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Are High Performance Work Practices enabling or disabling? Exploring the relationship between HPWPs and work-related disability disadvantage

Abstract

Drawing on Stone and Colella (1996), this paper develops competing 'enabling' and 'disabling' effects hypotheses concerning the potential relationship between High Performance Work Practices (HPWPs) and work-related disability disadvantage, and also argues that this relationship will depend on the nature of the workplace's disability equality climate. The paper draws on matched establishment-employee data from the nationally representative 2011 Workplace Employment Relations Study (WERS) in Britain to evaluate these issues empirically. The results suggest limited support for the 'disabling effects' hypothesis by demonstrating that the proportion of the workforce that is disabled is lower in workplaces making greater use of HPWPs, although this relationship is found to be moderated by the nature of the equality climate. There is, however, only limited evidence to suggest that gaps in work-related well-being between disabled workers and their non-disabled counterparts vary with the use of HPWPs.

Introduction

Disability-related employment disadvantage among the working-age population is extensive and enduring across developed countries (ILO, 2009; OECD, 2010). Disadvantage is often measured in terms of 'gaps' in outcomes between disabled and non-disabled people. In the UK, for example, the disability wage gap is estimated to be 10 to 15 percent (Jones, 2006), while the disability employment gap is currently in excess of 30 percentage points (Jones & Wass, 2013). The disability employment gap has received particular attention within policy and research circles, with efforts having been made to encourage the labour market participation of disabled people (Bell & Smith, 2004) and to address the disadvantage disabled people experience in gaining access to work (House of Commons, 2013; Schur, Kruse, & Blanck, 2013).

In addressing the disability employment gap, however, Jones (1997:56) argues that there is a need for greater attention to be paid to the treatment of disabled employees once in the workplace, given the potential impact of this on disabled people's recruitment and retention. This argument is mirrored in an emerging recognition among governments that unless employers offer workplace environments that are supportive of disabled people, the disability employment gap is unlikely to improve (Black, 2008; Department of Work and Pensions, 2013). In light of this, it is perhaps concerning that previous studies have identified disability gaps in relation to several aspects of work-related well-being such as perceptions of job satisfaction and fair treatment (Fevre, Robinson, Lewis, & Jones, 2013; Jones & Wass, 2012; Schur, Kruse, Blasi, & Blanck, 2009). These studies highlight the extent to which there is a need for a greater understanding of the factors that underlie the disadvantage disabled people experience within the workplace.

A useful starting point with regard to developing this understanding is the theoretical framework developed by Stone & Colella (1996). This framework suggests that the treatment of disabled employees in the workplace varies by: the personal characteristics of the disabled individual and their co-workers; environmental factors (i.e. legislation); and organizational characteristics. Where personal characteristics are concerned, the attributes of disabled people, their co-workers and their managers are seen to influence the extent to which false negative generalisations resulting from prejudice (affective and attitudinal bias), stereotyping (cognitive bias) and discrimination (behavioural bias) are likely to emerge (Lengnick-Hall, Gaunt, & Kulkarni, 2008). Where the legislative environment is concerned, research has focused on the role of legal interventions in engendering workplace accommodations for disabled people, often demonstrating that such interventions have been at best only partially effective, with employers frequently failing to make even inexpensive adjustments to keep disabled people in work (Schur, Nishii, Adya, Kruse, Bruyère, & Blanck, 2014; Simm, Aston, Williams, Hill, Bellis, & Meager, 2007; Williams, Copestake, Eversley, & Stafford, 2008). Where organizational characteristics are concerned, studies have explored the role of the employer and the workplace-level factors that influence employment-related outcomes for disabled people (Colella & Bruyère, 2011:494; Klimoski & Donahue, 1997:111), evaluating in particular, the impact of the organizational equality climate in terms of perceived company fairness and responsiveness to employees (Schur et al., 2009), and the availability of flexible working practices (Schur et al., 2013).

This study seeks to deepen and extend understanding of the organizational characteristics element of the Stone and Colella (1996) model by exploring the influence of a set of management practices that have not been extensively analysed in previous disability research – High Performance Work Practices (HPWPs). Such practices, relating to employee

selection, job design, performance management and reward for example, have become increasingly widely adopted in workplaces in recent years (van Wanrooy, Bewley, Bryson, Forth, Freeth, Stokes, & Wood, 2013), and they may (as outlined below) affect the recruitment and retention of disabled people as well as their treatment once in the workplace. The paper also explores the relationship between HPWPs and the nature of the broader disability equality climate (Colella & Bruyère, 2011:494; Lengnick-Hall, 2007; Stone & Colella, 1996), particularly in terms of whether the influence of HPWPs on outcomes for disabled people varies depending on whether the workplace has a climate that supports disabled employees. The analysis draws on data from the nationally representative 2011 Workplace Employment Relations Study (WERS) in Britain to explore the influence of HPWPs on: first, the proportion of the workforce that is disabled; and second, disabled employees' work-related well-being as measured by perceptions of job satisfaction, fair treatment and anxiety-contentment.

HPWPs and Disability

There is little consensus on the overall impact of HPWPs on outcomes for employees, particularly in relation to whether the potentially positive effects of such practices in terms of increasing employee skills and participation at work are offset by the negative effects of increased work intensity (Appelbaum, 2002; Boxall & Macky, 2014; Kalleberg, Nesheim, & Olsen, 2009; Ramsay, Scholarios, & Harley, 2000). In addition, studies to date have generally explored the impact of HPWPs on outcomes at the aggregate level, while less attention has been paid to whether their impact varies between different employee groups. This paper seeks to address this issue by theorising and empirically testing the differential effects of HPWPs on employee outcomes according to disability.

In exploring this issue, as mentioned above, this paper draws on and extends theorisation of the 'organizational characteristics' element of the Stone and Colella (1996) model by developing competing 'enabling effects' and 'disabling effects' hypotheses concerning the potential impact of HPWPs on disabled people. The 'enabling effects' hypothesis argues that HPWPs may result in the increased recruitment and retention of disabled employees and in reduced disability gaps in work-related well-being, while the alternative 'disabling effects' hypothesis argues that HPWPs may have potentially negative effects on these outcomes. The discussion focuses on five HPWPs (competency testing in selection, teamworking, functional flexibility, performance appraisal and individual performance-related pay (IPRP)) that are particularly likely, as argued below, to influence employment outcomes for disabled people.

The *'enabling effects'* hypothesis

The HPWPs listed above may have the potential to influence employment outcomes positively for disabled people in a number of different ways. Where formal competency tests for selection are concerned, if these evaluate applicants' skills objectively against a job analysis and person specification, this may increase the likelihood that disabled applicants' capabilities will be evaluated in a fair and impartial manner (Stone & Williams, 1997). This is in contrast to interviews, within which high levels of subjectivity (Ren, Paetzold, & Colella, 2008) may result in selection taking place on the basis of assumptions or negative stereotypes concerning disabled applicants' abilities (Noon, Healy, Forson, & Oikelome, 2013: 343). Additionally, competency test scores provide an opportunity for an exploration of ways in which the job might be adjusted to fit with disabled applicants' capabilities, and for ability to be assessed in the context of these potential adjustments. This might not only

improve disabled employees' chances within selection processes but, once appointed, it might also result in better task assignment, thereby reducing two key in-work disability-related disadvantages associated with lower levels of work-related well-being – under-employment and poor person-job fit (Colella & Bruyère, 2011).

Turning to job design, if teamworking and functional flexibility provide disabled employees with greater control and autonomy over the way they perform their work tasks (Appelbaum, Bailey, Berg, & Kalleberg, 2000; Hackman and Oldham, 1980; Procter & Mueller, 2000), this may facilitate the accommodation of impairment-related restrictions. Such accommodation might be facilitated further should teamworking provide disabled people with the scope to switch between work tasks, or for tasks to be allocated within the team in a manner that enables disabled employees to focus on the activities they are best able to perform. This is in contrast to Tayloristic work systems, within which work tasks are highly prescribed and employees cannot modify the range, order or the manner in which jobs are carried out. Teamworking may also generate indirect enabling effects, the 'contact hypothesis' suggesting that it will increase interaction between disabled and non-disabled employees thereby helping counter negative stereotypes (Stone & Colella, 1996:380).

Turning to performance appraisals, Klimoski & Donahue (1997: 111) argue that inaccurate, misaligned or unclear performance expectations 'frequently surface as part of the "problem" facing disabled people in their attempt to act as good sub-ordinates and colleagues'. Given this, performance appraisals may have enabling effects for disabled employees should they provide clear and objective standards, explicit expectations, accurate performance measurement and reliable feedback (Gelfand, Nishi, Aver, & Schneider, 2005). In addition, by facilitating discussions between disabled employees and their line managers, performance appraisals may allow for an exploration of how job roles can best be shaped

(Armstrong & Baron, 2005), and may also help identify the training disabled employees require to maximise their potential. Beyond this, performance appraisals may have indirect enabling effects should they raise managers' awareness of disabled employees' positive contributions to the organization, thereby increasing the likelihood of disabled employees receiving informal mentoring and sponsorship for promotion (Stone & Colella, 1996:380).

A further HPWP that might have enabling effects for disabled people is individual performance-related pay (IPRP). Where IPRP is determined on the basis of appraisal outcomes, this may increase the likelihood that disabled employees will be rewarded on the basis of their actual achievements, measured against agreed criteria (Stone & Colella, 1996:374), rather than on the basis of negative stereotypes concerning their contribution. Also, if rewards are allocated within IPRP systems on the basis of the achievement of individualised goals or targets, this provides scope for the development of individual performance criteria that take impairment-related restrictions into account. Furthermore, groups that experience discrimination are often over-skilled for their job roles and hence perform highly within them (Dickens, 1998:31; Rubery, 1995:644). As such, they are likely to be the beneficiaries of pay systems that link individual performance to reward. If disabled people are overskilled for their job roles, they may well benefit from pay systems that link pay to performance appraisal ratings (Colella & Bruyère, 2011:492).

The *'d*isabling effects*'* hypothesis

While the arguments outlined above suggest that HPWPs may have a positive impact on work-related outcomes for disabled people, the alternative 'disabling effects' hypothesis proposes that HPWPs will render workplaces less hospitable for disabled employees (see Foster and Wass, 2013), resulting in fewer disabled people being employed and relatively

poorer work-related well-being. The ensuing discussion considers the ways in which HPWPs may have such 'disabling effects'.

Turning to formal competency tests for selection, it may be difficult for disabled people to demonstrate competence (Stone & Williams, 1997:217) especially if such tests do not consider how a job might be adapted to accommodate impairment-related restrictions but instead reflect a standard job description that contains assumptions about the ideal manner in which job tasks should be performed (Wolf & Jenkins, 2006). As such, formalised selection tests can be used to facilitate 'circumvention by compliance' (Noon et al., 2013: 343), giving selection procedures an appearance of impartiality to justify discriminatory selection decisions. Additionally, if tests do not consider ways in which jobs might be adapted, but are used to make decisions about the jobs into which disabled recruits should be placed, this may result in under-employment and poor person-job fit, with negative implications for retention and work-related well-being.

Teamworking and functional flexibility might also have potential disabling effects if everyone in the team is expected to perform to a particular or similar standard (Vickers, 2012), and if they are required to display multiple skills and the ability to perform a wide range of job roles as and when required. Indeed, rather than producing less specific job descriptions, employers may instead specify that all employees must be able to perform multiple job tasks (Foster & Wass, 2013:714). Hence, to the extent that teamworking and functional flexibility require a universal and polyvalent employee, this may result in job descriptions which can be unrealistic for disabled people. Also, as a consequence of task interdependence, non-disabled employees may react negatively to disabled co-workers if they perceive that their presence within the team will reduce the team's ability to meet its performance goals (Stone & Colella, 1996:378).

Turning to performance appraisals, these may disproportionately disadvantage disabled people should they fail to apply objective standards in measuring actual performance against relevant criteria. For example, the 'horns' effect – in which an appraisee's under-performance in one single task has a negative influence on their overall appraisal rating – may impact particularly negatively on disabled employees given impairment-related restrictions. Disabled employees might also be particularly disadvantaged should appraisals focus on the employee's ability to fit in with standard organizational practice and organizational norms (Rubery, 1995). As Dickens (1998) and Rubery (1995) argue, in the absence of equality training and transparency in appraisal criteria to prevent such problems from occurring, performance appraisals are unlikely to provide accurate assessments and consistent feedback for disabled employees, and may instead perpetuate negative disability stereotypes (also see Colella, DeNisi, & Varma, 1997).

The disabling effects of performance appraisals might be compounded in instances where unduly poor appraisal ratings received by disabled employees feed into IPRP decisions, thereby resulting in disproportionately poor pay awards. IPRP systems based on competitive and individualised assessment may also have disabling effects if they reduce cooperation and increase competition for rewards, thereby creating an environment characterised by a tendency to compare and criticise the performance of others. Such environments are unlikely to prove supportive of disabled employees (Colella et al., 1997; Stone & Colella, 1996: 379). Beyond this, IPRP is likely to be particularly disadvantageous for disabled employees in instances where it makes no provision to deviate from either standard job descriptions or performance targets (Stone & Colella, 1996: 378).

From a theoretical perspective, therefore, HPWPs could have 'enabling' and/or 'disabling' effects for disabled people. As such, the first aim of the paper is to evaluate these

two competing hypotheses empirically by exploring whether there is a relationship between the use of the HPWPs discussed above and either the proportion of the workforce reporting disability at the workplace or disabled employees' reports of their work-related well-being.

The influence of the disability equality climate

Further to the above, Stone & Colella's (1996) framework suggests the impact of factors relating to the management and organization of work (such as HPWPs) on disabled people is likely to depend on broader organizational values, in particular whether these reflect a commitment to social justice and equality. As such, in workplaces with strong performance cultures, where values and norms encourage competitive performance between individuals (Stone & Colella 1996), the use of HPWPs might have more negative consequences for disabled employees than in workplaces in which there is a greater awareness of (and sensitivity to) disabled employees' needs (see Jones, 2013; Schur et al., 2005, 2009, 2013, 2014). There is a growing body of literature that acknowledges the importance of inclusive diversity-friendly climates in reducing disability disadvantage (Colella & Bruyère, 2011:494; Lengnick-Hall, 2007). For example, Schur et al. (2005, 2009, 2013) demonstrate the positive impact of a justice climate on outcomes for disabled employees. Similarly, Forth and Rincon-Aznar (2008) report a positive association between the adoption of equal opportunities (EO) policies and disabled employees' perceptions of fair treatment by management, while Jones & Latreille (2010) report a positive association between the presence of an EO policy and disabled employees' relative wages.

Given this, one might argue that HPWPs are more likely to be deployed in a manner that has 'enabling effects' in workplaces with supportive equality climates. Within such contexts, it is more likely that HPWPs such as competency tests, performance appraisals and

IPRP will be monitored and reviewed to ensure they do not discriminate against disabled people (Stone & Colella, 1996: 376), and that managers will be sensitized to the potential disabling effects of these practices. In addition, where teamworking and functional flexibility are concerned, one might anticipate that managers will be trained and socialised to ensure that jobs are designed in a manner that does not disadvantage disabled employees and that reasonable adjustments are made (Schur et al., 2014). The nature of the equality climate might also be important in signalling to non-disabled team members the unacceptability of behaviour that excludes or otherwise disadvantages disabled employees.

There are grounds, therefore, to argue that the nature of the equality climate will influence whether HPWPs have enabling or disabling effects for disabled employees. As such, the paper's second aim will be to assess whether the enabling/disabling effects of HPWPs depends on the nature of the broader workplace disability equality climate (as identified by the adoption of a set of disability equality practices).

Data and Methods of Analysis

The analysis uses matched establishment-employee data from WERS 2011. WERS is designed to be nationally representative of British workplaces with five or more employees in all industry sectors (with the exception of agriculture, hunting, forestry and fishing, and mining and quarrying) when probability weighted to account for the complex nature of the survey design. It is widely regarded as a highly authoritative data source, being sponsored by the British government, the Economic and Social Research Council, the Advisory, Conciliation and Arbitration Service, and the Policy Studies Institute. The management survey comprises 2,680 observations with a response rate of 46.5 percent. The respondent is the manager at the workplace who has primary responsibility for employment relations

matters. The survey of employees (sent to a random sample of up to 25 employees in each workplace) comprises 21,981 responses, with a response rate of 54.3 percent (van Wanrooy et al., 2013). By linking the management and employee data, it is possible to explore the relationship between workplace characteristics (including HPWPs) and disabled employees' experiences of work. Respondents to the survey of employees in the management and senior official occupational category (8 percent of the sample) are excluded from the analysis as the questions on HPWPs in WERS ask about whether these apply to either the largest non-managerial occupational group or to non-management employees, hence there are no data on whether they also apply to managers/ senior officials. After excluding data with missing observations, 14,637 employees are included within the analysis

Dependent variables

i) Proportion of workforce disabled. The data for this variable are taken from the survey of employees rather than the management survey. This is because the estimate given by management respondents concerning the proportion of their workforce that is disabled (1.4 percent) is a substantial underestimate (and hence potentially unreliable) when compared to the percentage of disabled employees recorded in the Labour Force Survey in 2011 (11.5 percent). This discrepancy is nevertheless notable in highlighting the extent to which disability remains a hidden and unrecognised feature in many workplaces. The survey of employees asks 'Are your day-to-day activities limited because of a health problem or disability which has lasted, or is expected to last, at least 12 months?'. This is the wording of the standardised question for government social surveys to identify disabled people with rights under the Equality Act 2010 in Britain and in EU Statistics on Income and Living Conditions (Office for National Statistics, 2011). Disability is defined to include the

responses ‘Yes, limited a little’ and ‘Yes, limited a lot’, whereas ‘No’ defines the non-disabled group. When employee responses are integrated into the main management survey, the average percentage of the non-management workforce that is disabled is 9.9 percent, suggesting that the WERS employee data are reasonably representative in terms of disability presence.

ii) Disabled employees’ work-related well-being. This is measured using three commonly considered individual-level indicators of employee work-related well-being, namely perceptions of job satisfaction, fair treatment by managers and anxiety-contentment. Previous research has suggested such measures are important indicators of disabled people’s experiences of disadvantage at work (Bewley & Forth, 2010; Fevre et al., 2013; Forth & Rincon-Aznar, 2008; Schur et al., 2009) and may help capture the overall effect of HPWPs. Such outcomes are not only important in their own right (Jones & Wass, 2012), but may also have significant implications for employee performance in the workplace (Stone & Colella, 1996: 386).

Where the job satisfaction measure is concerned, eight items measured on a 5-point scale (where 1=very dissatisfied and 5=very satisfied) ask employees how satisfied they are with elements of their job (sample items include the sense of achievement they get from their work and the amount of pay they receive). These load onto a single factor in an exploratory factor analysis and are therefore combined into a single scale (Cronbach alpha reliability of 0.86). Where the perception of fair treatment measure is concerned, this was developed using a single item measure asking: ‘To what extent do you agree or disagree that managers here treat employees fairly’ (on a 5-point scale where 1=strongly disagree and 5=strongly agree). Work-related anxiety-contentment is assessed by using Warr’s (1990) scale measuring six emotional states in response to the question ‘Thinking of the past few weeks, how much of

the time has your job made you feel each of the following? Tense/ depressed/ worried/ gloomy/ uneasy/ miserable' (on a 5-point scale where 1=all the time and 5=never). Responses load onto a single factor in an exploratory factor analysis and are combined into a single scale with higher values denoting lower levels of anxiety (Cronbach alpha reliability of 0.91).

Independent HPWP variables

Separate measures are developed for five HPWPs and these are used in both the employee and workplace level analysis. These measures are constructed using data from the management survey, and relate (in accordance with the HPWPs discussed in the literature section of the paper) to competency testing, teamworking, functional flexibility, performance appraisal and IPRP (appendix 1 contains details of how these measures were constructed and their workplace-level means). Measures of this type, which provide an indication of the prevalence of use of HPWPs within the workplace (rather than just presence), have been widely used in the manner implemented here in previous research on HPWPs using the WERS data (Wood & Bryson, 2009).

It is also argued in the strategic human resource management literature that the impact of single HPWPs used in isolation on employee attitudes and behaviours which influence organizational performance may be minimal. Instead, where a number of HPWPs are introduced together in an integrated, mutually reinforcing manner, performance effects will emerge (Becker & Huselid, 1998; Guest, 2011). To account for this, 'count' measures for the number of HPWPs adopted are frequently used when exploring their impact on employees and organizational outcomes (Combs, Liu, Hall, & Ketchen, 2006). In order to establish whether similar effects emerge with regard to the association between HPWPs and disability-

related outcomes, corresponding analysis is performed using a count measure (0-5) of the number of HPWPs at the workplace (mean = 2.03).

Control variables

The Stone and Colella (1996) framework suggests that a range of further organizational, individual and environmental characteristics might impact upon disability gaps. These are included in the analysis as controls. Workplace-level controls include organization size, workplace size, single independent workplace, Standard Industrial Classification major group, national ownership, workplace age, public sector, union recognition and the proportion of the workforce female, ethnic minority, aged 50 or older, part-time. Employee-level controls include Standard Occupational Classification, weekly pay, marital status, respondent age, tenure, highest qualification, part-time, temporary or fixed-term contract, union member, ethnicity, gender, and the presence of a dependent child.

Analysis procedure

To assess the paper's first research question (to evaluate the competing enabling and disabling hypotheses by exploring the relationship between the use of HPWPs and the proportion of the workforce reporting disability and disabled employee's work-related well-being), the proportion of the workforce that is disabled was first regressed onto both the five separate HPWP measures and also, in a separate regression, onto the HPWP count measure, while controlling for the workplace-level factors outlined above. Given that the dependent variable is a proportion that is naturally bounded between 0 and 1, a fractional logit model was used which, unlike Ordinary Least Squares, generates predictions within the unit interval

and is appropriate where zero and one values occur within the data (see, Papke & Wooldridge, 1996)[1].

Second, the dependent variables measuring work-related well-being were regressed onto indicators of disability and HPWP at the employee level. HPWP x disability interaction terms were then inserted into the equation to ascertain whether the effect of HPWPs on the dependent variable differed between disabled and non-disabled employees (with a positive significant interaction effect denoting a smaller disability gap in workplaces where HPWPs are used). This analysis was conducted using both the individual HPWP measures and also the HPWP count measure described above. In order to account for the multi-level structure of the data in which employee responses are nested within workplaces, multi-level mixed effects modelling incorporating both fixed and random effects was used. This enables between-establishment variance to be controlled for, thereby preventing assumptions of independent observations in multiple regression from being violated given that employees within a given workplace are not independent from each other.

Where the paper's second aim is concerned (to assess whether the extent to which HPWPs have enabling or disabling effects for disabled employees varies depending on the nature of the broader equality climate), a disability equality climate proxy measure was developed using data from the management survey concerning disability equality practices at the workplace-level. A supportive equality climate was defined as workplaces with at least three of the following five practices: recruitment and selection either reviewed or monitored by disability; promotion either reviewed or monitored by disability; pay reviewed by disability; specialist recruitment procedures in place to encourage applications from disabled people; and formal assessments have been conducted of the extent to which the workplace is accessible to disabled employees or job applicants. Where two or fewer of these practices are

in place, the equality climate was defined as non-supportive. Perhaps notable is that the use of these practices is low, with workplaces adopting on average 0.9 of these five practices. Based on the definition used here, only 9.9 percent of workplaces[2] are deemed to have a supportive disability equality climate.

In order to ascertain whether the disability equality climate influences the extent to which HPWPs have enabling or disabling effects, the sample was split depending on whether or not the equality climate is defined as supportive. The analysis described above in relation to the first research question was then repeated within each sub-sample to ascertain whether enabling effects are more likely to emerge in workplaces with supportive climates, while disabling effects are more likely to emerge in non-supportive climates.

Results

The association between HPWPs and work-related disability outcomes

The first aim of the paper is to evaluate the competing enabling and disabling hypotheses by exploring the influence of the use of HPWPs on the proportion of the workforce reporting disability at the workplace and disabled employees' work-related well-being. The first two columns of Table 1 present the workplace-level estimates of the relationship between HPWPs and the proportion of the workforce that is disabled. The second of these columns demonstrates that within the sample as a whole, the proportion of the workforce that is disabled is significantly negatively related to the HPWP count measure (lending support to the disabling effects hypothesis). However, the first column suggests that where individual HPWPs are concerned, while all the coefficients are negative, only one of these is significant (the use of IPRP).

Insert Table 1 here

The results in Table 2 present the employee-level estimates for the relationship between HPWPs and disabled employees' work-related well-being (perceptions of job satisfaction, fair treatment and anxiety-contentment). Panel A reports the results relating to the effect of individual HPWPs, while Panel B reports the results for the HPWP count measure.

The results demonstrate the existence of disability gaps, with disabled employees reporting significantly poorer outcomes in relation to their perceptions of job satisfaction, fair treatment and anxiety-contentment compared to non-disabled employees. Where the impact of HPWPs is concerned, the first, third and fifth columns in Panel A provide little evidence that individual HPWPs affect these outcome measures (with the exception of teamworking which has a consistent positive association). In terms of whether HPWPs have enabling or disabling effects for disabled employees, there is a notable lack of significance among most of the interaction terms that are added in the second, fourth and sixth columns, thus suggesting there is little difference in the relationship between HPWPs and job satisfaction, fair treatment and anxiety-contentment for disabled employees relative to their non-disabled counterparts. There is no consistent evidence, therefore, that HPWPs either increase or decrease the disability gap with regard to work-related well-being. The one notable exception to this is the positive disabled x IPRP interaction term in the anxiety-contentment equation (column 6), thus suggesting (in contrast to the above analysis of workforce composition) that the use of this practice is associated with a smaller anxiety-contentment disability gap (though it does not reduce the job satisfaction or fair treatment disability gaps).

Where the HPWP count measure is concerned, the results in Panel B suggest that there is a positive association between the HPWP count measure and anxiety-contentment, and a weak positive association (at the 10 percent level) for fair treatment. However, all of the disabled x HPWP interaction effects are insignificant, suggesting that the effect of the extent of adoption of HPWPs is no different for disabled than for non-disabled employees. The HPWP count measure therefore provides no evidence that HPWPs either reduce or increase disability gaps in work-related well-being.

Insert Table 2 here

Disability equality climate and the relationship between HPWPs and work-related disability outcomes

The second aim of the paper is to assess whether the extent to which HPWPs have enabling or disabling effects varies depending on the nature of the broader disability equality climate. Returning to Table 1, columns 3 and 4 report the relationship between HPWPs and the proportion of the workforce that is disabled in workplaces with supportive disability equality climates, while columns 5 and 6 report the relationship in those with non-supportive climates. The results in columns 3 and 4 suggest that in workplaces with supportive disability equality climates there is no relationship between either the individual HPWPs or the HPWP count measure and the proportion of the workforce that is disabled. However, columns 5 and 6 show that in workplaces with non-supportive climates, the IPRP and the HPWP count measures are both negatively associated with the proportion of the workforce that is disabled. This suggests support for the argument that the negative effects associated with HPWPs are more likely to emerge in workplaces with non-supportive disability equality climates.

The results relating to disabled people's work-related well-being are presented in Tables 3 and 4. Table 3 presents the results for supportive disability equality climates. Notable here is that while disabled people report poorer job satisfaction and anxiety-contentment in supportive climates than do the non-disabled, they do not report lower levels of fair treatment. Where the relationship between individual HPWPs and the outcome variables are concerned, columns 1, 3 and 5 in Panel A suggests a positive relationship for teamworking (though this is weak where fair treatment is concerned), but a negative relationship (with regard to job satisfaction and anxiety-contentment) for functional flexibility. However, the interaction terms in columns 2, 4 and 6 are all insignificant, suggesting that individual HPWPs do not have a differential effect on the outcome measures for disabled employees compared to their non-disabled counterparts. The evidence suggests that, overall, HPWPs neither have an enabling or disabling effect on disabled workers' well-being in workplaces with a supportive equality climate. This also holds in the analysis in Panel B using the HPWP count measure as opposed to the individual HPWP measures.

Insert Table 3 here

Insert Table 4 here

Table 4 presents the results for well-being in workplaces with a non-supportive disability equality climate. Columns 1, 3 and 5 in Panel A suggest that disabled employees report lower perceived job satisfaction, fair treatment and anxiety-contentment than do the non-disabled. They also suggest that HPWPs are not positively related with the outcome measures with the exception that teamworking is positively associated with perceptions of fair treatment. However, where the interaction effects in columns 2, 4 and 6 are concerned,

these are almost universally statistically insignificant. Hence, there is no consistent evidence to support the argument that HPWPs will increase disability gaps in well-being in workplaces with non-supportive disability equality climates. Indeed, to the contrary, where the disability x IPRP interaction term for anxiety-contentment is concerned, this is (against expectations) positively significant at 10 per cent, suggesting that the use of IPRP closes the anxiety-contentment disability gap. The finding that HPWPs do not have disabling effects in non-supportive environments is also supported in the analysis in Panel B with regard to the HPWP count measure, within which the interaction effects are all insignificant.

Discussion and Conclusions

This paper has sought to build on Stone and Colella's (1996) framework identifying the factors affecting the treatment of disabled people in the workplace by developing theoretically and testing empirically the organizational characteristics element of the framework. In particular, it developed competing enabling and disabling effects hypotheses concerning the potential influence of HPWPs on work-related disability disadvantage. It then drew on nationally representative British data to test these hypotheses empirically by identifying whether the use of HPWPs is associated with the proportion of the workforce that is disabled and with disability gaps with regard to work-related well-being. It then assessed whether the extent to which HPWPs have enabling or disabling effects varies depending on the nature of the broader equality climate.

In terms of the proportion of the workforce that is disabled, this was found in the full sample to be negatively associated with the HPWP count measure, thus suggesting (in support of the disabling effects hypothesis) that proportionately fewer disabled people are employed in workplaces with higher usage of HPWPs. It was notable, however, that only one

individual HPWP (IPRP) was negatively associated with this outcome, suggesting that (with the exception of IPRP) individual HPWPs used in isolation may not have negative effects. As discussed above, in the strategic HRM literature it is widely argued that HPWP-performance effects are more likely to emerge where a number of HPWPs are introduced together in an integrated, mutually reinforcing manner (Becker & Huselid, 1998; Guest, 2011). The same argument may well hold concerning the effects of HPWPs on the proportion of the workforce that is disabled.

In terms of work-related well-being, consistent with previous research (Fevre et al., 2013; Jones & Wass, 2012; Schur et al., 2009), the analysis provided evidence of significant disability disadvantage, with disabled employees reporting, on average, poorer outcomes than their non-disabled counterparts with regard to levels of perceived job satisfaction, fair treatment and anxiety-contentment.

However, there was no evidence that HPWPs increase these disability gaps (even in non-supportive disability equality climates), hence there was no support for the disabling effects hypothesis where these outcomes are concerned. To the contrary, the use of one HPWP (IPRP) was associated with a smaller anxiety-contentment disability gap. There was also evidence in the full sample of a positive overall relationship between the HPWP count measure and anxiety-contentment, and a weak positive overall relationship with fair treatment. Given that the strength of this relationship does not vary between disabled and non-disabled employees (as demonstrated by the insignificant interaction terms within the analysis), this suggests that disabled employees in workplaces with more HPWPs are likely to be better off with regard to these outcomes than are their counterparts in workplaces with fewer HPWPs. As such, while HPWPs (with the exception of IPRP) may not have any effect

in terms of closing disability gaps relative to the non-disabled, they may nevertheless have some potentially positive effects for disabled (as well as non-disabled) employees.

The fact that one particular HPWP (IPRP) stands out as being negatively related to the proportion of the workforce that is disabled while at the at the same time being associated with a narrower disability gap in anxiety-contentment is particularly notable. In explaining this apparently contradictory finding, the negative relationship between IPRP and the proportion of the workforce that is disabled arguably supports the disabling effects hypothesis that disabled employees are unlikely to select into (or will select out of) workplaces with IPRP. This may reflect assessment criteria that emphasise unobserved productivity effects associated with disability (Jones, Latreille, & Sloane, 2006), which will result in disabled employees being particularly disadvantaged. However, such selection effects may also explain why IPRP simultaneously reduces the anxiety-contentment gap, since the disabled employees that remain in (or join) organizations using IPRP are likely to be those with productivity characteristics similar to those of non-disabled individuals. For these employees, IPRP may have enabling effects in terms of reducing the anxiety-contentment gap by increasing the likelihood that they will be fairly rewarded, given that rewards will be allocated on the basis of actual achievement rather than on the basis of negative stereotype (Stone & Colella, 1996:374). This argument must be treated with caution, however, given that while the use of IPRP is associated with a smaller anxiety-contentment disability gap, it is not associated with smaller job satisfaction or fair treatment disability gaps.

Nevertheless, this selection effect argument may also be consistent with the broader finding that while proportionately fewer disabled people tend to be employed in workplaces making greater use of HPWPs, there is no evidence that HPWPs have disabling effects in relation to work-related well-being. This suggests that while disabled people are less likely to

be able to get into or remain in work in workplaces making greater use of HPWPs, those that are successful in doing so do not have the sorts of impairment-related restrictions that might be particularly limiting within such environments. While it is only possible to speculate on this selection effect argument, further exploration of this interpretation of the results might provide a fruitful avenue for future research seeking to understand the effects of HPWPs on disability-related outcomes.

One further notable feature of the findings relates to the effects of the disability equality climate. The results indicate that while the nature of the disability equality climate does not affect whether HPWPs have enabling or disabling effects with regard to work-related well-being, it does affect the relationship between HPWPs and the proportion of the workforce that is disabled, with there being a negative association between the greater use of HPWPs and the proportion of the workforce that is disabled in workplaces with non-supportive climates but not in workplaces with supportive climates. In addition, disabled people do not report poorer perceptions of fair treatment than the non-disabled in workplaces with supportive climates. These findings support research elsewhere which highlights the importance of corporate culture and supportive disability equality practices (Schur et al., 2009, 2014; Stone & Colella, 1996). In the analysis presented here, equality climate is proxied with reference to the adoption of disability equality practices. This in turn suggests that the adoption of a substantive EO policy may have the scope to improve at least some outcomes for disabled employees, as has been found to be the case for ethnic minorities (Noon & Hoque, 2001), as well as in prior research on disabled people (Forth & Rincon-Aznar, 2008; Jones & Latreille, 2010). It may have a role to play in ensuring that HPWPs do not have deleterious effects on disabled people's recruitment and retention. In arguing this point, however, one must keep in mind that very few (only 9.9 percent) of workplaces were

categorised as having a supportive disability equality climate (defined as having three or more of the five disability equality practices identified in WERS). Hence, while such climates may have positive effects, they would appear to exist in very few workplaces.

Finally, it is necessary to highlight several caveats and directions for future research concerning the results reported here. First, the WERS employee survey includes only a single general question on disability. Future research is needed to explore whether the relationship between HPWPs and disability-related outcomes at work varies by different types and severities of impairment. Second, as discussed above, the analysis is unable to shed light on the exact mechanisms that result in a lower proportion of disabled employees in workplaces with making more extensive use of HPWPs. Future research may therefore seek to explore the precise routes by which HPWPs influence the recruitment and retention of disabled people. Third, future analysis might focus on why IPRP stands out has having particular effects on the proportion of disabled people employed and on perceptions of anxiety-contentment. Fourth, while the analysis here explores the impact of HPWPs on the proportion of the workforce that is disabled and on perceptions of work-related well-being (job satisfaction, fair treatment and anxiety-contentment), research is also needed on other indicators such as the rates of dismissal, turnover, grievances and occupational health. Should future research be conducted that addresses these issues, this will have the potential to deepen further our understanding of the consequences of HPWPs for disabled people.

Notes

1. The results are qualitatively similar irrespective of whether a fractional logit or OLS is used.

2. In terms of the unweighted sample size, 437 out of 1629 workplaces are defined as having a supportive disability equality environment. The weighted percentage of workplaces is lower than this because WERS oversamples large workplaces, and larger workplaces are more likely to have the sorts of equality practices used to proxy for a supportive disability equality climate.

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Table 1: Relationship between HPWPs and the proportion of workforce that is disabled

	Proportion of workforce disabled (full sample)		Proportion of workforce disabled (supportive disability equality climate)		Proportion of workforce disabled (non-supportive disability equality climate)	
Competency tests	-0.093		0.167		-0.069	
	(0.224)		(0.235)		(0.258)	
Teamworking	-0.021		-0.175		-0.092	
	(0.220)		(0.195		(0.258)	
Functional flexibility	-0.339		-0.203		-0.265	
	(0.239)		(0.293)		(0.251)	
Performance appraisal	-0.301		0.758		-0.420	
	(0.277)		(0.557)		(0.293)	
IPRP	-0.622***		0.081		-0.626**	
	(0.233)		(0.252)		(0.250)	
HPWP count measure		-0.279***		0.047		-0.318***
		(0.099)		(0.112)		(0.109)
N	1629	1629	437	437	1191	1191

Notes: Coefficients given, standard errors in brackets. Fractional logit model.
*** significant at 1 percent ** significant at 5 percent
Controls for: organization size; workplace size; single independent workplace; SIC major group; national ownership; workplace age; public sector; union recognition; proportion of workforce female, ethnic minority and aged 50 or over; proportion of workforce part-time; proportion of workforce in each SOC (one-digit).

Table 2: Relationship between disability, HPWPs and well-being (full sample)

	Job satisfaction		Fair treatment		Anxiety-contentment	
Panel A						
Disabled	-1.666***	-1.977***	-0.200***	-0.235**	-2.084***	-2.002***
	(0.174)	(0.527)	(0.036)	(0.101)	(0.157)	(0.445)
Competency tests	-0.003	0.019	0.030	0.032	0.102	0.116
	(0.140)	(0.142)	(0.028)	(0.029)	(0.115)	(0.119)
Teamworking	0.286**	0.253*	0.071***	0.068***	0.313***	0.284**
	(0.132)	(0.134)	(0.026)	(0.026)	(0.109)	(0.111)
Functional flexibility	-0.118	-0.123	-0.033	-0.050	-0.256	-0.243
	(0.191)	(0.193)	(0.038)	(0.038)	(0.160)	(0.167)
Performance appraisal	0.190	0.168	-0.031	-0.030	0.202	0.237
	(0.200)	(0.204)	(0.036)	(0.038)	(0.163)	(0.166)
IPRP	-0.065	-0.083	0.034	0.033	0.073	0.014
	(0.142)	(0.146)	(0.028)	(0.028)	(0.119)	(0.122)
Disabled x Competency tests		-0.267		-0.024		-0.208
		(0.362)		(0.072)		(0.325)
Disabled x Teamworking		0.371		0.028		0.309
		(0.342)		(0.069)		(0.309)
Disabled x Functional flexibility		0.025		0.195*		-0.195
		(0.512)		(0.104)		(0.415)
Disabled x Performance appraisal		0.257		-0.001		-0.392
		(0.516)		(0.097)		(0.461)
Disabled x IPRP		0.232		-0.023		0.711**
		(0.371)		(0.073)		(0.339)
Level 1 intercept	2.464	2.461	0.089	0.089	1.274	1.276
Level 2 intercept	27.326	27.321	1.014	1.013	23.067	23.055
N	13761	13761	12301	12301	14247	14247
Panel B						
Disabled	-1.667***	-1.988***	-0.201***	-0.266***	-2.086***	-2.360***
	(0.175)	(0.439)	(0.036)	(0.088)	(0.158)	(0.371)
HPWP count measure	0.071	0.059	0.023*	0.020	0.118**	0.108**
	(0.064)	(0.064)	(0.012)	(0.013)	(0.050)	(0.051)
Disabled x HPWP		0.133		0.027		0.113
		(0.161)		(0.032)		(0.134)
Level 1 intercept	2.490	2.490	0.091	0.091	1.299	1.300
Level 2 intercept	27.322	27.319	1.014	1.013	23.067	23.065
N	13761	13761	12301	12301	14247	14247

Notes: Coefficients given, standard errors in brackets. Mixed effects multi-level model.

*** significant at 1 percent ** significant at 5 percent * significant at 10 percent.

Workplace characteristics controlled for: organization size; workplace size; single independent workplace; SIC major group; national ownership; workplace age; public sector; union recognition; proportion of workforce female, ethnic minority and aged 50 or over. Individual characteristics controlled for: SOC major group; pay; marital status; age; tenure; highest qualification; part-time; temporary/ fixed term contract; union membership; ethnicity; gender; dependent children.

Table 3: Relationship between disability, HPWPs and well-being (supportive disability equality climate)

	Job satisfaction		Fair treatment		Anxiety-contentment	
Panel A						
Disabled	-1.836***	-2.211*	-0.058	-0.287	-2.027***	-2.024**
	(0.287)	(1.312)	(0.060)	(0.242)	(0.263)	(1.003)
Competency tests	-0.003	0.066	0.067	0.071	0.153	0.201
	(0.229)	(0.231)	(0.049)	(0.051)	(0.188)	(0.201)
Teamworking	0.438**	0.389*	0.075*	0.075*	0.648***	0.608***
	(0.220)	(0.220)	(0.042)	(0.044)	(0.169)	(0.175)
Functional flexibility	-0.868***	-0.834**	-0.033	-0.061	-0.994***	-0.910***
	(0.336)	(0.334)	(0.062)	(0.060)	(0.236)	(0.251)
Performance appraisal	-0.112	0.030	-0.020	-0.050	0.094	0.085
	(0.479)	(0.476)	(0.080)	(0.078)	(0.318)	(0.339)
IPRP	-0.151	-0.174	0.044	0.041	0.118	0.060
	(0.220)	(0.224)	(0.046)	(0.049)	(0.175)	(0.179)
Disabled x Competency tests		-0.671		-0.025		-0.544
		(0.651)		(0.137)		(0.579)
Disabled x Teamworking		0.498		-0.016		0.449
		(0.568)		(0.117)		(0.518)
Disabled x Functional flexibility		-0.423		0.285		-0.880
		(0.846)		(0.194)		(0.708)
Disabled x Performance appraisal		0.578		0.232		0.025
		(1.207)		(0.212)		(0.954)
Disabled x IPRP		0.319		0.018		0.647
		(0.580)		(0.120)		(0.542)
Level 1 intercept	1.296	1.292	0.046	0.046	0.101	0.116
Level 2 intercept	27.016	27.001	1.004	1.002	23.913	23.876
N	4246	4246	3683	3683	4380	4380
Panel B						
Disabled	-1.844***	-0.206**	-0.057	-0.188	-2.029***	-2.245***
	(0.288)	(0.914)	(0.060)	(0.186)	(0.264)	(0.769)
HPWP count measure	-0.000	-0.009	0.044**	0.038*	0.160*	0.151*
	(0.104)	(0.101)	(0.021)	(0.022)	(0.089)	(0.090)
Disabled x HPWP		0.079		0.049		0.079
		(0.307)		(0.065)		(0.260)
Level 1 intercept	1.457	1.459	0.048	0.048	0.292	0.293
Level 2 intercept	26.984	26.982	1.003	1.003	23.895	23.893
N	4246	4246	3683	3683	4380	4380

Notes: Coefficients given, standard errors in brackets. Mixed effects multi-level model.
*** significant at 1 percent ** significant at 5 percent * significant at 10 percent.
Controls as in table 2.

Table 4: Relationship between disability, HPWPs and well-being (non-supportive disability equality climate)

	Job satisfaction		Fair treatment		Anxiety-contentment	
Panel A						
Disabled	-1.582***	-2.031***	-0.277***	-0.198*	-2.141***	-1.995***
	(0.222)	(0.583)	(0.044)	(0.114)	(0.196)	(0.496)
Competency tests	-0.048	-0.049	0.018	0.023	0.010	0.015
	(0.168)	(0.172)	(0.034)	(0.034)	(0.140)	(0.143)
Teamworking	0.242	0.214	0.078**	0.076**	0.145	0.128
	(0.160)	(0.166)	(0.032)	(0.033)	(0.137)	(0.141)
Functional flexibility	0.015	0.000	-0.047	-0.062	-0.105	-0.125
	(0.230)	(0.233)	(0.047)	(0.048)	(0.200)	(0.206)
Performance	0.192	0.171	-0.023	-0.012	0.238	0.286
appraisal	(0.221)	(0.228)	(0.042)	(0.043)	(0.185)	(0.189)
IPRP	-0.044	-0.065	0.019	0.016	0.037	-0.023
	(0.178)	(0.183)	(0.034)	(0.035)	(0.152)	(0.157)
Disabled x		-0.017		-0.060		-0.096
Competency tests		(0.443)		(0.087)		(0.399)
Disabled x		0.321		0.020		0.157
Teamworking		(0.439)		(0.086)		(0.390)
Disabled x		0.163		0.167		0.195
Functional flexibility		(0.646)		(0.117)		(0.513)
Disabled x		0.262		-0.120		-0.578
Performance		(0.582)		(0.111)		(0.531)
appraisal						
Disabled x IPRP		0.270		0.031		0.764*
		(0.478)		(0.090)		(0.435)
Level 1 intercept	2.575	2.575	0.098	0.098	1.590	1.591
Level 2 intercept	27.345	27.339	1.010	1.010	22.543	22.530
N	9515	9515	8618	8618	9867	9867
Panel B						
Disabled	-1.581***	-2.040***	-0.278***	-0.261***	-2.142***	-2.354***
	(0.222)	(0.511)	(0.044)	(0.101)	(0.196)	(0.428)
HPWP count	0.074	0.057	0.015	0.016	0.076	0.068
measure	(0.077)	(0.077)	(0.015)	(0.015)	(0.060)	(0.062)
Disabled x HPWP		0.205		-0.007		0.095
		(0.198)		(0.039)		(0.162)
Level 1 intercept	2.590	2.592	0.099	0.099	1.596	1.597
Level 2 intercept	27.344	27.338	1.010	1.010	22.545	22.543
N	9515	9515	8618	8618	9867	9867

Notes: Coefficients given, standard errors in brackets. Mixed effects multi-level model.
*** significant at 1 percent ** significant at 5 percent * significant at 10 percent.
Controls as in table 2.

Appendix Table: Individual HPWP variable definitions and means

HPWP variable	Definition	Workplace mean
Competency testing	A performance/ competency test is conducted in filling largest occupational group (LOG) vacancies	0.412
Teamworking	At least 60% of the LOG at the workplace are working in formally designated teams, in which team members depend on each other to do their job and team members jointly decide how the work is to be done	0.340
Functional flexibility	At least 60% of the LOG actually do jobs other than their own	0.217
Developmental performance appraisal	At least 60% of non-managerial employees at the workplace have their performance appraised at least annually, and the appraisal is linked to training	0.643
Individual performance-related pay	At least 60% of non-manual employees are paid by results, receive merit pay or their pay is linked to the outcome of their appraisal	0.419