Time demands				-.028	-.039
<i>HIWPs</i>					
Power-autonomy					.170***
Information					-.039
Rewards					.093*
Development					.102**
R² change	.021	.110	.202	.006	.034
F change	1.83*	8.73***	68.86***	2.56	12.21***
R²	.021	.132	.334	.339	.373
Model F	1.83*	9.91***	25.31***	22.17***	21.49***

Note: N = 928 after list-wise deletion of missing values. Sig. *** = $p < .001$; ** = $p < .01$; * = $p < .05$.

Multivariate analyses

Given the number of significant relationships with the employee well-being variables shown in Table 1, hierarchical regression analyses were performed for each dependent variable to further test the hypotheses proposed here and shed light on which variables most clearly predict employee well-being (Tables 2 to 5). In each analysis, the

Table 3. Hierarchical regression: standardized coefficients for fatigue.

Variables	Model 1	Model 2	Model 3	Model 4	Final Model
<i>Demographics</i>					
Gender	.053	.059*	.064*	.033	.031
Age	-.174***	-.084**	-.082**	-.067*	-.068
Tenure (log)	.029	-.042	-.046	.048	-.048
Unionized	.039	.018	.008	-.002	-.003
Permanent	-.011	-.032	-.035	-.022	-.021
Manager	-.012	.062	.070	.023	.017
Professional	.039	.073	.083	.018	.010
Technical/trades	.069	.153	.152	.126	.121
Clerical/admin	-.001	.120	.122	.074	.069
Sales	-.009	.060	.062	.030	.026
Operators, drivers, labourers	.056	.134	.134	.113	.108
<i>Well-being covariates</i>					
Job satisfaction		-.197***	-.149***	-.129***	-.129***
Job stress		.195***	.191***	.142***	.142***
Work-life imbalance		.377***	.354***	.275***	.274***
<i>Job-quality controls</i>					
Trust in management			-.091*	-.059	-.061
Trust in co-workers			-.035	-.030	-.032
Perceived supervisor support			-.009	.012	.012
Perceived job insecurity			-.034	-.035	-.035
<i>Intensification</i>					
Usual hours worked				-.093**	-.093**
Role overload				.222***	.222***
Time demands				.058	.059
<i>HIWPs</i>					
Power-autonomy					-.005
Information					.011
Rewards					-.013
Development					.009
R² change	.038	.315	.009	.036	.000
F change	3.29***	148.17***	3.19*	17.82***	0.05
R²	.038	.353	.362	.398	.398
Model F	3.29***	35.58***	28.65***	28.46***	23.82***

Note: $N = 928$ after list-wise deletion of missing values. Sig: *** = $p < .001$; ** = $p < .01$; * = $p < .05$.

respondent demographic variables were entered as potential control variables as a first block. The second block in each regression model contained the employee well-being covariates. While the tolerance and VIF indicators of multicollinearity were all found to be within the acceptable limits proposed by Hair et al. (1998), it can be anticipated that

Table 4. Hierarchical regression: standardized coefficients for job-induced stress.

Variables	Model 1	Model 2	Model 3	Model 4	Final Model
<i>Demographics</i>					
Gender	-.076*	-.087*	-.086*	-.027	-.031
Age	-.133***	-.052	.054	-.071*	-.072*
Tenure (log)	.156***	.116***	.117***	.096**	.098**
Unionized	.030	.010	.010	-.006	-.002
Permanent	.029	.020	.021	-.003	-.003
Manager	.059	.115	.116	.053	.059
Professional	.111	.132	.134	.052	.064
Technical/trades	-.110	-.078	-.078	-.094	-.088
Clerical/admin	-.055	.024	.023	-.021	-.015
Sales	-.052	-.010	-.009	-.022	-.017
Operators, drivers, labourers	-.111	-.080	-.080	-.088	-.084
<i>Well-being covariates</i>					
Job satisfaction		-.062*	-.044	-.051	-.052
Job fatigue		.210***	.208***	.147***	.147***
Work-life imbalance		.314***	.308***	.157***	.165***
<i>Job-quality controls</i>					
Trust in management			-.004	.015	-.026
Trust in co-workers			-.004	.016	.016
Perceived supervisor support			-.020	-.027	-.039
Perceived job insecurity			.029	.032	.032
<i>Intensification</i>					
Usual hours worked				.154***	.146***
Role overload				.281***	.282***
Time demands				-.033	-.031
<i>HIWPs</i>					
Power-autonomy					.003
Information					.083
Rewards					.023
Development					-.051
R² change	.085	.209	.001	.070	.003
F change	7.78***	96.01***	0.46	33.83***	1.20
R²	.085	.305	.306	.376	.379
Model F	7.78***	28.59***	22.28***	26.00***	22.05***

Note: $N = 928$ after list-wise deletion of missing values. Sig: *** = $p < .001$; ** = $p < .01$; * = $p < .05$.

at least some of the variance in each well-being variable is explained by the others. The third block of variables contained the job-quality control variables of manager and co-worker trust, supervisor support and perceived job insecurity. The final two blocks contained the three intensification and four high-involvement variables, respectively.

Table 5. Hierarchical regression: standardized coefficients for work–life imbalance.

Variables	Model 1	Model 2	Model 3	Model 4	Final Model
<i>Demographics</i>					
Gender	-.015	-.017	-.015	.072**	.074**
Age	-.122***	-.015	-.016	-.033	-.034
Tenure (log)	.109**	.054	.047	-.003	-.007
Unionized	.037	.013	.002	-.007	-.013
Permanent	.035	.031	.029	.011	.007
Manager	-.137	-.172	-.119	-.207	-.214
Professional	-.060	-.099	-.080	-.217	-.239
Technical/trades	-.141	-.133	-.127	-.164	-.179
Clerical/admin	-.227	-.205	-.193	-.249	-.259
Sales	-.111	-.089	-.080	-.103	-.110
Operators, drivers, labourers	-.130	-.116	-.110	-.137	-.145
<i>Well-being covariates</i>					
Job satisfaction		-.045	.032	.016	.034
Job stress		.289***	.272***	.114***	.118***
Job fatigue		.372***	.340***	.207***	.202***
<i>Job-quality controls</i>					
Trust in management			-.071	-.007	.058
Trust in co-workers			.022	.040	.055
Perceived supervisor support			-.147***	-.070*	-.031
Perceived job insecurity			-.006	.002	.004
<i>Intensification</i>					
Usual hours worked				.217***	.231***
Role overload				.178***	.167***
Time demands				.315***	.312***
<i>HIWPs</i>					
Power-autonomy					-.071*
Information					-.071*
Rewards					-.072*
Development					.046
R² change	.054	.307	.026	.159	.010
F change	4.75***	146.30***	9.68***	105.54***	4.87**
R²	.054	.361	.387	.546	.556
Model F	4.75***	36.86***	31.91***	51.87***	45.09***

Note: $N = 928$ after list-wise deletion of missing values. Sig: *** = $p < .001$; * = $p < .01$; * = $p < .05$.

Each block was entered separately to identify the amount of variance independently explained by these different types of predictor variable.

For job satisfaction, the final regression model explains 37 per cent of the variance (Table 2). The strongest predictors in the model are trust, autonomy and fatigue, followed by opportunities for development, rewards and perceived job insecurity. Having

greater job autonomy, experiencing a stronger link between performance and reward and having better access to development opportunities are all predictive of job satisfaction while lower trust, greater fatigue and greater perception of job risk predict dissatisfaction. Interestingly, none of the three intensification variables significantly predict job satisfaction, although it is reasonable to expect these to influence fatigue (Table 1). Supervisor support and trust in co-workers drop out of the model when the involvement variables are added, suggesting that involvement mediates the influence of support and co-worker trust on satisfaction.

In contrast, work intensification predicts employee fatigue (Table 3) and stress (Table 4), while none of the high-involvement variables do so. The regression model explains nearly 40 per cent of the variance in fatigue, with work–life imbalance and role overload the strongest predictors. The results imply that fatigue is a function of experiencing greater role overload, or work pressure, in fewer hours (the sign for overload is positive while that for hours worked is negative).

The regression model shown in Table 4 explains nearly 38 per cent of the variance in job-induced stress. Greater role overload and longer working hours are clear predictors of higher stress, together with fatigue and work–life imbalance. The addition of the involvement variables makes no significant improvement in the explanatory power of the final regression model.

The work–life imbalance model is the strongest of the four, with 55 per cent of the variance explained (Table 5). All three intensification variables significantly predict imbalance (collectively explaining nearly 16% of the variance), with perceived time demands from managers being the strongest single predictor followed by hours worked and overload. Three of the four high-involvement variables negatively predict imbalance, suggesting that having greater autonomy, receiving rewards based on merit and perceiving a better quality of communication with management may have a mitigating effect on jobs characterized by intense work.

Discussion and conclusions

Our national population survey including multiple measures of involvement, intensification and employee well-being, together with a wide range of controls, enables a rich picture of the relationships among these variables to emerge. The multivariate analyses show that high-involvement work processes are associated with greater satisfaction and better work–life balance and have no relationship with fatigue and stress, which means that hypothesis 1 is largely supported. Similarly, hypothesis 2 is largely supported because work intensification, particularly through role overload, is associated with greater fatigue, stress and work–life imbalance.

While women have worse work–life balance, and age and tenure are implicated in stress, an individual's occupational category is not, in itself, a predictor of negative outcomes. Although this is not a finely-grained analysis of occupation, it is consistent with Van Veldhoven et al.'s (2002) study of a large sample of the Dutch workforce and echoes Green's (2006, 2008) analysis, which shows the detrimental impact of declining discretion and rising bureaucratic control in professional occupations. In other words, negative forces can undermine job quality at any level.

Our findings must, of course, be viewed in relation to the study's limitations. First, it is cross-sectional, restricting inferences about causality, although this limitation is somewhat mixed. While happier workers might be offered greater opportunities for involvement, it is much less likely that stress, fatigue and work-life imbalance cause work intensity than the other way round. Second, the study is limited by its New Zealand location, a country in which organizations are typically of smaller size and more informally managed, which may foster greater involvement and bring more positive attitudes to it. Third, the study does not incorporate management reports of practices but gathers data on the ways in which workers interpret their environment. This raises the issue of common method bias, something that should, for the most part, be regarded as unproblematic because the experiences of workers are most authentically reported by them. For the remaining concerns, such as social desirability, the precautions taken are noted in the method section. Recognizing these limitations, what do the results imply?

They suggest that workers distinguish between processes that foster their involvement in decision-making and those that intensify their working life, and that they see the former as providing gains to their well-being or, at the least, an absence of threat. Greater autonomy, fairer reward and better development opportunities are factors that contribute to higher job satisfaction. Higher involvement is also connected to a better balance between work and life. Very importantly, there are no significant connections between any of the involvement processes and the negative outcomes of stress and fatigue. Overall, then, this survey shows gains to workers from empowerment, and from the companion processes that foster it. As far as New Zealand workers are concerned, this vector of change is benign. These findings confirm prior research using the Lawler model (Mackie et al., 2001; Macky and Boxall, 2008; Vandenberg et al., 1999) and resonate with analysis of WERS 2004 (Wood et al., 2012) and the British Skills Survey 2006 (Felstead et al., 2010; Gallie, 2013).

In stark contrast, our results show that higher levels of work intensity pose risks to employee well-being, increasing fatigue and stress and contributing to work-life imbalance. They imply that the risks are there in every occupational category, including, it should be noted, management. No matter where a person's job is located in the occupational spectrum, excessive pressure can undermine their well-being while greater autonomy, and supportive processes, can enhance it.

What are the implications for the debate around high-performance work systems? In a nutshell, one can expect implementations of HPWSs to be beneficial for workers when two conditions are met. First, the individual's experience of autonomy is genuinely improved, fostering the skill utilization and creativity that can come from greater control (e.g. Felstead et al., 2010; Gallie, 2013). This, as Appelbaum et al. (2000) argue, is likely to work best when involvement sits within an organizational context that fosters good communication, reward fairness and individual development. These factors show a positive contribution to well-being on top of job-based empowerment and participation in decision-making. Second, employee welfare is more likely to be safeguarded when the accompanying effort levels are tolerable: when workers do not experience excessive in-work pressure or unwanted demands on their personal time.

In reality, financial and production pressures will continue to influence the design and implementation of work reforms (e.g. Eurofound, 2012). However, if a better quality of

working life is a key objective in a reform based around employee involvement, close attention needs to be paid to the balance between releasing human potential and increasing work intensity. Employee well-being is more likely to improve when the scope for discretion and creativity is enhanced while simultaneously ensuring that workloads are reasonable and that workers can lead balanced lives.

Funding

This research received no specific grant from any funding agency in the public, commercial, or not-for-profit sectors.

References

- Appelbaum E, Bailey T, Berg P and Kalleberg A (2000) *Manufacturing Advantage: Why High-Performance Work Systems Pay Off*. Ithaca, NY: ILR Press.
- Ashton D and Sung J (2002) *Supporting Learning for High Performance Working*. Geneva: International Labour Organization.
- Becker B and Gerhart B (1996) The impact of human resource management on organizational performance: progress and prospects. *Academy of Management Journal* 39(4): 779–801.
- Beehr TA, Walsh JT and Taber TD (1976) Relationship of stress to individually and organizationally valued states: higher order needs as a moderator. *Journal of Applied Psychology* 61(1): 41–7.
- Boxall P and Macky K (2009) Research and theory on high-performance work systems: progressing the high-involvement stream. *Human Resource Management Journal* 19(1): 3–23.
- Bryson A, Forth J and Kirby S (2005) High-involvement management practices, trade union representation and workplace performance in Britain. *Scottish Journal of Political Economy* 52(3): 451–91.
- Cappelli P and Neumark D (2001) Do ‘high performance’ work practices improve establishment level outcomes? *Industrial & Labor Relations Review* 54: 737–76.
- Conway JM and Lance CE (2010) What reviewers should expect from authors regarding common method bias in organizational research. *Journal of Business and Psychology* 25: 325–34.
- Cook J and Wall TD (1980) New work attitude measures of trust, organizational commitment and personal need non-fulfilment. *Journal of Occupational Psychology* 53(1): 39–52.
- Danford A, Richardson M, Stewart P, Tailby S and Upchurch M (2008) Partnership, high performance work systems and quality of working life. *New Technology, Work and Employment* 23(3): 151–66.
- Delbridge R (2007) HRM and contemporary manufacturing. In: Boxall P, Purcell J and Wright P (eds) *The Oxford Handbook of Human Resource Management*. Oxford: Oxford University Press, 405–27.
- Drago R, Wooden M and Black D (2009) Long work hours: volunteers and conscripts. *British Journal of Industrial Relations* 47(3): 571–600.
- Eby LT, Casper WJ, Lockwood A, Bordeaux C and Brinley A (2005) Work and family research in IO/OB: content analysis and review of the literature (1980–2002). *Journal of Vocational Behavior* 66: 124–97.
- Eurofound (2012) *Work Organisation and Innovation*. Luxembourg: Publications Office of the European Union.
- Felstead A, Gallie D, Green F and Zhou Y (2010) Employee involvement, the quality of training and the learning environment: an individual level analysis. *International Journal of Human Resource Management* 21(10): 1667–88.

- Frenkel S, Sanders K and Bednall T (2013) Employee perceptions of management relations as influences on job satisfaction and quit intentions. *Asia Pacific Journal of Management* 30: 7–29.
- Frone MR and Yardley JK (1996) Workplace family-supportive programmes: predictors of employed parents' importance ratings. *Journal of Occupational and Organizational Psychology* 69(4): 351–66.
- Gallie D (2007) *Employment Regimes and the Quality of Work*. Oxford: Oxford University Press.
- Gallie D (2013) Direct participation and the quality of work. *Human Relations* 66(4): 453–73.
- Gallie D, White M, Cheng Y and Tomlinson M (1998) *Restructuring the Employment Relationship*. Oxford: Clarendon Press.
- Gallie D, Zhou Y, Felstead A and Green F (2012) Teamwork, skill development and employee welfare. *British Journal of Industrial Relations* 50(1): 23–46.
- Geare A, Edgar F and Deng M (2006) Implementation and consumption of HRM: stakeholder differences. *Research and Practice in Human Resource Management* 14(2): 34–48.
- Gittel J, Seidner R and Wimbush J (2010) A relational model of how high performance work systems work. *Organization Science* 21(2): 299–311.
- Godard J (2004) A critical assessment of the high-performance paradigm. *British Journal of Industrial Relations* 42(2): 349–78.
- Grant A, Christianson M and Price R (2007) Happiness, health, or relationships? Managerial practices and employee well-being tradeoffs. *Academy of Management Perspectives* 21: 51–63.
- Green F (2006) *Demanding Work: The Paradox of Job Quality in the Affluent Economy*. Princeton, NJ: Princeton University Press.
- Green F (2008) Work effort and worker well-being in the age of affluence. In: Burke RJ and Cooper CL (eds) *The Long Work Hours Culture: Causes, Consequences and Choices*. Bingley: Emerald, 115–35.
- Hair JF, Anderson RE, Tatham RL and Black WC (1998) *Multivariate Data Analysis*. 5th Edition. London: Prentice Hall.
- Hoyrup S (2010) Employee-driven innovation and workplace learning: basic concepts, approaches and themes. *Transfer: European Review of Labour and Research* 16(2): 143–54.
- Kalleberg A (2011) *Good Jobs, Bad Jobs: The Rise of Polarized and Precarious Employment Systems in the United States, 1970s to 2000s*. New York: Russell Sage Foundation.
- Kalleberg A, Nesheim T and Olsen K (2009) Is participation good or bad for workers? Effects of autonomy, consultation and teamwork on stress among workers in Norway. *Acta Sociologica* 52(2): 99–116.
- Karasek R and Theorell T (1990) *Healthy Work: Stress, Productivity and the Reconstruction of Working Life*. New York: Basic Books.
- Kaufman B and Miller B (2011) The firm's choice of HRM practices: economics meets strategic human resource management. *Industrial & Labor Relations Review* 64(3): 526–57.
- Kline TJB, Sulsky LM and Rever-Moriyama SD (2000) Common method variance and specification errors: a practical approach to detection. *Journal of Psychology* 134(4): 401–21.
- Landsbergis PA, Cahill J and Schnall P (1999) The impact of lean production and related new systems of work organization on worker health. *Journal of Occupational Health Psychology* 4(2): 108–30.
- Lawler EE (1986) *High-Involvement Management: Participative Strategies for Improving Organizational Performance*. San Francisco, CA: Jossey-Bass.
- Lloyd C and Payne J (2006) Goodbye to all that? A critical re-evaluation of the role of the high performance work organization within the UK skills debate. *Work, Employment and Society* 20(1): 151–65.

- Mackie KS, Holahan CK and Gottlieb NH (2001) Employee involvement management practices, work stress, and depression in employees of a human services residential care facility. *Human Relations* 54(8): 1065–92.
- Macky K and Boxall P (2008) High-involvement work processes, work intensification and employee well-being: a study of New Zealand worker experiences. *Asia Pacific Journal of Human Resources* 46(1): 38–55.
- Marchington M and Grugulis I (2000) 'Best practice': human resource management: perfect opportunity or dangerous illusion? *International Journal of Human Resource Management* 11(6): 1104–24.
- Ono Y, Watanabe S, Kaneko S, Matsumoto K and Miyako M (1982) Working hours and fatigue of Japanese flight attendants. *Journal of Human Ergology* 20: 155–64.
- Oshagbemi T (1999) Overall job satisfaction: how good are single versus multiple-item measures? *Journal of Managerial Psychology* 14(5): 388–403.
- Pauwwe J and Boselie P (2003) Challenging 'strategic HRM' and the relevance of the institutional setting. *Human Resource Management Journal* 13(3): 56–70.
- Purcell J (1999) The search for 'best practice' and 'best fit': chimera or cul-de-sac? *Human Resource Management Journal* 9(3): 26–41.
- Ramsay H, Scholarios D and Harley B (2000) Employees and high-performance work systems: testing inside the black box. *British Journal of Industrial Relations* 38 (4): 501–31.
- Rhoades L and Eisenberger R (2002) Perceived organizational support: a review of the literature. *Journal of Applied Psychology* 87(4): 698–714.
- Sparks K, Cooper C, Fried Y and Shirom A (1997) The effect of hours of work on health: a meta-analytic review. *Journal of Occupational and Organizational Psychology* 70(4): 391–409.
- Stanton JM, Balzer WK, Smith PC, Parra LF and Ironson G (2001) A general measure of work stress: the stress in general scale. *Educational and Psychological Measurement* 61(5): 866–88.
- Stewart P and Danford A (2008) Editorial: union strategies and worker engagement with new forms of work and employment. *New Technology, Work and Employment* 23(3): 146–50.
- Thompson CA, Beauvais LL and Lyness KS (1999) When work–family benefits are not enough: the influence of work–family culture on benefit utilization, organizational attachment, and work–family conflict. *Journal of Vocational Behavior* 54: 392–415.
- Vandenberg RJ, Richardson HA and Eastman LJ (1999) The impact of high involvement work processes on organizational effectiveness: a second order latent variable approach. *Group and Organization Management* 24(1): 300–39.
- Van Veldhoven M, Jonge J, Broersen S, Kompier M and Meijman T (2002) Specific relationships between psychosocial job conditions and job-related stress: a three-level analytic approach. *Work and Stress* 16(3): 207–28.
- Walton R (1985) From control to commitment in the workplace. *Harvard Business Review* 63(2): 77–84.
- Wanous JP, Reichers AE and Hudy MJ (1997) Overall job satisfaction: how good are single-item measures? *Journal of Applied Psychology* 82(2): 247–52.
- Warr P, Cook J and Wall T (1979) Scales for the measurement of some work attitudes and aspects of psychological well-being. *Journal of Occupational Psychology* 52: 129–48.
- White M, Hill S, McGovern P, Mills C and Smeaton D (2003) 'High-performance' management practices, working hours and work–life balance. *British Journal of Industrial Relations* 41(2): 175–95.
- Whitener EM (2001) Do 'high commitment' human resource practices affect employee commitment? A cross-level analysis using hierarchical linear modelling. *Journal of Management* 27: 515–35.

- Wood S (1999) Human resource management and performance. *International Journal of Management Reviews* 1(4): 367–413.
- Wood S and De Menezes L (2011) High involvement management, high-performance work systems and well-being. *International Journal of Human Resource Management* 22(7): 1586–610.
- Wood S, Van Veldhoven M, Croon M and de Menezes L (2012) Enriched job design, high involvement management and organizational performance: the mediating roles of job satisfaction and well-being. *Human Relations* 65(4): 419–45.
- Yousef DA (2002) Job satisfaction as a mediator of the relationship between job stressors and affective, continuance, and normative commitment: a path analytical approach. *International Journal of Stress Management* 9(2): 99–112.

Peter Boxall is Professor of Human Resource Management at the University of Auckland Business School. His research is concerned with HRM, organizational performance and employee well-being. He is the co-author with John Purcell of *Strategy and Human Resource Management* (Palgrave Macmillan), co-editor with John Purcell and Patrick Wright of the *Oxford Handbook of Human Resource Management* (Oxford University Press) and co-editor with Richard Freeman and Peter Haynes of *What Workers Say: Employee Voice in the Anglo-American Workplace* (Cornell University Press).

Keith Macky is Associate Professor of Human Resource Management at the Auckland University of Technology Faculty of Business and Law. His current research is concerned with HRM and employee well-being, generational differences at work, and the relationship between employee engagement and instrumentalism.

Date submitted May 2012

Date accepted September 2013

Appendix I

Measures and items

Role overload

- I am given enough time to do what is expected of me on my job (R)
- It often seems like I have too much work for one person to do
- The performance standards on my job are too high
- I have too much work to do to do everything well
- The amount of work I am asked to do is fair (R)
- I never seem to have enough time to get everything done

Time demands

- To get ahead in my organization, employees are expected to work more than their contracted hours each week
- Employees are often expected to work overtime or take work home at night and/or weekends
- Employees are regularly expected to put their jobs before their families or personal lives

- To be viewed favourably by senior managers, employees in your organization must put their jobs ahead of their family/personal lives

Power-autonomy

- I have sufficient authority to fulfil my job responsibilities
- I have enough input in deciding how to accomplish my work
- I am encouraged to participate in decisions that affect me
- I have enough freedom over how I do my job
- I have enough authority to make decisions necessary to provide quality customer service
- For the most part, I am encouraged to participate in and make decisions that affect my day-to-day activities
- All in all, I am given enough authority to act and make decisions about my work

Information

- Company policies and procedures are clearly communicated to employees
- Management gives sufficient notice to employees prior to making changes in policies and procedures
- Most of the time I have sufficient notice of changes that affect my work
- Management takes time to explain to employees the reasoning behind critical decisions that are made
- Management appears adequately informed of the important issues relating to my work
- Management makes a sufficient effort to get the opinions and feelings of people where I work
- Management tends to stay informed of employee needs
- The channels of employee communication with top management are effective
- Top management communicates a clear organizational mission
- Management communicates clearly how each part of the organization contributes to achieving the organizational mission
- Employees of this organization work toward common organizational goals

Rewards

- My performance evaluations within the past few years have been helpful to me in my professional development
- There is a strong link between how well I perform my job and the likelihood of my receiving recognition and praise
- There is a strong link between how well I perform my job and the likelihood of my receiving a raise in pay/salary
- There is a strong link between how well I perform my job and the likelihood of my receiving high performance appraisal ratings
- Generally, I feel this company rewards employees who make an extra effort
- I am satisfied with the amount of recognition I receive when I do a good job
- If I do my job well, I am likely to be promoted

- There is a strong link between how my team performs and the likelihood of my receiving a raise in pay/salary
- There is a strong link between how well my organization performs and the likelihood of my receiving a raise in pay/salary

Knowledge

- I am given a real opportunity to improve my skills at this company through education and training programmes
- I have had sufficient job-related training
- My supervisor has helped me acquire additional job-related training when I have needed it
- I receive ongoing training, which enables me to do my job better
- I am satisfied with the number of training and development programmes available to me
- I am satisfied with the quality of training and development available to me
- The training and educational activities I have received have enabled me to perform my job more effectively
- Overall, I am satisfied with my training opportunities

Fatigue

- I feel completely worn out at the end of each day
- I find it difficult to get up to go to work
- I become tired in a short time at work

Work-life imbalance

- After work, I come home too tired to do some of the things I'd like to do
- On the job I have so much work to do that it takes away from my personal interests
- My family or friends dislike how often I am preoccupied with my work while I am at home
- My work takes up time that I'd like to spend with family or friends
- My job interferes with my responsibilities at home, such as gardening, cooking, cleaning, home maintenance, or child care
- My job keeps me from spending the amount of time I would like to spend with my family or friends

Trust in management

- Management where I work is sincere in its attempts to meet the workers' point of view
- Our organization has a poor future unless it can attract better managers (R)
- Management can be trusted to make sensible decisions for the organization's future
- Management at work seems to do an efficient job
- I feel quite confident that the company will always try to treat me fairly

- Our management would be quite prepared to gain advantage by deceiving the workers (R)

Trust in co-workers

- If I got into difficulties at work, I know my workmates would try to help me out
- I can trust the people I work with to lend me a hand if I need it
- Most of my workmates can be relied upon to do as they say they will do
- I have full confidence in the skills of my workmates
- Most of my fellow workers would get on with their work without direct supervision
- I can rely on other workers not to make my job more difficult by careless work

Perceived supervisor support

- Your manager really cares about your well-being
- Your manager considers your goals and values
- Your manager shows little concern for you (R)
- Your manager cares about your opinions
- Your manager is willing to help if you need a special favour
- Help is available from your manager when you have a problem
- Your manager would forgive an honest mistake on your part
- If given the opportunity, your manager would take advantage of you (R)