

**Researching Employee Reactions to High Performance Work Systems in  
the Service Sector: The Role of Organisational Justice Theory.**

**Margaret Heffernan**

Dublin City University Business School  
Dublin City University  
Glasnevin  
Dublin 9  
Ireland  
Ph: +353-1-7006874  
Email: [margaret.heffernan@dcu.ie](mailto:margaret.heffernan@dcu.ie)

**Tony Dundon**

J.E. Cairnes School of Business & Public Policy  
National University of Ireland, Galway  
Galway  
Ph: + 353 (0) 91 492356  
Email: [tony.dundon@nuigalway.ie](mailto:tony.dundon@nuigalway.ie)

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**Abstract**

This study explores the relationship between organisational-level High Performance Work Systems (HPWS) and individual employee-level behaviours. Data was collected from 188 employees in three companies in the Republic of Ireland (RoI). The findings show that employees in organisations with a high investment in HPWS report lower job satisfaction, affective commitment and higher perceptions of job pressure than those in organisations with a medium or low investment in HPWS. Using cross-level analyses, perceptions of relational distributive and relational procedural justice were found to mediate the relationship between HPWS and employee outcomes of job satisfaction and affective commitment. Interactional justice and relational procedural justice partially mediated the relationship between organisational-level HPWS and employee work pressure. By using justice theory, the research contributes to the body of knowledge concerning the causal processes between HR practice and performance outcomes.

**Introduction**

Over the last twenty years, a burgeoning body of literature has emerged on the ways in which human resource (HR) practices impact positively on an organisation's 'bottom line'. Prominent within this literature is the concept of high performance work systems (HPWS) which claims to have strong beneficial effects on both employee and organisational performance. However, the field is plagued with casual ambiguity and theoretical underdevelopment. Guest (2011) argues that the rush to empiricism to prove that HRM can add to performance has been at the cost of conceptual understanding and explanation. The primary criticism leveled at HPWS research concerns its lack of theoretical development and the need for a better articulation of what can explain the "black box" phenomenon - in other words, *how* and *why* a particular HR system can enhance (or not) firm-level performance (Becker and Huselid, 2006; Boselie et al., 2005).

What is known is that improved organisational performance can only be achieved through employees who display greater effort and behavioural attributes to help the firm succeed (Guest, 1997). Yet research that integrates employee attitudes and behaviours is surprisingly limited. Of the 104 studies examined by Boselie et al. (2005), only 11 used employee survey data. Few studies have yet to properly test the association between HPWS and employee outcomes (Boon et al., 2011) and those that have, have failed to develop theory to underpin this HPWS-employee outcome relationship (Wood and de Menezes, 2011). Guest (2011) notes that whilst researchers are finally acknowledging that multiple stakeholders, including employees, are necessary to advance understanding, more research is needed to examine the underlying processes and mechanisms involved in HPWS effects. Consequently, in this paper, we address three core research questions: (a) what and how do employees experience HPWS?; (b) which mechanisms influence the relationship between HR practices, employee attitudes and performance outcomes?, and finally (c), how can such a relationship be explained and better interrogated?

The article contributes to knowledge by researching the neglected role of employees as the primary recipients of HPWS. The research also extends the theoretical understanding of why HPWS may impact employee outcomes by integrating the role of organisational justice as a potential mediator to explain the 'black box' of HPWS: that is, to assist in understanding the

causal processes between organisational-level HR practices and individual-level employee outcomes. Specifically, we make the argument that fairness perceptions of HPWS exert a strong influence on how employees react to these enacted policies. In the next section the literature on HPWS and organisational justice is reviewed, leading to the development of four specific hypotheses. In Section 3 the research methodology and measurement scales are explained, followed by the results in Section 4. Finally, in Section 5, a number of implications are discussed for theory and practice.

## **Theoretical background and hypotheses**

### *HPWS and employee outcomes*

There is no universally agreed meaning for the term HPWS due to quite broad differences regarding the theoretical, empirical and practical approaches adopted (Boxall and Macky, 2009). Despite this however, HPWS can be broadly described as a range of innovative human resource management practices, work structures and processes, which, when used in certain combinations or bundles, are mutually reinforcing and produce synergistic benefits (Huselid, 1995). These systems are built around the following core HR policy areas: (1) sophisticated selection and training; (2) behaviour-based appraisal and advancement criteria; (3) contingent pay systems; (4) job security; and (5), employee involvement initiatives (Cook, 2001).

It is generally accepted that the literature on the links between HRM and performance utilising firm-level data has failed to provide consistent or conclusive findings. It is often managerially biased in its tenor with insufficient attention devoted to those at the receiving end of HR policy (Legge, 2005). A key ‘problem’ with much HPWS research is its largely unitarist assumptions which presuppose that a positive outcome for an organisation will be as relevant and equally applicable to workers (Guest, 1999, Thompson, 2011). Importantly, employees can be recognised as more than abstract ‘objects’ against which researchers prod and measure certain responses to a given set of assumptions. Rather, workers are themselves active agents and ‘subjects’ who can and do shape the world around them (Grant and Shields, 2002; Dundon and Ryan, 2010). It is, therefore, necessary to explore beyond firm-level reported data and tease out the interdependencies and roles of employees in mediating and shaping the HPWS agenda. Research has shown, for example, that organisational-level performance improvements may be due to work intensification (Ramsey et al., 2000) rather than greater discretionary effort (Appelbaum et al., 2000), higher job satisfaction (Wood and de Menezes, 2011), or improved trust in management (Innocenti et al., 2011).

Previous research has shown a positive association between clusters of HPWS practices and a range of company and employees gains (Guest, 1999). For example, studies have found that HPWS has positive implications for employees through improved quality of work (Kalmi and Kauhanen, 2008), positive psychological implications (Guest, 2007; Tietze and Nadin, 2011), higher pay (Handel and Levine, 2006) and increased autonomy (Harley et al., 2007). In addition, opportunities for skill development and employee participation have been shown to impact job satisfaction (Boxall and Macky, 2009). Wood and de Menezes (2011) reported that the consultative elements of HPWS contribute to job satisfaction and well-being by enhancing the individuals’ sense of value, worth, and security. Similarly, research has also demonstrated that affective commitment is strongly associated with HPWS. Affective commitment is the most desirable form of commitment as it is based on emotional attachment which leads to positive behaviours by employees. According to several studies, employee commitment has been affected by HPWS practices such as recruitment, training and compensation (Buchko, 1992), as well as the HR system overall (Tsui et al., 1997). Other

scholars have established important links between HPWS and perceptions affecting commitment (Zaleska and de Menezes, 2007), trust in management (Innocenti et al., 2011), work effort (Appelbaum et al., 2000), and employee turnover (Guthrie, 2001). However, the positive outcomes of HPWS for employees may not be as mutually beneficial as originally thought. Godard (2004) concluded that the positive outcomes are at best uncertain. Critical authors such as Ramsey et al. (2000) and Godard (2004) counter the optimistic, mutually beneficial rhetoric of some authors by suggesting that the performance gains of HPWS were through increased control and work intensification rather than increased discretionary effort or job satisfaction. There is evidence that a win-lose outcome can occur where greater diffusion of HPWS can lead to negative employee outcomes, including longer working hours, stress and perceptions of job insecurity (Ramsay et al., 2000; Godard 2001, 2004). A study by Danford et al. (2008:163), for example, found support for the work intensification thesis with research suggesting that HPWS was 'driving labour harder through a combination of compulsory and discretionary means'. As workloads have increased along with greater responsibility for problem solving, workers are required to maintain an excessively fast pace of work, leading to increased intensity of work and higher levels of stress (Parker and Slaughter, 1988). Guest (2007) acknowledges that there is some evidence that HPWS increases the demands of the job, which can be associated with slightly higher work pressure and work stress.

The mixed results from previous research discussed above suggests that while there is a clear association between certain HPWS practices and performance, the direction and impact on employee satisfaction, commitment and trust is less clear. Similarly, critics have not found overall support for the argument that HPWS leads to negative outcomes for employees (Ramsey et al., 2000). From the above review and consistent with the core research questions, the following is the first of four hypotheses regarding potential HPWS impact:

*Hypothesis 1:* Organisational-level HPWS will be significantly associated with individual-level employee (H1a) job satisfaction, (H1b) affective commitment, (H1c) trust in management (H1d) work effort (H1e) intention to leave and (H1f) work pressure

#### *The mediating role of organisational justice*

The previous section has shown that employee outcomes such as job satisfaction and affective commitment can be influenced by HPWS adoption. However, these relationships are not necessarily direct or unconditional (Paré and Tremblay, 2007). A gap exists in understanding how employee perceptions of HPWS practices explain the link to behavioural outcomes in terms of justice and fairness (Farndale et al., 2011; Fuchs and Edwards, 2012). Importantly, Wright and Nishii (2007) draw attention to the distinction that can be made between intended, implemented and perceived HR practices. 'Intended' HRM are those policies and practices developed at organisation level. 'Actual' practices are those enacted by line management in the process of implementation, while 'perceived HR' practices are employees' perceptions of HR enactment. These perceptions then influence employee-level outcomes by affecting the way the employee thinks, feels or behaves (Purcell et al., 2009). As a result of this distinction, it is necessary to take into account the quality of implementation of the HPWS system as a whole.

In building this analysis further, the role of organisational justice can be observed as an important potential mediating link that has been neglected in extant research concerning the link between HPWS and employee outcomes (Fuchs and Edwards, 2012). Organisational justice refers to 'the extent to which people perceive organisational events as being fair' (Colquitt and Greenberg, 2003: 166). Greenberg (1990: 399) argues that perceptions of

organisational justice are ‘a basic requirement for the effective functioning of organisations and the personal satisfaction of the individuals they employ’ which, in turn, shapes employee behaviours. Research has shown that the concept is a powerful predictor of people’s affective, cognitive and behavioural reactions in various work contexts (Folger and Cropanzano, 1998). While previous studies have examined the relationship between organisational justice and individual HR practices such as pay (McFarlin and Sweeney, 1992), performance appraisals (Greenberg, 1986), and staffing (Gilliland, 1993), few have examined the fairness of the HR ‘system’ as a whole. Justice researchers have typically distinguished between four types of justice: the perceived fairness of outcomes (distributive justice); the fairness of the procedure used to make decisions about who gets what outcome (procedural justice); the interpersonal treatment received during the implementation of the procedure (interactional justice); and the perceived adequacy and timeliness of information (informational justice) (Colquitt et al., 2001).

Distributive justice refers to the fairness of the outcomes received as a result of an allocation decision. This is usually judged with respect to some referent standard (Greenberg, 1990). Perceived inequity has the potential to have strong implications in an organisational context where distribution of outcomes are frequent and play an integral part (such as outcomes from HPWS). Research has shown that perceptions of equity relate to some of the main alleged HPWS outcomes including pay satisfaction and commitment (Tekleab et al., 2005) and increased workload (Brockner et al., 1994). Perceived inequity can result in disengagement and increased turnover (Kenny and McIntyre, 2005). Therefore, we hypothesise that:

*Hypothesis 2:* Distributive justice will positively mediate the relationship between organisational-level HPWS and (H2a) job satisfaction, (H2b) affective commitment, (H2c) trust in management (H2d) work effort, (H2e) intention to leave, and (H2f) work pressure

In addition to distributive justice, procedural justice refers to the perceived fairness of decision-making procedures (Thibaut and Walker, 1975). People evaluate the fairness of procedures by their level of consistency, bias suppression, accuracy, correctability, ethicality, and the degree to which they allow voice and input (Leventhal, 1980). The weight of evidence examining procedural justice appears to be strongly related to HR-related practices: selection (Gilliland, 1993); performance appraisals (Erdogan et al., 2001); career management (Crawshaw, 2006), pay (McFarlin and Sweeney, 1992), and employee voice opportunities (Deery, 2002). Evidence links employee voice satisfaction with perceptions of process fairness and motivation (Cawley et al., 1998). Furthermore, research has shown that voice can lead to positive perceptions of procedural justice (Korsgaard and Roberson, 1995) regardless of the final decision. Procedural justice has also been shown to relate to other people management issues such as trust in management, job satisfaction, employee commitment, staff turnover, work effort and work pressure (Masterson et al., 2000; McFarlin and Sweeney, 1992). Paré and Tremblay’s (2007) study of skilled workers in Canada found that procedural justice mediated the relationship between high-involvement HR practices and turnover intentions. This suggests that procedural justice is negatively related to turnover intention, implying a potential relationship with possible behavioural outcomes underpinning the HPWS model. Findings from cross sectional and longitudinal studies also suggest that procedural justice plays a role in pressure and psychosocial stress at work. Judge and Colquitt (2004) argue that HR practices with high procedural justice have the ability to reduce uncertainty and feelings of stress. Taken together, these considerations have led us to formulate the following hypotheses:

*Hypothesis 3:* Procedural justice will positively mediate the relationship between organisational-level HPWS and (H3a) job satisfaction, (H3b) affective commitment, (H3c) trust in management, (H3d) work effort, (H3e) intention to leave, and (H3f) work pressure

The final element of organisational justice concerns the quality of the interpersonal treatment employees receive at the hands of decision-makers – what researchers have referred to as interactional justice (Bies and Moag, 1986). Whilst procedural justice focuses on the structural elements of justice, informal sources of the fairness that employees encounter during these procedures also need to be explored (Blader and Tyler, 2003). Because interactional justice emphasises one-on-one transactions, employees often seek it via supervisory supports. Interactional justice is defined as the interpersonal treatment received at the hands of decision-makers with a focus on social sensitivity and informational justification. The antecedents of interactional justice perceptions are strongly embedded in HPWS contexts: selection (Gilliland, 1993), performance appraisals (Erdogan et al., 2001), variable pay (Cox, 2003) and grievance handling (Nabatchi et al., 2007), among others. For example, Bies and Shapiro (1988) examined interactional justice in performance appraisal settings and found that unfavourable ratings were more likely to be perceived as fair if acceptable explanations were provided, than if no explanations were given. Interactional justice has been shown to impact employee outcomes such as job satisfaction (Masterson et al., 2000), higher trust (Ambrose and Schminke, 2003) and a committed workforce motivated towards higher productivity (Cropanzano et al., 2007). Given these indications, it is hypothesised that:

*Hypothesis 4:* Interactional justice will positively mediate the relationship between organisational-level HPWS and (H4a) job satisfaction, (H4b) affective commitment, (H4c) trust in management, (H4d) work effort, (H4e) intention to leave, and (H4f) work pressure

By viewing perceived organisational justice of HPWS, we arrive at a unifying framework for understanding employee responses to HPWS. As stated earlier, the research approach is to develop a cross-level analysis to help alleviate known deficiencies in existing studies. To this end the mediating role of organisational justice is tested in the relationship between organisational-level HPWS (intended HRM), individual-level organisational justice encounters (experienced HRM), and employee-level behaviours (actual HR performance outcomes). This cross-level integration is presented graphically in Figure 1 below.

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INSERT FIGURE 1 ABOUT HERE.  
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### **Methodology and variable operationalisation**

The current research utilises a cross-sectional questionnaire as its main method. Data was collected at two levels: information regarding company policy (intended HRM) was collected from HR managers as part of a larger HPWS national survey of high-performing companies in Ireland. Follow-up data from employees themselves was then collected from three organisations who participated in the national survey, each selected to reflect variation in terms of corporate performance and HR architecture. All three organisations operated in the service sector. *FoodCo* is one of Ireland's largest contract catering suppliers and employs 4000 employees across multiple sites. *InsureCo* is a mutual insurance company that employs 85 in their Irish office. *ProfCo* is an international professional service consultancy firm,

which employs 2300 in Ireland across seven sites. Data collection took place between May 2008 and December 2009. A total of 795 questionnaires were distributed and 209 returned. However, 24 responses were eliminated due to excessive missing data and therefore, the final sample size for testing was 187 (weighted average response rate of 30.9 percent). These 187 responses were pooled together and treated as one dataset (whilst controlling for organisational and occupational variations). Over half of the respondents were female (59.9 percent); 64 percent had a higher level of education beyond secondary school; and 40 percent were aged between 26-35 years. Mean tenure for the sample was 5.24 years with the maximum length of employment being 34 years. The majority of respondents were full-time employees. The operationalisation of variable constructs is explained next. Unless otherwise noted, all items were measured using a five-point Likert response scale ranging from 1 (strongly disagree) to 5 (strongly agree). Factor analysis (principal component analysis with varimax rotation) was performed on all multiple scale items to determine item retention (Ford et al., 1986). Only items with loading of 0.40 or higher were retained (Comrey, 1978).

*High performance work systems:* The measure for HPWS practices was taken from the national survey of HR managers which provided for a continuous HPWS measurement index scale (Heffernan et al., 2009). The HPWS practices used were validated measures from previous research (Guthrie, 2001; Huselid and Rau, 1997; Jackson et al., 1989). A total of 28 practices were included covering: *employee resourcing, training and development, performance management and remuneration, communication and involvement, and work-life balance*. In order to capture both the breadth and depth of HPWS diffusion within and across organisations, responses were segregated into two employee categories, as suggested by Jackson et al. (1989): ‘Group A’ consisted of production, maintenance, service and clerical employees; and ‘Group B’ included executives, managers, supervisors and professional/technical employees. Research which focuses on distinct categories overcomes the limitations of studies which treat all occupational groupings and employee classes as equal.

Using the number of employees in each group, a weighted average for each HR practice was computed and then converted to Z-scores. As noted by Guthrie (2001: 183), this means that ‘organisations may range from those making no use of high-involvement practices to those using *all* of the practices for *all* of the employees’. The average use of HPWS in our sample of Irish firms ( $x = 46.33$ ;  $s.d. = 16.17$ ) compares favorably with other (US) results ( $x = 49.58$ ;  $s.d. = 15.27$ ) reported by Datta et al., (2005). The three organisations varied in the extent to which they invested in HPWS. *FoodCo* was categorised as having low HPWS investment scoring 29.75 on the HPWS index out of a possible 100. *InsureCo* had medium investment with a score of 59.04. *ProfCo* invested the most in HPWS across all employees groups with a score of 77.46 on the HPWS index. Cronbach’s alpha of the aggregate measure was 0.82.

*Organisational justice:* A number of debates can be found in the justice literature relating to construct discrimination, measurement and analysis, especially the distinctiveness of the justice dimensions. Some researchers have made no effort to separate procedural and distributive justice and instead treat them as one overall justice concept (Martocchio and Judge, 1995). A similar issue applies to procedural and interactional construct discrimination, where some researchers treat interactional justice as a third justice measure, while others consider it a subset of procedural justice (Colquitt, 2001). In order to test for the potential mediating impact of organisational justice on employee outcomes at a deeper and more refined level of analysis, three justice constructs were used, with procedural and interactional justice being treated as separate measures. In this way tests could, if necessary, be conducted

by combining measurement scales at a later stage. Thus, three justice scales were used to measure (1) distributive justice, (2) procedural justice, and (3) interactional justice.

A second issue to consider was the context in which fairness is to be judged. Gilliland and Paddock (2005) argued against investigating justice in a context-free manner as generic items were believed to be less informative, since they do not tell us the specific aspect of the work situation the respondents had in mind when reporting their fairness perceptions. This issue of context is especially important in investigating the impact of a bundle of HPWS practices on employee outcomes with a focus on the 'system' as a whole, rather than a series of individual practices. It is evident that in most firms, employees are typically exposed to a host of HR practices simultaneously (Takeuchi et al., 2009), and outcomes should operate at the system level (Ichniowski et al., 1997). As a result, respondents in this study were asked for fairness perceptions across each individual HPWS practice making up the HPWS system (e.g. compensation, performance management).

Taking these two issues into consideration, three justice measures were applied as follows. *Distributive justice* was measured using a nine item scale measuring distributive fairness of decisions across the following HPWS practices: 'employee resourcing', 'training and development', 'performance management', 'pay', 'employee involvement', and 'succession planning'. These measures focused on the assessment of the degree to which rewards received by employees are perceived to be fair when related to performance inputs. Thus, in assessing pay respondents were asked to identify the extent to which they agreed or disagreed with the following item: 'I am fairly paid for the amount of work I do'. This applies the equity rule to distributive justice perceptions (Colquitt 2001). These individual items were factor analysed and loaded onto two factors. One factor (seven items) measured employee perceptions of distributive fairness for a bundle of HR practices (staffing, performance management, succession planning, training and development and employee involvement) which was titled 'relational distributive justice'. This factor explained 46.90 percent of variance and had a Cronbach's alpha of 0.74. The remaining two items loaded onto a second factor relating to distributive fairness of compensation titled 'transactional distributive justice'. Cronbach's alpha for this scale was 0.83.

*Procedural justice* was measured using 10 items adapted from Sweeney and McFarlin (1993) and Tyler and Lind (1992). This scale used both direct and indirect justice measures. An example of a direct justice item included: 'In my opinion, procedures used to evaluate my performance are fair'. Indirect procedural justice items examined voice perceptions in particular. For example, an item assessing voice in performance appraisals was: 'My supervisor gives me the opportunity to express my views and feelings during my performance evaluation'. The 10 items were factor analysed and were found to load onto two factors. One factor measured employee perceptions of how procedurally fair HR bundles were regarding 'staffing', 'performance management', 'succession planning', 'training and development', and 'employee involvement'. This factor explained 53.58 percent of variance and was labelled 'relational procedural justice'. Cronbach's alpha for this seven-item scale was 0.87. The remaining three items loaded onto a second factor relating to procedural fairness of compensation (eigenvalue = 1.08, % of variance = 10.82%) which was titled 'transactional procedural justice' and had an alpha coefficient of 0.80.

*Interactional justice* used Bies and Moag's (1986) measurement rules by considering whether the authority figure enacting the HR procedure (usually a supervisor) treated the employee with dignity and respect (interpersonal justice) and explained decisions clearly (informational justice). Items used in the survey were taken from Colquitt (2001). Informational justice

items included: ‘My supervisor lets me know my appraisal outcomes and provides justification’. Interpersonal items included: ‘My supervisor treated with me respect and dignity during pay determination’. This scale had a one-factor solution and a coefficient alpha of 0.92, indicating that items were internally consistent.

*Employee outcomes:* In total, six employee attitudinal and behavioural variables were constructed and used to investigate the links between organisational-level HPWS practices and individual employee-level outcomes, with the justice constructs discussed above used to test for potential mediation effects. For simplicity, the variables are presented in Table 1 along with the source, operational definition and Cronbach’s alpha values. Some items were designed to be reverse scored and were modified before data analysis began. The alpha scores for the employee outcome variables ranged from 0.93 to 0.55, with the variable ‘intention to leave’ scoring 0.55 and all the others above 0.80. An alpha coefficient of 0.7 and above is usually considered an effective reliability level (Nunally, 1978), although following Hair et al. (1998), 0.5 can be considered as indication of adequate reliability. Therefore, it was decided to retain the employee responses to ‘intention to leave’ scale.

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INSERT TABLE 1 ABOUT HERE.  
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*Control variables:* The employee data included a number of control variables: gender (male = 1; female = 0), age (two dummy variables where Age1 is coded 1 = 25-45 years; 0 = < 20 years and greater than 45; Age2 is coded 1 = > 45 years and 0 = less than 25 years), education (1 = primary degree or higher; 0 = no degree), organisational tenure (measured in years), and nature of employment contract (1 = permanent; 0 = non permanent). Research has shown that these variables affect employee job attitude behaviours particularly in organisational justice research (Greenberg and Wiethoff, 2001). Similarly, Boselie et al., (2005) found that individual-level HPWS studies tended to control for personal characteristics such as age, gender, tenure and educational attainment.

*Analytical techniques:* The data was analysed in several phases. First, differences between organisational-level HPWS for the dependent variables were examined, using One-Way ANOVA in order to distinguish between the employees within the three organisations. The tests indicated that organisational-level HPWS did have a significant effect on job satisfaction, work effort, work pressure ( $p < .05$ ) and intention to leave ( $p < .01$ ). No significant differences were found for affective commitment or trust in management across the three organisations.

Cross-level effect analysis was then used to help overcome the problem of small sample size at the higher level. A cross-level direct effect model suggests that a predictor variable at one level of analysis influences an outcome variable at a different level of analysis. Following Mossholder and Bedeian (1983), regression analysis procedures were then used to examine group effects. To begin with, group-level variables represented by the organisation-level mean for HPWS were assigned to each individual nested within each organisation. For example, all employees in *FoodCo* were assigned an organisational mean for HPWS of 29.75 (as reported earlier from the national survey data). Fixed effect methodologies were then deployed to explore relationships between variables that can characterise a complex system (Farron, 1997). Fixed effects were examined by creating dummy variables. As there are three HPWS types covering the HPWS index scale (high, medium and low), two dummy variables were created: ‘Dummy HPWS High’ and ‘Dummy HPWS Low’ to allow for fixed effects. For variable ‘Dummy HPWS High’, employees in ProfCo were coded as 1 indicating high

HPWS score at organisational-level with employees in FoodCo and InsureCo coded 0. For variable ‘Dummy HPWS Low’, employees in FoodCo were coded as 1 (indicating low HPWS score at organisational-level) with employees in InsureCo and ProfCo being coded 0.

To establish mediation, cross-level analysis steps were used as outlined above in conjunction with recommended steps to test for mediation by Baron and Kenny (1986). Mediation analysis has conventionally been used to study relationships within a single level of analysis. However, Matthieu and Taylor (2007) refer to *cross-level mediation, lower-level mediator*, where  $X$  is an upper-level variable that exerts an influence on a lower-level criterion as transmitted through a lower-level mediator (i.e.,  $X \rightarrow m \rightarrow y$ ). Taking Hypothesis 2a as an illustration of Baron and Kenny’s (1986) steps, the following conditions must be met to support a mediating relationship. First, organisational-level HPWS (the independent variable) must be significantly associated with the mediator (distributive justice). Second, organisational-level HPWS must be significantly associated with the dependent variable (job satisfaction). Third, distributive justice (the mediator) must be significantly associated with job satisfaction. Finally, when organisational-level HPWS and distributive justice are concurrently tested on their relationships with job satisfaction, the effect of organisational-level HPWS is either reduced or disappears as a result of the inclusion of the mediator, distributive justice. A Sobel test was also conducted to examine whether the indirect effect of the independent variable (organisational-level HPWS) on the dependent variables (individual outcomes) via the mediators (organisational justice) is significantly different from zero.

## Findings

Descriptive statistics, internal consistency reliabilities, and intercorrelations for the variables are presented in Table 2. It is worth noting that most correlations were in the expected direction. For example, interactional justice was positively associated with outcomes such as job satisfaction and affective commitment. Most of the correlations were lower than 0.70, suggesting that the measures were suitable for inclusion in the hierarchical regression analyses used to test the hypotheses. Tests for multicollinearity showed there were no multicollinearity problems in any of the regression analyses.

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INSERT TABLE 2 ABOUT HERE  
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Hypothesis 1 (a to f) addressed the relationship between organisational-level HPWS and individual-level employee attitudes and behaviours. Hierarchical regression was used to test this hypothesis. Using job satisfaction, affective commitment, trust in management, work effort, work pressure and intention to leave as dependent variables, the control variables were entered in the first step of the equation. In the second step, the two dummy HPWS variables were entered. Table 3 presents the results of the cross level regression results between organisational-level utilisation of HPWS and employee outcomes. In the regression analyses, the results show that high HPWS was a strong predictor of increased work pressure ( $\beta = .229$ ,  $t = 2.133$ ,  $p < .05$ ). High investment in HPWS at policy level was also found to have a significant negative impact on job satisfaction ( $\beta = -.292$ ,  $t = -2.809$ ,  $p < .01$ ) and affective commitment ( $\beta = -.217$ ,  $t = -2.075$ ,  $p < .05$ ). Hypotheses 1a, 1b and 1f were supported. No cross level effects were found for HPWS and trust in management, intention to leave and work effort.

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INSERT TABLE 3 ABOUT HERE  
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To test the cross-level mediation effects of organisational justice, the independent variable (organisational-level HPWS) was recoded as a dummy variable (1 = high investment in organisational level HPWS; 0 = low and medium investment in organisational-level HPWS). Hypotheses 2, 3 and 4 theorised that distributive, procedural and interactional justice would positively mediate the effects of organisational-level HPWS on: a) job satisfaction, b) affective commitment, c) trust in management, d) work effort, e) intention to leave, and f) work pressure. The results for the mediation analyses are reported in the same order as the four steps suggested by Baron and Kenny (1986) and are shown in Tables 4 and 5. The first condition for mediation proposes that organisational-level HPWS (independent variable) should be significantly related to the mediating variables. Results in Table 4 show that HPWS is a significant predictor of relational distributive justice ( $\beta = -.233, p < .01$ ), relational procedural justice ( $\beta = -.264, p < .01$ ), and interactional justice ( $\beta = -.262, p < .01$ ). No association was found between organisational-level HPWS and either transactional distributive or transactional procedural justice. Therefore, these variables do not mediate the relationship between organisational-level HPWS and employee outcomes.

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INSERT TABLE 4 ABOUT HERE  
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The second condition necessitates that HPWS (independent variable) should be significantly related to the dependent variables. The findings for these regression results were presented in Table 3. High HPWS was found to be significantly associated with job satisfaction, affective commitment and work pressure. No association was found between HPWS and trust in management, work effort or intention to leave; therefore the second causal step was violated. Thus, we can conclude that the hypotheses suggesting that distributive, procedural and interactional justice positively mediates the relationship between organisational-level HPWS and trust in management (H2c, H3c, H4c), work effort (H2d, H3d, H4d), and intention to leave (H2f, H3f, H4f), are rejected.

To test the third condition of mediation, the mediators were entered into the model to determine its relationship on the three dependent variables remaining. The final condition to be met to claim partial or full mediation was tested by entering organisational-level HPWS into the regression whilst controlling for the mediator for each dependent variable which had met the previous mediation criteria. Table 5 presents the mediation regression results for HPWS and a) job satisfaction, b) affective commitment, and c) work pressure, and the three mediators. Results show that the relationship between HPWS and job satisfaction was no longer significant after the introduction of relational distributive justice, which fulfilled condition four. The Sobel test supported the findings ( $z = 2.46, p < .05$ ). When relational distributive justice was added to the model for affective commitment, it was found to be significantly related to affective commitment ( $\beta = 0.43, p < 0.001$ ) and the direct effect of HPWS became insignificant ( $\beta = -.070, ns$ ), suggesting full mediation. The findings from the Sobel test confirmed the mediating effect ( $z = 2.53, p < .05$ ). Finally, when relational distributive justice and work pressure were entered into the regression, the effect of relational distributive justice reduced to zero for the mediator, whilst the dependent variable remained significant, suggesting no mediation effect. This reveals that relational distributive justice fully mediates the relationship between HPWS and job satisfaction (H2a) and affective commitment (H2b), but did not mediate the HPWS-work pressure relationship (H2f).

Relational procedural justice was found to be a full mediator between HPWS and job satisfaction, as the effect of HPWS when controlling for relational procedural justice reduced to zero. The Sobel test was significant ( $z = 2.93, p < .01$ ). Table 5 shows that relational

procedural justice was found to be a complete mediator for HPWS and affective commitment, as the effect of HPWS, when controlling for relational procedural justice, reduced to zero ( $\beta = -.036$   $p = ns$ ). Thus, relational procedural justice fully mediates the relationship between HPWS and affective commitment. The Sobel test was significant ( $z = 2.93$ ,  $p < .01$ ). Hypothesis 3f predicted that the association between HPWS and work pressure would be mediated by procedural justice. After controlling for relational procedural justice, the association between HPWS and work pressure declined, although remained significant. This process revealed that relational procedural justice partially mediated the HPWS-work pressure relationship. The Sobel test supported the findings ( $z = 2.34$ ,  $p < .05$ ).

Finally, support was found for hypotheses 4a, 4b and 4f. When HPWS and interactional justice are included in the analysis, the previously significant relationship between HPWS and job satisfaction is no longer significant. Thus, interactional justice was found to completely mediate the HPWS–job satisfaction relationship, such that there was no significant direct relationship when perceptions of interactional justice were controlled for. In support of hypothesis 4b, when interactional justice was added to the model, it was found to be significantly related to affective commitment ( $\beta = .43$ ,  $p < 0.001$ ) and the direct effect of HPWS became insignificant ( $\beta = -0.07$ ,  $ns$ ), suggesting full mediation. Sobel test results showed that both mediations were significant (job satisfaction:  $z = 2.93$ ,  $p < .01$ ; affective commitment:  $z = 2.93$ ,  $p < .01$ ). Finally, the fourth condition of mediation tested for work pressure. Table 5 shows that the direct effect of HPWS on work pressure reduced but is still significant when interactional justice is entered into the equation, suggesting partial mediation. The findings from the Sobel test confirmed this mediation ( $z = 2.16$ ,  $p < .05$ ).

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INSERT TABLE 5 ABOUT HERE  
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## Discussion

The present study had three core objectives: (a) employee experiences of HPWS; (b) the way people management policies influence employee outcomes and behaviours, and (c), to subject the conceptual relationship between organisational-level policy and individual-level outcomes to critical interrogation. Regarding the first objective, the results show significant negative or work-intensification employee experiences of HPWS. In relation to the second and third objectives, the findings suggest important cross-level mechanism effects between organisational-level people management policies and individual employee-level perceptions of justice. These are important determinants in explaining the causal chain between policy and outcome reality which has been neglected in much previous research. Three theoretical implications arise from this evidence that warrant further discussion.

The first is that employees who experience high diffusion of HPWS were found to report lower job satisfaction and affective commitment, and higher perceptions of work pressure and work intensification. In short, so-called high performance is not necessarily or always positive for the employees who have to labour under such work systems. The reported relationships between HPWS and employee outcomes reinforce the arguments made by Appelbaum et al., (2000) and Guest (2011) that the causal effect of HPWS remains a contested domain in much extant theory. These findings are broadly in line with critics of HPWS who argue that greater diffusion of HPWS can lead to negative employee experiences, including lower perceptions of job-security and increased job strain (Green, 2004; Ramsay et al. 2000). Theoretically, it would appear necessary that the employee is placed at the centre of any analysis about the impacts of a HPWS model. It is workers who ‘experience’ these

systems and it is their perceptions of both system and process fairness that have been shown to make a difference. It is in this way that knowledge can then seek to unpick and shed light into the 'black box' of the alleged HR-performance linkage. Importantly, given that certain HR practices (e.g. contingent pay and performance management) can produce negative experiences for workers, the idea of a HPWS model may have little intellectual purchase beyond a euphemism for work stress, long hours and the social pressure to conform to a managerial-led agenda for wealth creation at the employees' cost. A related implication for practice may be that HPWS policies may increase system complexity. In other words, too many management initiatives can lead to overload for employees. For example, a system where a performance appraisal is added to teamwork in a flattened hierarchy, along with new expectations that employees need to participate in more decision-making, can lead to systematic failure and negative rather than performance-enhancing behaviours.

A second implication, which directly addresses the Special Issue call for this journal, relates to the theoretical framework used to interrogate the contextual antecedents of justice perceptions of HPWS fairness and its diffusion to individual employee experience. The findings suggest support for a mediating model to explain organisational justice and HPWS-employee outcomes. In this area the evidence showed that employees differentiate between pay and other HR practices for both perceptions of distributive and procedural fairness. This distinction is important when examining the mediating effect of justice perceptions on HPWS, as it was relational aspects (those relating to long-term investment in employees such as promotion and training) which had the strongest mediating effect. Neither distributive nor procedural justice perceptions of pay (transactional) were found to mediate the relationship between HPWS and job satisfaction, affective commitment and work pressure. In contrast, relational distributive justice and procedural justice were full mediators for HPWS, job satisfaction and affective commitment. These also partially mediated the HPWS-work pressure relationship. Findings for interactional justice reinforced the important role played by the supervisor with respect to people management policy implementation as it fully mediated the relationship between HPWS and both job satisfaction and affective commitment, and was a partial mediator for work pressure.

Moreover, organisational justice is an important theoretical lens neglected in much HPWS research. Related to the point earlier of the need to place the employee at the centre of analysis, the explanatory utility of organisational justice can be seen as an important direct and indirect mediator. From this it can be argued that when employees perceive that HPWS practices are procedurally fair, and when their line manager treats them with dignity and respect, then job satisfaction and affective commitment may increase. A corollary of this is that employers need to realise employees are not passive recipients of a system designed to evoke responses and change behaviours at will. Employees engage in their own work schedules and job tasks that result in more iterative, complex and integrated social and psychological workplace dynamics (Tietze and Nadin, 2011). This implication is not too far removed from other related research findings. For example, perceptions of the rightfulness of procedures in an organisation has been found to have effects on decreased levels of stress and trust in management (Ambrose and Schminke, 2003). Unequivocally, organisational justice perceptions are important predictors of employee responses to HPWS. Significantly, distributive, procedural and interactional justice variations were all important mediators between HPWS and outcome measures such as job satisfaction, affective commitment and work pressure.

The third important implication concerns the use of cross-level data methodologies. The findings from this research also provide additional support for the work of Bowen and Ostroff

(2004) and Takeuchi et al. (2009) by examining HPWS across multiple levels in order to show how policy is implemented and employee experiences of HPWS. The cross-level analysis proved valuable when looking at the sequence of boxes that reflect the HRM and employee outcomes linkage at firm and subsequent employee levels. A great deal of previous research has been from single respondents (usually the HR manager), whereas the evidence in this article investigates both firm-level system design with employee-level outcomes. Findings show that examining employee experiences of HPWS, in addition to firm-level HPWS, proved critical to advancing knowledge and understanding of the chain of events through which formal practices of HPWS influence employee attitudes and behaviours. It is therefore suggested that future researcher may benefit from more precise and sophisticated multi-level forms of analysis integrating justice constructs of employee experiences to managerial or hierarchical systems of HRM more broadly.

As with any research, however, there are always certain limitations that ought to be noted. While the cross-sectional research design can add value, it may also limit causality. Technically, only statistical associations can be explored and the directionality of results can be subject to debate. Another caveat relates to the conceptualization and measurement of justice perceptions. The methodology section outlined the key decisions taken when choosing a scale to measure the justice perceptions of the HPWS as a whole. These decisions meant that direct justice measures were used to assess perceptions within various contexts which results in shorter items for some justice dimensions. A further note of caution is that while variability existed in terms of organisational-types (e.g. low, medium and high investment in HPWS), the response rate from employees across these different corporations was on the low rather than high side, which may have been influenced by non-response bias. Taken together, these issues may limit the generalizability of the findings.

## **Conclusion**

The research questions posed earlier set-out to understand how and why HPWS impacts employee behavioural outcomes. This study found no support for the mutual gains thesis that HPWS generates improved or management desired employee behavioural outcomes. Instead, findings support the ‘management by stress’ consequence of greater diffusion of people management policies, where a high performance HR model results in work intensification, dissatisfaction, and lower commitment. The findings show that an organisational justice framework can advance knowledge on the link between organisational-level HPWS practices and employee-level behavioural outcomes. The research reported in this article is also an important corrective to the overly managerial interpretations of HPWS, by bringing the employee into the heart of the HR-performance relationship. Moreover, the findings help explain, to some extent, the casual chain of events in understanding the HPWS processes. This was achieved by testing and exploring evidence using cross-level techniques and methodologies that may prove fruitful to researchers in the future.

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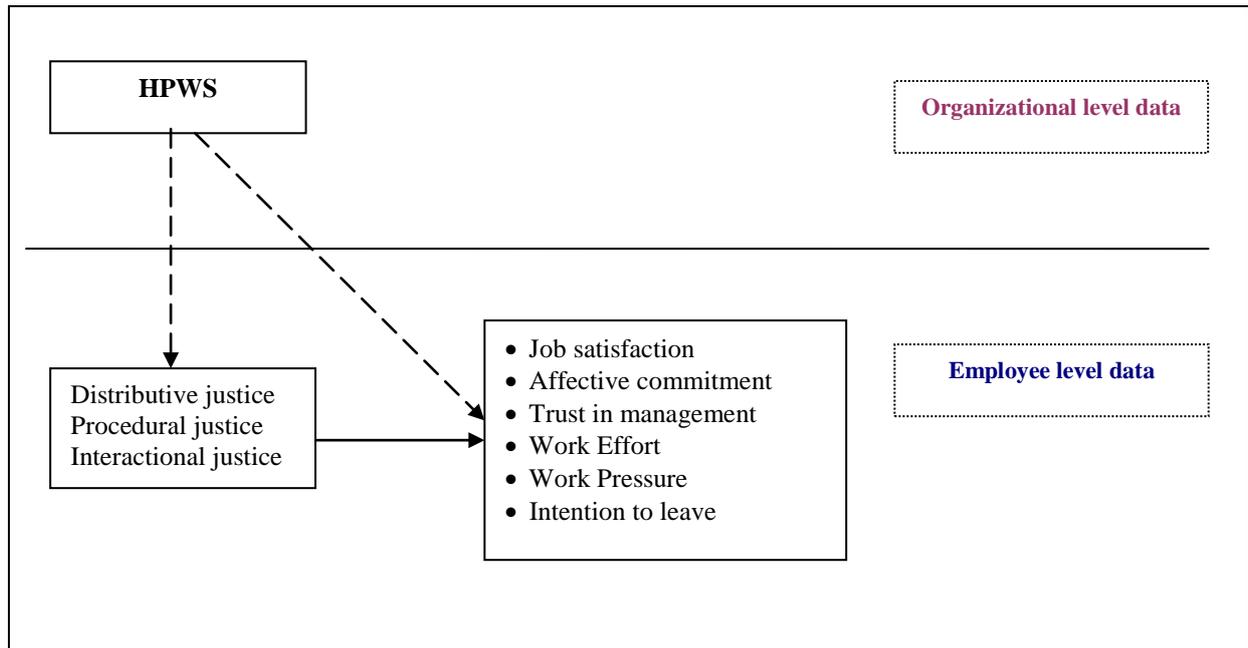
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**Figure 1: A cross level model of organizational level HPWS, organizational justice and individual-level attitudes and behaviours**



—————> Denotes a correlation and regression relationship  
 - - - - -> Denotes a cross-level inference of the relationship between macro level HPWS investment and employee level variables

**Table 1: Employee outcome variables**

Variable	Source/Validation	Example of statements included	Reliability coefficient
<b>Employee Outcomes</b>			
<i>Job Satisfaction</i> (3 item scale)	Dunham and Smith, 1979	'All in all, I am satisfied with my job'	0.93
<i>Affective Commitment</i> (5 item scale)	Meyer and Allen, 1997	'I feel a strong sense of belonging to my organisation'	0.89
<i>Trust in Management</i> (3 item scale)	Kersely et al., 2006; Guest et al., 2008	'Management delivers on its promises'	0.82
<i>Work Effort</i> (2 item scale)	Danford et al., 2005	'I often put effort into my job beyond what is required'	0.83
<i>Work Pressure</i> (6 item scale)	Burchell, 2002; Danford et al., 2005	'I feel under pressure from my managers and supervisors in my job'; 'I never seem to have enough time to get my job done'	0.87
<i>Turnover Intention</i> (3 item scale)	Cammann et al., 1983	'It is likely that I will leave my employment with this organisation within a year'	0.55

**Table 2 Demographic statistics and Pearson correlations among the variables**

Variable	M	SD	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
1. Gender	-	-																
2. Age	-	-	.028	-														
3. Education	-	-	-.077	-.107	-													
4. Employee Category	-	-	.050	.112	.111	-												
5. Tenure	5.27	5.82	-.001	.540*	.063	.242**	-											
6. HPWS (High)	-	-	-.091	.175*	.215**	.104	.240**	-										
7. HPWS (Low)	-	-	.112	-.077	-.329**	-.191**	-.315**	-.613**	-									
8. Distributive Justice (Trans)	3.24	1.11	.009	.140	-.030	-.162*	.198*	-.033	-.095	(.83)								
9. Distributive Justice (Rel)	3.44	.683	-.014	.004	-.049	-.097	.137	-.189**	.103	.406**	(.74)							
10. Procedural Justice (Trans)	3.26	1.01	.009	-.008	-.037	-.132	.096	-.089	-.038	.758**	.554**	(.81)						
11. Procedural Justice (Rel)	3.62	.809	-.025	.084	.012	-.081	.165*	-.190**	.039	.483**	.811**	.639**	(.87)					
12. Interactional Justice	3.73	.831	-.027	.043	-.008	-.083	.162*	-.157*	.016	.471**	.795**	.656**	.813**	(.92)				
13. Job Sat	3.65	.943	-.033	.232**	-.044	-.032	.249**	-.115	-.071	.348**	.455**	.442**	.579**	.622**	(.88)			
14. Affective Commitment	3.35	.980	-.074	.236**	-.085	-.010	.283**	-.071	.009	.293**	.489**	.435**	.555**	.588**	.833**	(.93)		
15. Trust in mgt	3.53	.925	-.036	.184*	-.071	-.033	.187*	.002	.080	.352**	.473**	.434**	.575**	.578**	.579**	.651**	(.82)	
16. Work effort	3.97	.998	.147*-	.037	.115	-.022	.131	.095	-.164*	-.007	.160*	.045	.214**	.258**	.399	.251**	.174*	(.83)
17. Work Pressure	2.88	.980	.086	-.054	.042	.147*	.060	.158*	-.126	-.216**	-.196**	-.270**	-.265**	-.246**	-.156*	-.218**	-.233**	.248**
18. Intention to leave	2.47	1.09	.014	-.256**	-.027	.005	-.272**	-.119	.228**	-.209**	-.225**	-.179*	-.294*	-.306*	-.553	-.450**	-.401**	-.308**

\* p < 0.05, \*\* p < 0.01, \*\*\* P < .001

**Table 3: Regression results testing the relationships between HPWS (IV) and the dependent variables**

Step	Variables	Job Satisfaction		Affective commitment		Trust in Mgt.		Work Effort		Intention to Leave		Work Pressure	
		Model 1	Model 2	Model 1	Model 2	Model 1	Model 2	Model 1	Model 2	Model 1	Model 2	Model 1	Model 2
<b>1</b>	Gender	.064	.044	-.022	-.041	.008	-.004	.217**	.238	-.042	-.050	.138	.168*
	Age 1	.023	.051	-.023	.016	.028	.065	.013	-.044	-.084	-.056	.065	-.006
	Age 2	.196	.222*	.148	.170	.064	.067	.034	.026	-.160	-.159	-.035	-.059
	Education	.001	-.002	-.039	-.020	-.014	.032	.129	.078	-.078	-.044	-.038	-.086
	Employee category	-.093	-.093	-.040	-.033	-.014	.004	-.159	-.179**	.074	.085	.102	.083
	Tenure	.225*	.220*	.267**	.281**	.201*	.245*	.170	.119	-.268**	-.231*	.033	-.011
<b>2</b>	Dummy HPWS High		<b>-.292**</b>		<b>-.217*</b>		.051		.056		.025		<b>.229*</b>
	Dummy HPWS Low		-.203		-.078		.222		-.176		.156		-.042
	<b>Adj R<sup>2</sup></b>	<b>.071</b>	<b>.108</b>	<b>.085</b>	<b>.102</b>	<b>.012</b>	<b>.029</b>	<b>.063</b>	<b>.068</b>	<b>.083</b>	<b>.086</b>	<b>.004</b>	<b>.047</b>
	<b>Δ R<sup>2</sup></b>		<b>.048</b>		<b>.028</b>		<b>.030</b>		<b>.036</b>		<b>.016</b>		<b>.055</b>
	<b>F</b>	<b>2.899*</b>	<b>3.260**</b>	<b>3.334**</b>	<b>3.138**</b>	<b>1.287</b>	<b>1.535</b>	<b>2.693**</b>	<b>2.816**</b>	<b>3.217**</b>	<b>2.735**</b>	<b>1.090</b>	<b>1.941*</b>

\* = p < .05 \*\* = p < .01 \* \*\* = p < .001 (standardised coefficients reported) Gender (1=male; 0 = female); Education (1 = primary degree 0 = no degree); (1 = permanent; 0 = non permanent).

**Table 4: Regression results testing the relationships between HPWS (IV) and the mediators**

Step	Variables	Distributive justice (transactional)		Distributive justice (relational)		Procedural justice (transactional)		Procedural justice (relational)		Interactional justice	
		Model 1	Model 2	Model 1	Model 2	Model 1	Model 2	Model 1	Model 2	Model 1	Model 2
<b>1</b>	Gender	-.009	-.020	.023	-.001	.009	-.005	.015	-.013	.011	-.016
	Age 1	-.139	-.162	.063	.009	-.016	-.047	.016	-.045	-.005	-.065
	Age 2	-.065	-.074	-.091	-.111	-.041	-.053	-.023	-.045	-.047	-.070
	Education	-.025	-.007	-.028	.012	-.038	-.015	.054	.099	.034	.079
	Employee category	-.246**	-.240**	-.110	-.096	-.158	-.149	-.124	-.108	-.124	-.108
	Tenure	.233*	.249**	.251**	.286**	.143	.164	.230*	.270**	.228*	.268**
<b>2</b>	Dummy HPWS High		-.102		<b>-.233**</b>		-.137		<b>-.264**</b>		<b>-.262**</b>
	Adj R <sup>2</sup>	<b>.081</b>	<b>.084</b>	<b>.015</b>	<b>.056</b>	<b>.003</b>	<b>.007</b>	<b>.016</b>	<b>.071</b>	<b>.015</b>	<b>.069</b>
	Δ R <sup>2</sup>		<b>.009</b>		<b>.046</b>		<b>.016</b>		<b>.059</b>		<b>.058</b>
	F	<b>3.239**</b>	<b>2.998**</b>	<b>1.84</b>	<b>2.304*</b>	<b>.920</b>	<b>1.149</b>	<b>1.412</b>	<b>2.682*</b>	<b>1.385</b>	<b>2.623*</b>

\* = p < .05 \*\* = p < .01 \*\*\* = p < .001 (standardised coefficients reported) Gender (1=male; 0 = female); Education (1 = primary degree 0 = no degree); (1 = permanent; 0 = non permanent).

**Table 5: Regression results testing the mediating relationships between HPWS (IV), the mediators, and dependent variables**

Dependent Variables	Independent variables	<i>B</i>	<i>t</i>	Adj R <sup>2</sup>	Δ R <sup>2</sup>	F
<b>Job satisfaction</b>						
Step 2	Organizational level HPWS	-.179*	-2.01	.093	.027	3.177**
Step 3	Organizational level HPWS	-.088	-1.09	.065		
	Distributive justice (relational) (M)	.383***	5.03	.226	.159	6.304***
Step 2	Organizational level HPWS	-.179*	-2.01	.093	.027	3.177**
Step 3	Organizational level HPWS	-.039	-.516			
	Procedural justice (relational) (M)	.515***	7.26	.335	.262	10.389***
Step 2	Organizational level HPWS	-.179*	-2.01	.093	.027	3.177**
Step 3	Organizational level HPWS	-.015	-.204			
	Interactional justice (M)	.579***	.575	.398	.317	13.037***
<b>Affective commitment</b>						
Step 2	Organizational level HPWS	-.173*	-2.05	.105	0.25	3.527**
Step 3	Organizational level HPWS	-.070	-.896			
	Distributive justice (relational) (M)	.430***	5.85	.191	.275	8.095***
Step 2	Organizational level HPWS	-.173*	-2.05	.105	0.25	3.527**
Step 3	Organizational level HPWS	-.036	-.484			
	Procedural justice (relational) (M)	.506***	7.17	.339	.252	10.614***
Step 2	Organizational level HPWS	-.173*	-2.05	.105	0.25	3.527**
Step 3	Organizational level HPWS	-.021	-.285			
	Interactional justice (M)	.547***	7.96	.377	.289	12.364***
<b>Work pressure</b>						
Step 2	Organizational level HPWS	.252**	2.93	.053	.054	2.212*
Step 3	Organizational level HPWS	.216*	2.46			
	Distributive justice (relational) (M)	-.151	-1.87	.068	.074	2.381*
Step 2	Organizational level HPWS	.252**	2.93	.053	.054	2.212*
Step 3	Organizational level HPWS	.189*	2.17			
	Procedural justice (relational) (M)	-.235**	-2.86	.098	.103	3.058**
Step 2	Organizational level HPWS	.252**	2.93	.053	.054	2.212*
Step 3	Organizational level HPWS	-.021	-.285			
	Interactional justice (M)	.547	7.96	.377	.289	12.364***

\* =  $p < .05$  \*\* =  $p < .01$  \*\*\* =  $p < .001$  (standardised coefficients reported) Controls used in step 1 were Gender (1=male; 0 = female); Age (in years), Education (1 = primary degree 0 = no degree); Work status (1 = permanent; 0 = non permanent) and tenure (in years); M = mediator. The mediators DJ(Trans) and PJ(Trans) were not included due to not meeting Baron and Kenny's (1986) mediation criteria.