

The Effect of Trade Unions on High Performance Work Systems (HPWS):

Does industrial Relations Climate Matter?

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Abstract

Drawing on the concept of organisational social context and original survey of trade union workplace representatives in England this paper examined the impact of trade unions on the adoption of High Performance Work Systems (HPWS). The present study has demonstrated that strong trade unions facilitate the adoption of HPWS whereas trade union militancy negatively affects HPWS. In lines with the social context perspective we have constructed the moderated mediation model wherein the positive industrial relations climate fully mediated the conflicting impacts of union power and trade union militancy and turned them into positive determinants of HPWS. We further contributed to the existing knowledge by demonstrating that the mediation effect of the positive industrial relations climate is contingent on the repercussions of the economic recession such that the negative consequences of economic downturns reduce the propensity of industrial relations climate to facilitate the adoption of HPWS.

Introduction

Whereas the bulk of mainstream Human Resource Management literature (hereafter - HRM) has focused on the pragmatic aspects of High Performance Work Systems (hereafter - HPWS), i.e., whether such innovative HR practices produce outcomes accruable to employers and employees, the impacts of trade unions and industrial relations on the adoption of HPWS have received less attention (although see Cook, 2012; Gill and Meyer, 2013; Bryson et al, 2005; Moses, 2014). Where unions have been considered, two, quite distinct viewpoints have emerged. On the one hand, there are studies which assume a negative association between trade unions and HPWS, built on the premise of a conventional neoclassical economic interpretation of a detrimental effect of trade unions on the organisational productivity (see Hirsch, 2004). On the other hand, an emerging empirical evidence

is suggestive of a more positive role for unions in organisational outcomes. For instance, where managers acknowledge trade unions as legitimate employee representatives and reciprocate union intentions to resolve labour-management tensions in a constructive and supportive manner, organisational performance might be improved (see Bryson et al., 2005; Deery et al., 2013). As such, the likelihood of organisations adopting and sustaining HPWS may increase in the presence of unions (Huselid, 1995, Vernon and Brewster, 2013; Gill and Meyer, 2013).

The contribution of this study is twofold. First, we fill a discernible empirical void in employment relations research and examine the impacts of two basic characteristics of trade unions on the adoption of HPWS: trade union power and union militancy. We argue that strong trade unions are more likely to be taken seriously by employers, resulting in more involvement in the process of development and adoption of HPWS (Geary, 2008). At the same time, adversarial approaches to industrial relations are likely to reduce the likelihood for an organisation to adopt HPWS (Hirsch, 2004). Second, the present study draws on the social context perspective as a plausible explanatory tool for the aforementioned relationships (Ferris et al., 1998; Ferris, 1999). From our knowledge, it is the first attempt to systematically, both theoretically and empirically, unpack the complex relationships between trade unions and HPWS. To this end, industrial relations climate was introduced as an element of the internal dimension of the organisational environment, i.e. *immediate milieu*, and the economic recession was operationalised as the external dimension of organisational social environment (*milieu social*). Thereafter, a moderated mediation model was constructed such that the positive industrial relations climate mediates the relationships between trade union power, union militancy and the adoption of

HPWS. This implies that the positive climate of industrial relations can act as an enabling mechanism for HPWS through which trade union outcomes contribute positively towards the adoption of HPWS (Ferris et al, 1999; Cloud-Williams, 2007). We further contend that challenges posed by the external environment, especially in light of a dire economic recession, are of high importance for the investigation of the relationship between trade unions and HPWS. It is therefore expected that the consequences of the most recent recession might moderate the mediation effect of industrial relations climate such that the deeper the effect of the recession the lower the propensity of industrial relations climate to facilitate the adoption of HPWS. Thus, the findings of this study underline the importance of a contextual background for the adoption of HPWS and cast light on the relationship between trade unions and HPWS.

In methodological terms, this paper draws on the original survey of trade union workplace representative. The survey is representative of all major trade unions in the UK and all regional branches of Trades Union Congress in England, the largest trade union association in the United Kingdom. The remainder of the paper is structured as follows. It is set off with the introduction of the theoretical background and justification of the hypotheses of the current study. Thereafter, the data, measurements and particular research methods are introduced alongside the findings derived from structural equation modelling and moderated mediation analysis. The paper concludes with theoretical and practical implications of the observed relationships.

Theoretical background

High-performance work systems and trade unions

A large and growing body of the mainstream HRM literature has been concerned with HPWS as a set of innovative HRM practices capable of producing

positive effects on organisational performance. Extant literature portrays HPWS as a cohesion of the following essential dimensions: selectivity with regards to the suitability of candidates for the organisational goals and objectives; information sharing and employee participation in the decision-making process; systematic training aimed at enhancing job-related skills and thereby employee performance; and, finally, the system of incentives designed to foster employee motivation and alignment with the organisation (Guest, 2011; Applebaum et al, 2000; Ichniowski et al, 1997; Horgan and Muhlau, 2006). Often labelled as innovative HRM practices, HPWS have been extensively linked to organisational benefits expressed through higher levels of labour productivity, organisational competitive advantages, and profitability (Delery, 1998; Huselid, 1995; Wood and de Menezes, 2011; Wood et al, 2012). Within the HPWS framework each of the foregoing dimensions is thought to contribute positively towards organisational outcomes by creating a collaborative and supportive atmosphere within the organisations and therefore increasing employee intrinsic motivation for work and their desire to conduct job roles in a more efficient and productive way (Boxall and Macky, 2014; Ramsay et al, 2000; Wood, 1999).

Albeit over the years a rich empirical evidence base has been collected concerning the effects of HPWS on the organisational, and more recently on employee-level outcomes (Wood et al, 2012; Applebaum et al, 2000; Kalmi and Kauhanen, 2008), our knowledge on the antecedents of HPWS is still fragmented. In particular, there is an insufficient scrutiny of the possible effects of trade unions on the development and implementation of HPWS (Cook, 2012; Gill and Meyer, 2013; Bryson et al, 2005; Moses, 2014). Mainstream HRM literature, with only few exceptions (Gill and Meyer, 2013; Bryson et al, 2005), has largely negated the relevance of the relationship between trade unions and HPWS due to the

substantial union decline and an ongoing marginalisation of collective employee representation. However, a relative stabilisation of union membership density alongside minor improvements in trade union power have fuelled a research interest towards trade unions as workplace intermediaries and hence active players within the HPWS framework (Gill and Meyer, 2013). Indeed, union position in the public sector remains strong with the membership density more than 50% and a considerably high level of employee coverage with collective agreements (Department for Business, Innovation and Skills, 2014). More recently, promising trends emerged in trade union representation of employees in the private sector organisations where trade unions actively expand their influence to the new sectors and more frequently participate in deliberations with management.

In spite of a growing attention to trade unions, the existing evidence base as to whether trade unions facilitate the adoption of HPWS is scarce and rather equivocal. Much of the current debate centres on the neoclassical arguments about a detrimental effect of trade unions on organisational performance and outcomes (Freeman and Medoff, 1984). Along these lines, scholars tend to make *a priori* assumptions that unionised workplaces are less likely to adopt HPWS (Bryson et al, 2005; Bryson et al, 2006). This is not least due to a widely assumed hostility of union representatives towards innovative HR practices as a type of managerial deception aimed to exert a greater control over employees and undermine trade union power (Moses, 2014). On the contrary, emerging empirical evidence suggests a more complex relationship between trade unions and organisation HRM practices. The influence trade unions might have on the adoption of HPWS was shown to depend on various internal and external factors, but more importantly on trade union characteristics and preferred style of union-management relationships. One of such vital characteristics is the construct of

trade union power, or in other words the ability of trade unions to exert a substantial influence over the processes occurring within the organisation (Chacko and Greer, 1982; Kochan, 2004). Such trade unions derive their legitimacy from an extensive employee support who might give trade unions a *carte blanche* to negotiate with managers on their behalf. In the respective settings, employers tend to acknowledge trade union leadership and opt for collaborative relationships with union representatives instead of attempting to offset trade union power and fuel workplace conflicts (Heery and Simms, 2010). Furthermore, powerful trade unions trusted by their membership can be seen by managers as a useful communication channel with employees through which HPWS may be effectively implemented and corrected whereas necessary (Gill and Meyer, 2013). Hence, if trade unions' position in the organisation is strong, one might expect a collaborative relationship between employers and trade unions and active participation of trade unions in the development of HPWS.

The foregoing scenario is not explicit. Trade unions may as well rely on a more adversarial perspective on industrial relations and thereby undertake their actions on the premise of employee readiness for collective actions as a means of achieving union goals and resolving disputes with managers. As such, the likelihood and desire of trade unions to participate in the adoption of HPWS tends to be extremely low. Many innovative HR practices, for instance performance related pay, are more likely to undermine the bonds between trade unions and their membership than maintain the ground for trade union militancy. More importantly, from the employer perspective the payoffs of implementing HPWS in an adversarial environment are likely to be offset by the risks of employee and trade union resistance. Hence, union is deemed to produce a negative impact on the adoption of HPWS.

Hypothesis 1a: Trade union power is positively associated with the adoption of HPWS.

Hypothesis 1b: Trade union militancy is negatively associated with the adoption of HPWS.

The social context of HPWS: the mediating role of industrial relations climate and moderation effect of the economic recession

This study draws on the social context perspective according to which organisational practices and outcomes are dependent upon peculiar aspects of the social environment in which organisational members conduct their everyday tasks and interact with each other (Ferris, 1999; Gollan and Perkins, 2010; Gong et al., 2010). This becomes vitally important in the context of industrial relations as atmosphere of union management negotiations is deemed to be decisive for the outcomes of such interactions (Wilkinson et al., 2014; Dundon et al., 2014). Social context theorists ordinarily distinguish two levels of social environment: internal, or so-called *immediate milieu* which embodies the environment created within the organisations and thereby directly related to organisational members; and external, or so-called *social milieu* imposed by social structures outside the organisational boundaries (Cloud-Williams, 2007; Bell and Lee, 2006). Within the context of the current study we utilised industrial relations climate as a pivotal element of the internal environment and the economic recession as a critically important constituent of the external environment. Thereafter, we have constructed the moderated mediation model wherein the former (industrial relations climate) mediates the impacts of trade union power and union militancy on the adoption of HPWS and the latter (economic recession) moderates this indirect relationship.

The rationale for the foregoing assumptions is relatively straightforward. Industrial relations climate, as a subset of organisational climate that signifies the

nature of the relationships between organisational members and underpins the quality of union-management interaction, holds a great promise as a potential mediator (Blyton et al. 1987; Dastmalchian et al. 1989; Holland et al, 2012). It does not come as a surprise that cooperative and supportive industrial relations climate was extensively linked to the organisational outcomes accruable to all parties to industrial relations (Kaufman, 2015; Wilkinson et al, 2014). Along these lines, positive trade union-employer relationships may facilitate the adoption of HPWS as both parties, trade unions and managers, are deemed to willingly assent to HPWS with an inherent desire to derive their respective benefits from such practices (Gill and Meyer, 2013; Bélanger and Edwards 2007; Boselie et al, 2005). Given the classic mediation model (Baron and Kenny, 1986; Preacher and Hayes, 2004; Tingley et al, 2014), assuming that industrial relations climate mediates the relationships between trade union outcomes and the adoption of HPWS leads to the following unequivocal suggestions. First, trade union power and union militancy should have a significant association with the mediator variable, i.e. industrial relations climate. Second, industrial relations climate should affect the outcome variable, namely the adoption of HPWS. Hereafter, the inclusion of industrial relations climate in the theoretical model as a predictor may partially mediate the direct effects of independent variables or fully absorb the effects of union power and militancy on the adoption of HPWS (a so-called full mediation effect). There is theoretical evidence for these conditions to be simultaneously satisfied in our study in that strong trade unions may engender a positive industrial relations climate through a higher probability of a genuine collaboration between employers and trade unions whereby the grave forms of tension and conflict between labour and management are reduced to minimum (Pyman et al. 2010; Bryson et al, 2005; Bryson et al, 2006). Hence, trade union empowerment may

consistently promote the positive industrial relations climate (Deery et al. 1994; Dastmalchian et al. 1989). On the contrary, union militancy might spur the deterioration of the relationships between employers and trade unions. The reliance of trade unions on industrial actions as a means of union advancement in the workplace leads to the rise of the adversarial model of industrial relations where trade unions and managers openly compete with each other instead of cooperating towards mutual gains (Freeman and Medoff, 1984).

Whether the effects of trade union power and union militancy are thought to be conflicting, the impact of industrial relations climate on the adoption of HPWS is rather unequivocal. Indeed, industrial relations climate holds great promise of being a driving motive for the adoption of HPWS (Redman and Snape, 2006; Guest, 2011). A number of studies pointed to the possibility that positive industrial relations climate may create a fertile environment for organisational members to conduct their roles in a mostly effective manner (Boxall and Macky, 2014; Ramsay et al., 2000). In the workplaces where trade union-management deliberations are conducted in the atmosphere of mutual trust and respect, the risks of adopting HPWS are thought to be insufficient. In such environment, changes in work design, pay and rewards and health and safety are jointly formulated by trade unions and employers which in turn helps improve employees' level of acceptance of organisational and technological changes (Rogg, 2001). In other words, positive industrial relations climate, unlike the adversarial models of industrial relations, may reconcile contradictions between trade unions and management and facilitate the adoption of HPWS.

In light of the foregoing arguments, we might expect the mediation effect of the positive industrial relations climate in the relationship between trade union power, union militancy, and the adoption of HPWS.

Hypothesis 2a. Trade union power is positively associated with industrial relations climate (the climate of union management relationships).

Hypothesis 2b: Trade union militancy negatively affects industrial relations climate (the climate of union management relationships).

Hypothesis 3: Industrial relations climate fully mediates the effects of trade union power and union militancy on the adoption of HPWS.

In lines with the social context perspective we have suggested the moderation effect of the economic recession in the aforementioned mediated relationships. Such assumption rests on the aggravation of the relationships between organisational members in the periods of economic downturns (Gollan and Perkins, 2010; Gong et al., 2010). Whilst dire economic recession is in play, contracting wages and fringe benefits alongside organisational restructuring and layoffs significantly increase the probability of labour unrest reciprocated by managers through further reductions of employee voice. Economic downturns, therefore, may fuel tensions between trade unions and managers. Subsequently, the benefits from the adoption of HPWS become blurred. Thus, in the atmosphere of growing market competition, reduced state funding in the public sector and incremental financial pressures on the organisations the elements of HPWS may be sacrificed even in light of the positive industrial relations climate.

Hypothesis 4. The consequences of the economic recession moderate the indirect relationship of union power, union militancy and the adoption of HPWS through the positive industrial relations climate such that the negative outcomes of the recession reduce the propensity of industrial relations climate to facilitate the adoption of HPWS.

The conceptual model of the current study is depicted in Figure 1 and captures so-called total effects (of trade union power and union militancy on the

adoption of HPWS) as well as the moderated mediation effect involving industrial relations climate and the economic recession.

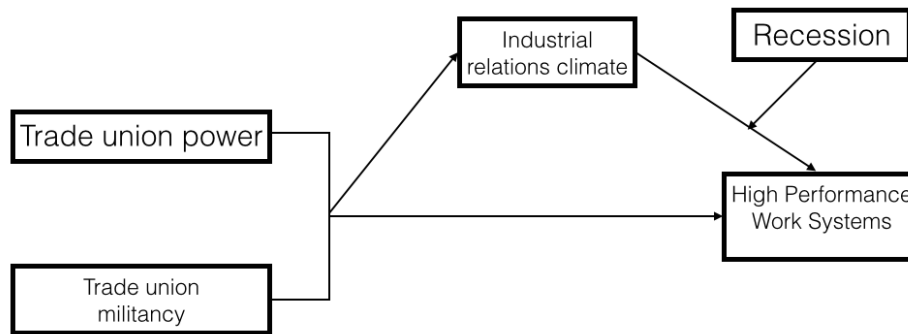


Figure 1 Conceptual model

Data and methods

To test the theoretical model developed for the purpose of this study an original survey of union representatives in the UK was conducted in April-December 2014. The survey was conducted in England. It is representative of trade union workplace branches covering all regions as well as all major trade unions affiliated with the Trades Union Congress (TUC). The survey was administered with the assistance of the Qualtrics platform, a link to the questionnaire was e-mailed to all TUC regional centres in England: North, North West, Midlands, Yorkshire and Humber, South West, London and South East. The regional TUC offices have disseminated the link to the survey across all union branches in the respective regions. The distribution of responses was not equal with 71.3 per cent of responses coming from the North of England (combined North, North West and Yorkshire and Humber). Albeit such skewness may be considered as a crucial limitation that precluded us from claiming a nationally representative scope of the survey, it is to an extent reflective of an actual distribution of trade union membership in the UK (Department for Business, Innovation and Skills, 2014). We ensured that other vital parameters such as sectoral and industry scope and trade union membership density are consistent with the national statistics on trade unions. The results were

affirmative. Similarly to the national figures our survey was composed of such sectors of economy as public services, manufacturing, energy and construction, retailing and transport, and private services. Public services constituted the largest part of the sample (64 per cent) followed by manufacturing (12.8 per cent) and other sectors. Twenty-three trade unions affiliated with the TUC participated in this study with the majority of responses coming from such trade unions as UNISON, Unite, GMB, PCS, NUT and UCU. It did not come as a surprise that the majority of union branches were located in large organisations (250 and more employees). Likewise, due to the prevalence of public sector and general unions in the sample (as it is in the union structure at the national level) an average membership density figure was relatively high: 39.9 per cent of the sample was formed of trade unions with the membership density between 20-49 per cent and 23.7 per cent of the sample of union branches with the membership density between 50-75 per cent. In terms of membership structure, 30.3 per cent of union branches in the sample preserved their membership at the same level for the last five years whereas 41.2 per cent of trade unions managed to increase their membership density. An average proportion of females in union membership is 49 per cent.

Ultimately, 400 complete responses were collected during this study which is considered to be a good number of responses for an online survey design. Furthermore, such sample is considered to be adequate for the purpose of structural equation modelling (Bagozzi and Yi, 1988). We have not applied missing values imputation techniques as all missing values in the dataset are system missing values, their overall proportion was less than 5 per cent of the sample.

Measurements

All study variables were latent and operationalised as multi-item Likert types scales where each manifest variable was measured on a 7-point scale such that '1'

signified strong agreement with a particular statement and '7' - strong disagreement. All latent variables, with the exception of the economic recession, were operationalised as reflective scales formed of one dimension. The recession latent variable was operationalised as a formative scale composed of two dimensions which signified the impact of the recession on trade unions and organisations respectively. The vast majority of scales was borrowed from prior research and amended in accordance with the context of the current study whereas needed. In all, the dependent and independent variables were operationalised as follows.

The measurement of *High Performance Work Systems (HPWS)* was adopted from Zhang and Li (2009) and Sun et al (2007) multi-item scales. The scales are deemed appropriate for the purpose of this study, as they are composed of unequivocal items that can be clearly construed by union representatives as the elements of HPWS. Minor amendments to the scales were implemented so as to emphasise pay and non-pay related aspects of HPWS. It has resulted in the adoption of 8-items scale that encapsulated all facets of HPWS.

The independent variables were operationalised as follows. The measurement of trade *union power* was derived from a classic three-item scale and reflected union representatives self-perception of the extent to which trade unions can make a difference in the workplace (Chacko and Greer, 1982). The *union militancy* scale was formed of two items each of which reflected the extent to which trade unions rely upon the collective mobilisation of its members and industrial actions as a means of union advancement.

The mediator variable, the *climate of union-management relationships*, was composed of five items adopted from the construct of industrial relations climate pioneered by Dastmaltchian and colleagues (Dastmaltchian et al, 1989).

Finally, the measurement of the economic recession was developed on the basis of a similar construct utilised in the 2011 Workplace Employment Relations Study (the 2011 WERS). We changed the 2011 WERS measurements into Likert-type items and added items that captured the impact of the recession on trade unions.

Lastly, control variables were included in the model so as to ensure the robustness of observed statistical relationships. We controlled for union representatives' tenure, gender of the respondents, firm size, sector, union membership density, and the presence of a union-management partnership agreement. This selection of control variables is thought to be adequate and reflective of possible interfering factors in the given theoretical model. The decision to limit control variables to the aforementioned constructs was made in order to avoid suppressing effects that might contaminate statistical outcomes.

Common method variance

Owing to a single source of independent and dependent variables as well as to the attitudinal nature of the present study, a thorough consideration was given to the possible presence of the common method variance in our study (Podsakoff et al, 2003). In this vein, we conducted three prominent tests: Harman's one single factor test and its extension to the Confirmatory Factor Analysis (CFA), a marker variable test, and a single common method factor method (Lindell and Brandt, 2000; Lindell and Whitney, 2001; Podsakoff et al, 2003).

The Harman's single-factor test was performed on the basis of Exploratory Factor Analysis (EFA) where all exploratory variables were loaded on the analysis and the number of factors to extract was set at one. We then examined the factor solution. An emerging single factor failed to explain the most of the covariance amongst observed items (it accounted inly for 30% of the covariance). Furthermore,

we adopted CFA to ensure that a single factor cannot accurately explain the covariance between the observed items. The output has shown poor goodness-of-fit where RMSEA = 0.164, CFI = 0.592, TLI = 0.546, and SRMR = 0.127. To perform the marker variable test the variable that captures union representatives' views on trade union collaboration at the European level was included in the questionnaire. Such variable is deemed to be unrelated to other constructs included in the present study and thereby considered to be an appropriate marker variable. The only significant correlation was observed between the marker variable and trade union militancy ($B=0.180$ at $p<0.05$). Finally, we have shown that a single common method factor is unlikely to be present in the sample (Podsakoff et al., 2003; Richardson et al., 2009). In sum, common method variance is unlikely to contaminate the findings of the present study.

Procedure and model purification

We utilised structural equation modelling based on the robust maximum likelihood estimator to test the hypotheses of the present study (Bagozzi and Yi, 2012). Such technique allowed us to simultaneously test the effects of independent variables on a dependent variable and evaluate the moderated-mediation model. We followed Lingered et al. (2004) and Muller et al. (2005) strategy for moderated-mediation analysis by applying bias-corrected bootstrapping to derive confidence intervals for indirect effects and using simple-slopes test for the moderation effect of the economic recession (Preacher et al., 2007). The analysis was performed in R statistical software using 'lavaan' package for latent variable analysis. Since all study variables were operationalised as latent constructs, EFA and CFA were performed in order to test the measurement model. We used maximum likelihood estimator and Promax rotation to run EFA. The outcomes were affirmative signifying that all items have loaded on their respective components. No cross loadings and items loadings

lower than 0.5 have been observed. CFA returned fit indices consistent with the conventional cut-off points (Bagozzi and Yi, 2012; Bagozzi and Yi, 1988): RMSEA = 0.038, CFI = 0.978, TLI = 0.971, and SRMR = 0.047. Chi-square test has not featured prominently in CFA (Chi-square = 293.053, degrees of freedom = 188 at $p < 0.001$); however, we have not taken such indicator into consideration due to its sensitivity towards relatively large samples (Bagozzi and Yi, 2012). Discriminant and construct validity were reached as Composite Reliability (CR) as well as Average Variance Extracted (AVE) satisfied the existing cut off points (0.7 and 0.5 respectively) and AVE exceeded squared inter-construct correlations (Bagozzi and Yi, 1988; Bagozzi and Yi, 2012). All study variables, their mean scores and standard deviations, internal consistency reliability, CR and AVE are reported in Table 1. Table 2 contains squared inter-construct correlations.

Results

Structural equation modelling outputs for direct relationships are reported in Table 3 including regression coefficients, standard errors and model fit indices. Table 4 contains the results for the moderated-mediation model, the bottom part of this table reflects the results of bias corrected bootstrapping test for mediated relationships. Both models returned appropriate fit. The analysis has fully confirmed Hypotheses 1a and 1b such that trade union power positively impacted on the adoption of HPWS whereas union militancy produced a negative effect on the dependent variable (B-coefficient = 0.436 and -0.334 respectively at $p < 0.001$) Both independent variables were shown to significantly affect industrial relations climate confirming thereby Hypotheses 2a and 2b (B-coefficient = 0.614 and -0.417 respectively at $p < 0.001$).

Turning to arguably most relevant hypotheses of the current study, we have found full support for the moderated-mediation model (Hypotheses 3 and 4 were fully

confirmed). Table 4 indicates that the effects of union power and trade union militancy on HPWS are indirect and occurred through the industrial relations climate such that the latter fully accounts for direct relationships between the independent and dependent variables. In other words, we have confirmed a full mediation effect and established the positive industrial relations climate as an enabling mechanism for the adoption of HPWS. The effect of industrial relations climate on HPWS is positive (B-coefficient = 0.671 at $p < 0.001$) which indicates that the positive industrial relations climate trans conflicting impacts of trade union power and union militancy into positive determinants of HPWS. The bottom portion of Table 4 indicates statistical significance of confidence intervals for indirect effects derived from bias corrected bootstrapping pointing thereby to the significance of the causal mediation effect. Table 4 also contains the interaction effect of industrial relations climate and the economic recession. The interaction effect is significantly negative which confirms Hypothesis 4 (B-coefficient = -0.137 at $p < 0.001$). Figure 2 depicts the output of simple slopes test for moderation effects and demonstrates that negative outcomes of the most recent recession deteriorated the propensity of industrial relations climate to facilitate the adoption of HPWS

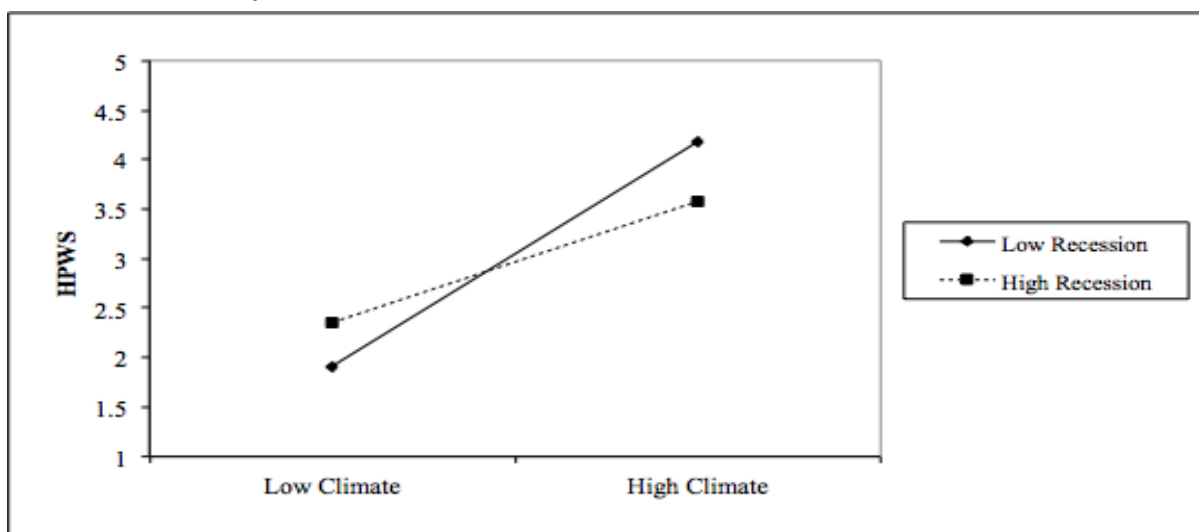


Figure 2 Interaction effect of industrial relations climate and economic recession

Discussion

The present study attempted to unravel the complex effects of trade unions on the adoption of HPWS. The crux of this paper was in adapting the social context perspective and introducing the positive industrial relations climate as an enabling mechanism for HPWS through which conflicting effects of trade union power and union militancy can be transformed into positive determinants of HPWS. In line with two dimensions of external environment (internal and external) we have shown that the industrial relations climate indeed fully mediates the relationships between trade union power, union militancy and the adoption of HPWS. Furthermore, our analysis confirmed a moderation effect of the economic recession in the aforementioned indirect relationship such that the dire consequences of the most recent economic crisis reduced the capability of the positive industrial relations climate to support the adoption of HPWS.

The direct impact of trade union power and union militancy on the adoption of HPWS

An important outcome of our study is the unravelled complexity of the relationship between trade unions and HPWS. The analysis has shown that the effect of trade unions can be both positive and negative depending on particular characteristics of a trade union. Whereas strong trade unions fostered the implementation of HPWS, the organisations where trade unions were militant towards management were less likely to adopt HPWS. This implies that the impact of trade unions on the adoption of HPWS is more complex than prior research portrayed. It is inherently positive and negative and depends more on the actual position occupied by trade union in the organisation. Trade unions may be empowered by their membership to conduct genuine deliberations with management. In such settings managers might reciprocate and share HR strategies with trade unions. In other words, the parties may jointly formulate HPWS and facilitate their

implementation. Trade unions may as well stick to adversarial type of relationships and therefore strongly oppose any innovative HRM practices. This does not rule out the impact of trade union power, but rather makes the findings of this study more nuanced showing that particular directions of union policy are of high importance for HPWS. These findings have profound implications for both parties, trade unions and managers, as they might design their strategies based on the knowledge on how each party might affect to the adoption of HPWS.

The moderated mediation effect of industrial relations climate and the economic recession

A key finding of the present study relates to the moderated mediation effect of industrial relations climate and the economic crisis in the relationship between trade union power, union militancy and the adoption of HPWS. We found evidence that the mixture of negative and positive relationships between independent and dependent variables were fully mediated by the positive industrial relations climate. These findings were anticipated because previous studies have identified the quality of employment relations as a useful mediator in the links between organisational circumstances and innovative human resource management practices (Dastmalchian et al. 1989; Deery et al. 1999). In particular, prior research allowed us to suggest a beneficial effect of collaborative and supportive environment of union-management deliberations on the adoption of HPWS. In line with our findings, we argue that in unionised workplaces the organisational potential for HPWS rests fully on the likelihood for quality employment relationships between trade unions and employers. In other words, neither trade union power nor union militancy directly affected HPWS. Their impact is rather indirect and occurs through the climate of industrial relations. Within the limits of the present study, therefore, we infer that a supportive and collaborative atmosphere in the workplace serves as the underlying mechanism by

which HPWS may be adopted. Despite assumptions that in the workplaces with militant trade unions HPWS are less likely to be adopted, our study shows that there is a potential for adopting HPWS using the climate of industrial relations as a vehicle for promoting such practices (Guest et al. 2008). This also follows that achieving a positive industrial relations climate should be one of the main goals for both employers and trade unions, whether or not trade unions rely on the adversarial type of relationships.

An important addition to the mediation role of industrial relations climate is the interference of the economic crisis. The study unveiled that the negative outcomes of the most recent recession have affected both trade unions and employers and deteriorated the capacity of the positive industrial relations climate to facilitate the adoption of HPWS. This further enriches our understanding of the importance of organisational social environment for the adoption of HPWS. In particular, during the periods of economic downturns even organisations covered by the supportive climate of union-management relationship may consider adjusting their behaviour and subsequently making necessary amendments in various elements of HPWS.

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Variable		Mean	SD	Alpha	FL	CR	AVE
Recession	This is not as good a place to work as it was before the recession	5.56	1.537	0.795	0.552	0.790	0.450
	The conditions of employment at this workplace have deteriorated	5.33	1.735		0.514		
	The management-union relationship has deteriorated	4.43	1.883		0.921		
	The organization has suffered as a consequence of the recession	5.37	1.679	0.789	0.670		
	The organization has operated in an increasingly difficult external environment since the recession	5.57	1.540		0.583		
Union power	The trade union has a lot of influence over decisions made at this workplace	4.21	1.679	0.893	0.861	0.894	0.738
	The trade union here is able to hold management to account	4.64	1.625		0.813		
	The trade union here significantly affects the way the organization is run	4.01	1.639		0.900		
Militancy	Informal communication with the management would be useless without the ability to take industrial action	4.89	1.710	0.752	0.868	0.766	0.623
	The potential for industrial action is necessary for successful collective bargaining outcomes	5.49	1.560		0.702		
Climate	Union and management work together to make this organization a better place in which to work	4.41	1.671	0.934	0.843	0.940	0.758
	Union and management have respect for each other's role	4.33	1.694		0.887		
	Once agreement is made management stick to it	3.99	1.755		0.771		
	In this organization bargaining takes place in an atmosphere of good faith	4.23	1.678		0.907		
	A sense of fairness is associated with management-union relations	4.01	1.687		0.936		
HPWS	Considerable importance is placed on the recruitment process	4.38	1.737	0.797	0.540	0.884	0.500
	Extensive training programmes are provided for employees	3.82	1.663		0.577		
	Employees have clear career paths in this organization	3.26	1.580		0.722		
	Managers regularly inform employees about the relevant aspects of organizational life	3.60	1.611		0.732		
	Employers support staff in their development	3.63	1.606		0.854		
	Some elements of pay are based on employee individual performance	3.70	2.058		0.749		
	Some elements of pay are based on organizational performance	3.55	1.919		0.670		
	Employees are encouraged to suggest improvements in the way things are done in this organization	4.21	1.797		0.713		
Firm size	N/A	N/A	N/A	N/A	N/A	N/A	
Membership density	N/A	N/A	N/A	N/A	N/A	N/A	
Collective agreement coverage	N/A	N/A	N/A	N/A	N/A	N/A	
Tenure	N/A	N/A	N/A	N/A	N/A	N/A	
Gender	N/A	N/A	N/A	N/A	N/A	N/A	
Sector	N/A	N/A	N/A	N/A	N/A	N/A	

Note: Sample size: 382. Fit indices: Chi-square=293.053, degrees of freedom (188) at p<0.001; CFI=0.978; TLI=0.971; RMSEA=0.038; SRMR=0.047. FL - CFA factor loadings; CR - Composite Reliability; AVE - Average Variance Extracted

Table 2 Inter-construct squared correlations and Average Variance Extracted					
	HPWS (AVE=0.500)	Union power (AVE=0.728)	Union militancy (AVE=0.623)	Recession (AVE=0.450)	Industrial relations climate (AVE=0.758)
HPWS	1				
Union power	0.117	1			
Union militancy	0.063	0.027	1		
Recession	0.211	0.139	0.154	1	
Industrial relations climate	0.418	0.326	0.406	0.086	1

Table 3 Direct effects of recession and union outcomes on HPWS and industrial relations climate		
	HPWS	Climate
Power	0.436*** (0.035)	0.614*** (0.053)
Militancy	-0.334*** (0.037)	-0.417*** (0.063)
Tenure	0.057 (0.040)	0.075 (0.061)
Gender	-0.002 (0.086)	-0.009 (0.132)
Sector	0.066 (0.069)	0.025 (0.103)
Size	-0.026 (0.057)	-0.052 (0.087)
Density	-0.135* (0.041)	0.007 (0.059)
Agreement	-0.047 (0.158)	-0.031 (0.240)
	Sample size: 382. Fit indices: Chi-square=326.304, degrees of freedom (209) at p<0.001; CFI=0.970; TLI=0.962; RMSEA=0.038; SRMR=0.062.	

Table 4 Mediated effects through industrial relations climate		
	HPWS	
Climate	0.671*** (0.048)	
Climate X Recession	-0.137*** (0.034)	
Power	0.007 (0.018)	
Recession	-0.029 (0.039)	
Militancy	-0.041 (0.030)	
Tenure	0.010 (0.035)	
Gender	0.010 (0.075)	
Sector	0.055 (0.060)	
Size	0.007 (0.051)	
Density	-0.147* (0.036)	
Agreement	-0.031 (0.137)	
	95 % confidence interval derived from biased corrected bootstrapping	
	Lower 5 %	Upper 5 %
Power	0.159	0.264
Militancy	-0.135	-0.054
	Sample size: 382. Fit indices: Chi-square=603.094, degrees of freedom (364) at p<0.001; CFI=0.951; TLI=0.941; RMSEA=0.044; SRMR=0.070	